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THE USE OF COMPUTER MEDIATED COMMUNICATION AS A TOOL IN
THE DELIVERY OF DISTANCE LEARNING MBA PROGRAMMES.
- A CASE STUDY OF THE USE OF THE HELP SYSTEM
AT HENLEY MANAGEMENT COLLEGE.

A thesis submitted for the degree of
Doctor of Business Administration.

by

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The Use of Computer Mediated Communication as a Tool in the
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- A Case Study of the Use of the HELP System
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With increasing technological advances in computing hardware and software, particularly groupware, and in telecommunications, the potential for the use of computer mediated communications (CMC) in education is growing. By focussing on a single case study, this thesis considers the potential for such use in MBA programmes delivered by distance learning. The aim of the thesis is not to prove theory nor test hypothesis, rather to add to the body of knowledge about such applications by observation of practical application and the evolving of theory.

The case concerns the use of Henley Management College's HELP system by three groups of distance learning MBA students over a period of about three years.

The research begins with a literature review, looking firstly at the nature and character of MBA education before considering distance education and open learning and its relationship to other forms of educational delivery culminating in the theory of delivery convergence. Learning styles and the nature and role of group work in learning are considered in the context of computer mediated communications application.

The empirical work is focussed on observation of student use of the HELP system with data generated from student questionnaires and from the system itself. This enables evaluation of the observed use of computer mediated communication to be undertaken from three principle perspectives, that of the individual, the group and the provider.

The results show the use of computer mediated communication to have had a mixed success in this case. It identifies causes for this and indicates courses of action to reduce the probability of failure and increase the probability of successful development of the potential of CMC as a delivery tool in this environment. This research supports the hypothesis that CMC can be added to distance education to surrogate face-to-face activities, but with limited success. To achieve its full potential, it needs to be conceived as a novel form of communication and be fully integrated into any programme within which it is used. As such, it is shown that CMC can play a significant role in the delivery of third generation MBA programmes.

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A colleague recently described her experience in undertaking her doctoral thesis as a "mystery tour" in which, as driver, she shared the mystery of the route with her passengers. I empathise with this description of her experience, but would change the mode of transport to that of sailing yacht sailing through some calm, but often turbulent, seas.

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CHAPTER 1. INTRODUCTION.

1.1. Introduction.

Within the UK the MBA programme began to evolve in the late 1960's following a similar growth in North America. Its exclusivity in its early days coupled with its subsequently perceived effectiveness in developing general management skills and competences led to its becoming a prized qualification that would almost guarantee the holder a significant salary rise and an excellent career path as the qualification was widely respected and sought after by many, but not all, employers. There was resistance to the qualification by some employers who saw MBA graduates as arrogant, knowing theory but ignorant of practical application (Cameron, 1994,p.12). Despite this resistance, the MBA programme has become a widely accepted management qualification (Carnall, 1992,p.1) leading to a rapid rise in the demand for MBA programme places in the late 1980's which in turn led to a rapid rise in the number of institutions offering MBA programmes.

This rapid rise in the growth of MBA provision, which was based initially on full-time residential study but latterly supported by various part-time and distance learning variants, came to a halt with the onset of recession and is only now just beginning to increase again. However, the recession has also accelerated a change in the balance between the various forms of delivery of the MBA programme from the traditional residential method to part-time and distance learning methods of study. In 1993 there were 9,800 students registered for MBA programmes with UK providers (O'Leary, 1994). These were divided almost equally between full-time, part-time and distance learning methods of study.

Unlike the North American MBA where the majority of students are fresh from their first degrees with little or no business or management experience, the UK MBA is predominantly post-experience. For example, two leading providers, Cranfield

and the Open University, both require a minimum of three years management experience before they will consider students. The reason for this is that without this prior experience it is believed that graduates would have a good theoretical understanding of management issues, but, without the experience within which to place the theory, the practice of management would be severely limited. Students also have much to learn from each other's experiences as well as from the taught aspects of the course (Thompson, 1994). Margerison (1991, p.101) supports the need for prior management experience in order to place the theory learnt into a practical perspective, and for the need for students to be prepared to work in groups not only in order to learn from each others experience, but also to learn the skills required in undertaking group-based tasks which he sees as an important management skill.

One of the major values in the conventionally taught MBA programmes lay in the interaction between students at least as much as in the interaction between students and tutors. In other words, whilst the course was designed initially to impart knowledge, much of the value of the course to the student was the sharing of, and learning from, each others wealth of experience. This was an essential part of the Henley ethos and from the College's inception formed the basis for the design of programmes. Sir Noel Hall, Henley's first Principal, determined that:

"an essential feature would be the process of cross-fertilization, which would result from the bringing together of people from different professional and employment backgrounds" (Slater, p.52).

The demise of full-time programmes and the increase in popularity of distance learning based programmes has, by the very nature of the process, caused the balance between these two aspects of learning to move strongly towards the impartation of knowledge and severely limited the interaction between students, and for that matter between students and both academic and administrative staff of the providing organisation.

The reasons for this move away from full-time programmes stem in part from the increasing pressure on organisations caused by the evolving economic environment which is leading to flatter and leaner organisational structures which in turn make it far more difficult for employees to be away from work for the extended periods of study that full-time MBA programmes demand. This move was further encouraged by a reduction of government grants for full-time study making it much more difficult for the individual to finance such study without employer support. Whilst these problems can be alleviated to some extent by various forms of part-time programmes, this form of study is only suitable for a comparatively small proportion of students. This situation has encouraged the growth of the distance learning mode of delivery as it can be undertaken whilst still maintaining a full-time job, and is also considerably cheaper than the full-time variant.

The fundamental issue is, therefore, given the high profile that distance learning has now achieved on MBA programmes, how can the feature of shared learning from student interaction and the interaction between student and provider be restored to their former levels given the severe limitations imposed by the very nature of the distance learning process.

The basic premiss of this thesis is that computer mediated communication (CMC) can provide a means of, at least partially, redressing this balance.

The research project upon which this thesis is based evolved from the development by Henley Management College of its distance learning based MBA programme, and in particular, its Inter-Company MBA programme. The basis of the latter programme was that four or five students from each of four or five organisations would be enrolled together onto one intake, or syndicate, and would work together on a structured programme. A key objective of this programme was that the students would not only benefit from interaction with people from their own organisation, but also more significantly from those from the other participating organisations. Whilst

there was to be some face-to-face contact at approximately five scheduled one-day workshops each year, further regular contact was not practical because of the pressures of the workplace and because of the geographical spread of students over most of the British Isles and, in a few cases, continental Europe. In this situation computer mediated communications (subsequently referred to as CMC), and specifically the Henley Extended Learning Programme (HELP) system, was adopted as one means of encouraging the development of peer support and shared learning by providing a means of inter communication between students themselves, but also with tutors and administrators.

The purpose of this research is to investigate how the use of such a facility as HELP can be developed to this end.

Henley not only used the HELP system with the Inter-Company programme, but also with the Tailored programme (designed for a group of students from a single employer to study as a group) and the Open Distance Learning Programme (on which individual students can register independently). The facility was used to differing degrees and supported to a greater or lesser extent in each of the three programmes. In order to determine the significance of the differing uses and degrees of support provided, all three programmes were monitored. Student responses, both in terms of initial perceptions and after experience of the system, were obtained via two questionnaires, one before experiencing the system or after only initial introduction, and the second after substantial opportunity for experience of using the system. The success or otherwise of specific activities were investigated through detailed monitoring of the activity and the collection of complete transcripts of the interchanges of communication together, in some cases, with post exercise interviews/questionnaires with the participants.

The methodology adopted for this research is that of the single case study as defined by Yin (1990), the case in question being the application of Henley's HELP system to its distance learning based MBA programmes. This form of research methodology has in recent years become widely used within the field of education to explore the processes and

dynamics of practice (Merriam, 1988). Whilst comparisons will be drawn with the experiences of other users of computer mediated communications within the same field, the main thrust of this research is to develop theory and application as to how providers of distance learning MBA programmes in general, and Henley Management College in particular, might best utilize this medium to enhance the delivery and support of their programmes.

1.2. Structure of the Thesis.

The thesis is constructed in three parts. The first section considers the literature and sets the theoretical basis for the thesis. The second section sets out and justifies the methodology, explains the data collection processes and then analyses the data. The final section considers the implications of the findings on the potential for the use of CMC within distance learning based MBA programmes.

The thesis begins in chapter 2 by describing MBA education and its changing nature and gives a description of its current and evolving characteristics with particular reference to the distance learning mode. It concludes by developing a model to describe the desired interactions within such programmes. The focus of this thesis is upon distance learning based programmes and chapter 3 investigates distance learning as a medium, considers what it is, and how it relates to open learning. It concludes by considering convergence theory which says that the distinction between traditionally delivered programmes and distance learning based programmes is gradually disappearing as the characteristics of both change in response to the market and to advancing technology.

With the changing emphasis in delivery of programmes towards distance learning it is important to consider how delivery may be affected by the way people learn. Chapter 4 begins by considering the current debate about knowledge versus competence based learning in such programmes and then considers various theories regarding learning styles. This supports the concept of practical application of theory and

group activity (a traditional aspect of Henley delivery methods) which is common in many MBA programmes. This leads into chapter 5 which explores the nature of groups, how they function and what makes them effective particularly, within a learning environment. It also identifies the aspects of group development that need special attention from the programme designer of distance learning based programmes, particularly those involving the use of CMC.

As this research is based upon a single case set within Henley's MBA programme, chapter 6 describes this programme in its various forms and, with emphasis on the distance learning versions, the function and operation of the various forms are evaluated by using the frameworks developed in chapter 3. The changing nature of both the traditional and the distance learning versions of the programme are considered and evaluated against the framework for convergence also developed in chapter 3. This helps identify the ongoing trend in the changing nature of MBA programmes and thus allows the future potential for application of CMC to be subsequently addressed.

Before the role of CMC within distance learning programmes can be assessed it is necessary to understand CMC itself. In chapter 7 its history and development are investigated as is its current application within higher education. So that its potential value within postgraduate management education at a distance can be considered, its relevant characteristics and benefits to such programmes are identified.

The second section of the thesis begins with chapter 8 in which the aims of the research are outlined. The research is based upon the single case study method for which justification is made before the detailed methodology, including the framework for evaluation is evolved and described.

The Henley Extended Learning Programme (subsequently referred to as HELP) system is investigated in detail in chapter 9, considering in particular its technical structure, its concept and operation, and its facilities. The Henley distance learning MBA programme, and in particular the three

variants that form the basis of this research, are analysed and the differing role of CMC within each is described. The major survey and analysis of student usage and attitude are contained in chapter 10.

The final section of the thesis begins with chapter 11 in which the observed application of CMC within the three programme variants are evaluated using the frameworks derived in chapter 8. Chapter 12 takes the observations from this case study and, comparing them with published reports of the observations of three other comparable cases, further develops the theory relating to the degree and nature of tutor support required for the successful application of CMC within such scenarios. The thesis ends with chapter 13 in which conclusions are drawn regarding the successes and failures of the use of CMC in this environment and recommendations are derived as to how CMC may be used in the evolving distance learning MBA programmes both at Henley and elsewhere. Analysis is also made of the strengths and weaknesses of this research and recommendations are made for further research.

CHAPTER 2. WHAT IS MBA EDUCATION?

The objective of this chapter is to outline the background and nature of the MBA programme in order to set the particular application of computer mediated communication which is the subject of this thesis in its broader educational context. The background of the MBA and its popularity is considered alongside its changing nature. The chapter concludes by deriving a model to describe the currently emerging form of MBA programmes.

2.1. The MBA - Its Background.

From its inception the Masters of Business Administration degree has been generally regarded on an international basis as the premier management qualification for senior managers. Indeed, Carnall goes as far as to say "it is the only management qualification with an international 'currency' recognition" (1992,p.1). It is for this reason that many aspiring young, and not so young, managers across the world have flocked to study for the qualification. Until recent years the MBA was frequently seen as a guarantee of a significant salary rise, the automatic opening of doors to career opportunities in senior management and of providing a fast-track route to the boardroom. John O'Leary (1993) goes as far as describing it in its heyday in the 1980's as "the archetypal get-rich-quick qualification". Whilst there was, inevitably, some degree of truth in this belief in the early days of the MBA, this is no longer the case.

2.2. The MBA - Its Current Popularity.

The popularity of the qualification has led to a rapid rise in the number of providers. According to David Churchill (1993) there are over an hundred providers producing an estimated 8,000 graduates a year in the UK. Despite the recent recession, registrations at the schools with

established reputations are increasing whilst the value of the qualifications awarded by some of the less renowned schools is being increasingly questioned. The associated increase in those graduating has inevitably diluted the exclusivity of the qualification and the trend is now towards its acquisition becoming an essential for fast-track senior management success, rather than an automatic key. Professor Mike Pidd, Director of MBA's at Lancaster University Business School, is quoted (1994) as saying:

"the old glamour image of the MBA is gone. It was over sold in the UK in the 1980's just as it was over sold in America in the 1970's. There is little doubt that the explosion in the UK market damaged the standing of the qualification here".

This viewpoint is supported by Roger Trappe (1993) when he said:

"in the 1980's it (the MBA) was a passport to certain promotion and a vastly higher salary. In the 1990's, as the number of MBA graduates has mushroomed and the number of management jobs has shrunk, the degree has lost its glitter. It is now, or at least is rapidly becoming, a minimum qualification - just another essential item on a CV that demanding employers want to see before they even consider a candidate for a job."

The rapidly increasing numbers of MBA graduates causing a relative glut in supply coupled with the increase in the number of providers of whom some do not provide quality products are not the only factors causing the qualification to be devalued. A further significant factor is the belief held by some leaders in the field that the nature of the product from many of the major schools is not changing in line with the changing needs of the business world. Lataif (1992), the Dean of the School of Management at Boston University, said that:

"schools of management must change. They must begin teaching the practice of management as it should be, not as it has been. Certainly we must continue teaching the

basic functions of business, but in a context that produces an understanding of the interdependencies of organisational functions."

Mintzberg (1992), Professor of Management at McGill University, in the same debate goes further. He says:

"Stanford takes people, many with a minimum of experience, and pumps them full of theory, which they cannot possibly understand in context, because there is no context, neither personal nor in the classroom nor in the professor's head."

He goes on to criticise the Harvard method based upon case studies as even worse as students are taught to make evaluations without ever having met any of the company's customers, seen the factories or touched the products. This, he claims, creates two tiers of employees, "the ones who know the situation but have no MBA, and the others with the opposite credentials - as their bosses!"

2.3. The MBA - Its Changing Nature.

With this changing role of the MBA and the need for providers to vie for position in the inter-school ranking, schools are being forced to carefully examine not only the delivery methods that are required by customers, but perhaps even more significantly, what role in the overall process of management education the MBA should adopt. The move to radically re-think the rationale behind the structure of MBA programmes was focussed by Prof.H.Murray (1991) of the City University Business School in 1991 when he set out the requirements of the new type of MBA programme structure that he foresaw should include the following:

- the details of the MBA course are customised to meet the needs of individuals in particular organisations.
- the workplace is the centre of focus and not the campus.

- the course is as mobile as the participants.
- evaluation centres on measuring output - desired levels of competence, and managerial effectiveness rather than measuring the levels of assimilation of a set menu of academic courses.
- valuation embraces the trinity of factors that go to make for competence - knowledge, skills and personal development - and not, as is usual, on knowledge alone.

This radical rethink is described by Carnall (1995) as being a move from first generation programmes (where he maintains many programmes remain) in which the focus is on the teacher, through second generation programmes (where he maintains some of the better schools currently are) where the focus has shifted to the learner whose experience is considered an important resource, to the third generation programmes. In this the key features are project and action based learning principally in the real world of management and not the rarefied atmosphere of the conference room, learning contracts where the learner controls what he or she will learn, a learning partnership between the provider and the student's sponsoring organisation, and an international network to provide input to the programme.

Argyris (1993) advocates a bridge between theory and practice, "in education it is important that students connect what they learn with what they actually do." David Churchill outlines what he sees as this changing nature of MBA programmes (1993) when he says:

"business schools are tailoring their programmes to fit the new needs of the Nineties. Out have gone the rather woolly, academic and sometimes theoretical approaches that characterised some business schools in the past. In have come more practical, work-orientated courses."

This attitude is mirrored by Graham Clarke (1993) of Cranfield School of Management executive MBA programme who says that "companies ... are seeking MBA graduates not just

with a theoretical knowledge, but also with the influencing and leadership skills to put their ideas into practice."

Antonia Borges (1994), co-dean of Insead, the international management centre at Fontainebleau near Paris has said:

"the value of the quality MBA is beyond question. What we, as one of the market leaders, have to guard against is complacency. We are presently involved in a very serious review of our MBA programme. We're very strong on the technical, analytical and international dimensions, but we have a long way to go in areas related to personal skills, such as leadership, necessary for top managers of the future. That's something we're working very hard on."

When Cambridge University entered the MBA market in the early 1990's it adopted this need to change from the traditional concept of the MBA. Hendry (1992), the Director of their MBA Course, describes their programme as "structured around managerial learning objectives rather than the traditional functional disciplines". The process he describes is much more of a partnership between the provider and the student's company to create a balance of theory set in a practical context. This attitude is mirrored in North America. Lucy Hodges (1994) says:

"in a much-touted reform effort, Harvard's business school is proposing to update its fragmented and highly academic curriculum with a leaner, more coherent core of studies. The plan is to put more emphasis on what students want - career development and training in leadership - and to lighten the load of required study."

Thus it can be seen that the trend in evolving structure of MBA programmes is being influenced by pressure from three interested parties, the course member, his employer and the broader pool of employers. This pressure is creating a market force to which the providers are responding. Carnall (1992,p.54) typifies the major providers response:

"I am wholly convinced that learning in the field of management must be, can only be, an active process. I readily accept the view that management cannot be taught - it can only be learnt. The issue is to establish the conditions appropriate to effective learning. In general these conditions can best be summarised as follows:

- 1.The learning activities must be relevant to the personal/management development needs of the member.
- 2.The learning process must be active and require experimentation.
- 3.Provision must be made for effective feedback to the learners.
- 4.Access needs to be available to learning resources."

Magerison (1991) agrees that, if management education is to be worthwhile and meet the changing needs of business then, such changes are required when he sets out his criteria that need to be met by prospective MBA candidates:

- i. You should be at least 26 years of age.
- ii. You should have completed an undergraduate degree or similar professional qualification.
- iii. You should have at least three years of work experience, preferably in an organisational team.
- iv. You should have a strong desire to manage, whether it be as an executive or as a consultant.
- v. You should be prepared to do the MBA on a part-time basis using real projects from work as case studies for applying your learning.
- vi. You should be prepared to work at the MBA in groups rather than as an individual activity, as managing is a group-based task.
- vii. You should enter into contracts with yourself and your manager and colleagues to practice regularly what you learn and show what you have done.

Whilst this is looking at the issue from a different perspective from Carnall, Magerison is making the same

fundamental points of which one is the need for the practical application of the theory learnt, and a second is the need for collaborate working with other students as well as tutors.

2.4. The MBA - A Descriptive Model.

From this discussion of current trends in MBA provision it emerges that there is a consensus that provision needs to move from the earlier basis of emphasising knowledge based courses in which students are assessed principally by academic attainment, to a two pronged approach where the acquisition of knowledge is balanced by experience and the development of competence and skills. It is based upon this premise that I propose the model depicted in Figure 1 as a means of describing the interaction between the individual student, his peers and the college (or provider) that is required by this emerging form of MBA programme.

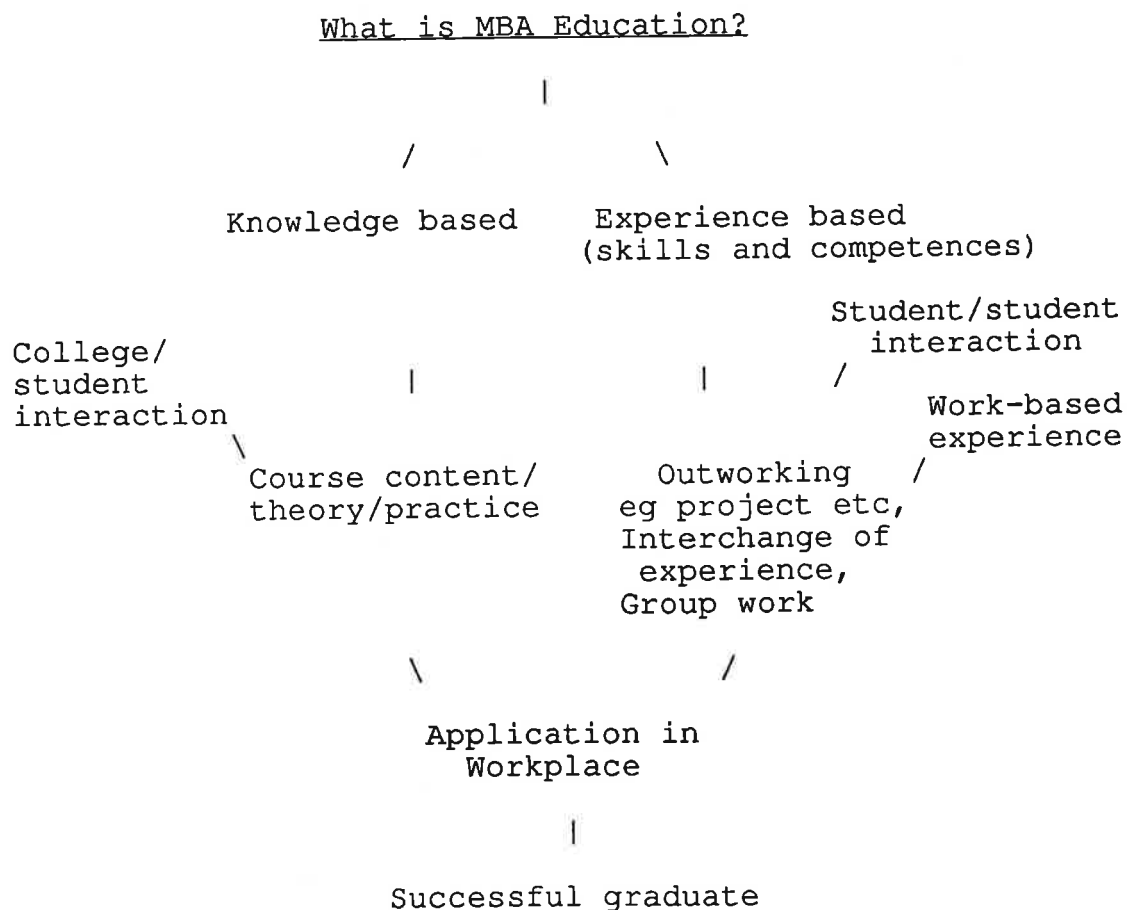


Fig. 2.1. A Descriptive Model of Current MBA Programmes.

The model identifies the two streams of learning, i.e. knowledge and experience and attempts to reflect the balance that is now seen as essential between the two. In many ways the left hand stream of knowledge based learning reflects that of the traditional MBA model in which the student studies an academically presented course based upon the theory of management with an academic appreciation of its application to practice. In this process the student will interact with the course content as presented by the tutor supported by more background reading and the undertaking of exercises often based on case work. There is comparatively little or no interaction with peers except possibly to discuss the academic content being taught.

The right hand stream is that of experience based learning and identifies that which comes from the individual's own experience through practical application of theory and knowledge, but more importantly, through the interchange of such experience with peers. This can take place through debate and discussion, project work or any form of group working in which the individual can begin to see problems and situations from the perspective of others whose normal environment is perceived to be unrelated and to have little relevance thus opening new awareness of practice and application that had previously been hidden by traditional thinking and practice. The outworking of this development of competences and the learning from this sharing of experiences then needs to be put to the test by application back in the workplace.

The justification for this form of model is supported by Argyris (1992,p.8-12). He describes two levels of learning which he describes as "single-loop" and "double-loop" learning. The concept is borrowed from electrical engineering control systems and the specific example he quotes is that of a thermostat. This device is programmed to switch on when the ambient temperature falls below a prescribed level, and switch off when the temperature rises above that same level. This he describes as "single-loop" learning because an error in temperature is detected and corrected without questioning or altering the underlying

values of the system. If the thermostat was to question the validity of the value of the prescribed temperature and possibly alter it, that would be "double-loop" learning.

Argyris (1992,p.84) argues that:

"most people define learning too narrowly as mere 'problem-soving', so they focus on identifying and correcting errors in the external environment. Solving problems is important. But if learning is to persist, managers and employees must also look inward. They need to reflect critically on their own behaviour, identify the ways they often inadvertently contribute to the organisation's problems, and then change how they act. In particular, they must learn how the very way they go about defining and solving problems can be a source of problems in its own right."

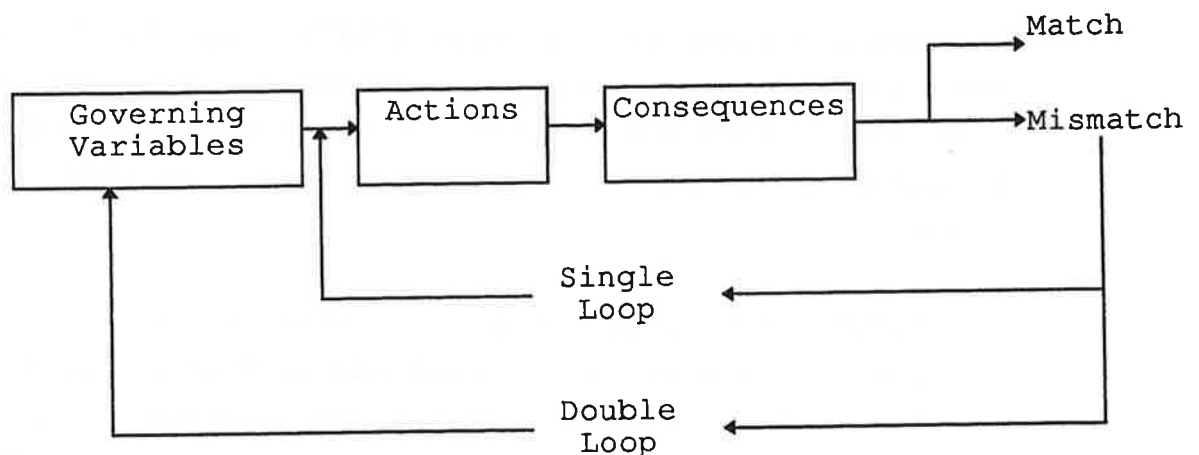


Fig. 2.2. Single and Double Loop Learning.
from Argyris (1992,p.8)

It could be argued that the knowledge based arm of the above model alone would approximate to Argyris' "single-loop" learning because whilst the individual is learning valuable theory and applying it to real problems, there is a tendency to ignore looking inward and seeing the problems that the individual himself creates. Additionally Argyris (1991) says "because many professionals are almost always successful at what they do, they rarely experience failure. And because

they have rarely failed, they have never learned how to learn from failure". Adding the experience based arm to the model provides the medium for the individual to look at the problems created by others' behaviour as well as allowing others to uncover problems in the individual's behaviour. The forum of the group and its activities can then provide the opportunity to experiment with ways of correcting such behaviour and risk and experience failure in a safe environment.

In this light the two streams can be seen to be totally dependent on each other, neither can thrive without the other nor produce the quality graduate that the present business world needs and demands.

This concept of balancing knowledge based learning with practical application and competence development generated, at least in part, by interaction between students is not new to the social sciences, even if it may be radical to management education. Harasim (1987) supports this concept when she refers to a report published in 1975 investigating graduate studies and research in the humanities and social sciences at Queens University, Ontario. From this report she quotes:

"graduate education has particular characteristics: contact between instructors and students should be frequent and intense; debate and dialogue should play a greater role (than in undergraduate courses). Moreover, students benefit greatly from the interaction with each other studying alone in the library and talking individually with a professor are important but cannot replace the sharpening of skills among groups of students."

2.5. Summary.

There is a changing climate in higher education that requires changes in teaching methods if educational effectiveness is to be maintained. This is summarised by Bok (1986) who says that "the most apparent need is to change the emphasis of

instruction away from transmitting fixed bodies of information towards preparing students to engage in continuing acquisition of knowledge and understanding".

This chapter began by considering the background to the MBA qualification and the esteem and high regard with which it has been held both by students and business generally. It was then shown that this image was starting to fade in the changing environment and that, if the MBA as a programme was to continue to thrive and maintain this reputation, then it would also need to change to balance the theoretical understanding of management theory with the practical application of this theory in the real day to day life of the workplace. Consideration was given to the implications of such change and what it may involve. Support is drawn from the debate for the need to ensure a high level of interaction among all parties involved in the learning process which has specific ramifications for the distance learning based programmes. This requirement is included in a descriptive model for this changing MBA which is finally derived and which creates the balanced approach from the perspective of the student of acquiring both knowledge and practical competence in the real business world.

CHAPTER 3. WHAT IS DISTANCE EDUCATION?

The move towards a greater emphasis on the use of distance learning methods for the provision of managerial training rather than the traditional residential programmes has been encouraged by developments in delivery and support methods for distance learning courses. According to Nipper (1989) we are now experiencing the third generation of distance learning. Carnall (1992b) confirms this view describing "third generation" in terms of multimedia, flexible, generic programmes integrating distance learning technology, action learning, skills development, multi-national curriculum and teaching. In this the emphasis is on teaching the student to learn so that he can control what he learns. The main feature of this third generation of distance learning is that through the application of technology the previously experienced lack of communication between students, between students and tutors and between students and administrators can be, to some extent, alleviated.

One of the developments in delivery and support methods that has encouraged the increase in the use of distance learning methods is the application of CMC. Applications of its use in further education have covered a wide range of educational environments. It has been successfully used in both campus-based education, for example the 'Virtual Classroom' experiment at the New Jersey Institute of Technology (Hiltz, 1990), and in distance education, for example the use of CoSy at the Open University (Mason, 1989). Whilst it could be argued that these two examples do not represent the extremes of range of educational environments, they are perhaps two of the best known examples of the use of CMC each towards opposite ends of the spectrum.

Despite the well documented case of the use of CMC in the Virtual Classroom application, CMC has, to date, been used mostly in the realm of distance education. It has evolved as one of a range of new media from the rapid advances of technology that has helped to move distance education from

its first generation of correspondence courses to what Nipper (1989) described as its second generation and on towards its third generation. In order to consider the place of CMC within this process of development, it is thus necessary firstly to consider what is meant by distance education.

Initially this chapter considers what is distance education and its characteristics and then relates it to the often confused term of open learning. The nature of learning in MBA programmes is then considered alongside the various forms of distance education to determine which form or forms are required for successful delivery of such programmes. Three frameworks are discussed for assessing the function and operation of specific distance education programmes. Finally, the theory of convergence is considered which propounds that the fundamental differences in nature between traditional, or mainstream, education and distance education are decreasing, possibly in time to the point where the two forms will become synonymous.

3.1. Distance Education - What is it?

At first sight distance education is often conceived to be a simple concept, namely studying remotely from the education establishment by what historically have usually been known as correspondence courses. However, further investigation quickly shows that the definition is far from so simple. Tait (1991) describes distance education in Britain today as "characterized at one and the same time by terminological chaos, to the despair of scholars". Garrison and Shale (1987) describe the definitions as "tantalising, much sought after, but ever elusive". They observe that the advent of new delivery methods that have evolved through recent technological developments have "made the boundaries between distance and traditional education less distinguishable. Great care should be taken not to exclude new and successful methods of delivery in attempts to provide precision in defining distance education as a distinct and unique phenomenon". McKenzie, Postgate and Scupham (in Garrison and Shale, 1987) support this view when saying that distance education should be viewed as "... an imprecise phrase to

which a range of meanings can be, and is, attached. It eludes definition ... its very imprecision enables it to accommodate many different ideas and aims ...". Keegan (1986,p.50) attempts to set the basis for a definition when he describes the task as "to take up the middle ground between the extremes of defining distance education so narrowly that it becomes an abstraction which does not correspond to existing reality, or defining distance education so broadly that it becomes meaningless".

Even the term 'distance education' is not universally adopted. Other names given to it include 'external studies', 'extra mural studies', 'off-campus education', and 'correspondence education'. These terms still do not encompass the whole range of thinking over the definition of distance education. Most people initially tend to think of 'distance' in terms of geographical separation.

Before progressing further it is necessary to identify the relationship between distance education, distance teaching and distance learning. Often these terms are carelessly interchanged without due thought to what is meant. As Keegan (1990,p.31) points out, "'distance teaching' indicates clearly the process of course development by which a distance institution prepares learning materials for students. In the same way wide currency has been given to the term 'distance learning' or 'learning at a distance' for the process as seen from the student's perspective". He then goes on to describe 'distance education' as the sum of 'distance teaching' and 'distance learning'.

3.2. Distance Education - Some Definitions.

3.2.1. Moore.

Moore (in Garrison 1989,p.3) originally set out to define distance education in 1973 when he wrote:

"distance teaching may be defined as the family of instructional methods in which the teaching behaviours are executed apart from the learning behaviours, including those that in a contiguous situation would be

performed in the learner's presence, so that communication between the teacher and the learner must be facilitated by print, electronic, mechanical or other devices".

He later (in Rumble, 1986.p.7) specifically challenged the definition of 'distance' as simply geographical separation when he refers to it as 'transactional distance' which he uses to describe the form of separation of the teacher and learner in the educational process as "a function of two variables called dialogue and structure". Dialogue describes the degree to which the teacher and learner are able to communicate with each other. This can be influenced by various factors, for example the content of the course materials; the availability of communication media such as telephone, facsimile or computer; the educational philosophy of the course provider and the individual personalities of the two parties concerned. Structure, which might better be thought of as flexibility of structure, refers to the course's responsiveness to the learner's needs in terms of such things as educational objectives, teaching styles and subject matter. Wilson (1989,p.24) concludes from this definition that all educational programmes lie on a continuum representing degrees of distance. At one extreme:

"the most 'distant' programmes will be those lacking both dialogue and structure, (that is, a completely self-directed programme of education). At the other end of the continuum, the least distant programme would be one where there is little predetermined structure, (for example, individual tailoring); and a high level of interaction, (for example, tutorial based teaching)".

Wilson goes on to point out that a student on a traditionally delivered university course with a prescriptive structure based on formal lectures with little dialogue can be at a greater transactional distance than a student on a distance learning delivered programme with less prescriptive teaching, or even content, and greater teacher content through such media as letter, telephone, tutorial or CMC.

3.2.2. Seaton.

In considering the American experience, Seaton (1993) describes many of the available courses generally acknowledged as distance education, as having formally structured, well defined sequences of learning with clearly defined areas of content. Thus in Moore's definition dialogue is variable, but structure is very rigid which means that courses would be placed at the least distant end of Moore's continuum. It is in consideration of this that Seaton introduces another variable, that of independent learning. He states that "the importance of developing student autonomy has been a significant concern since the emergence of epistemology in Western culture". He supports this statement by referring to recent research noted by Calvert in which he stresses "the importance of understanding what fosters independent achievement and the degree to which the ability to work independently, and more importantly to develop learner autonomy, can be fostered in distance education". Seaton comments that this variable of independent learning could be another way of considering the geographical separation that he suggests is the core of the common conception of distance education. However, he concludes "while distance education is often thought of as independent learning due to the physical separation of the learner from the institution, pedagogically it need not be", thus adding further credence to the theory that the term 'distance education' is not a simple concept.

3.2.3. Smith and Kelly.

Smith and Kelly (1987,p.2) consider distance education and campus-based education on a different basis. They define them as 'located at the extremes of a continuum which is paralleled by the continuum showing the degree of face-to-face teacher support received by students'. In this distance education students receive less face-to-face support than campus-based students. This definition clearly highlights the problems Garrison and Shale referred to when it classifies the virtual classroom experiment described by Hiltz in which students have very little face-to-face

support, but at the same time can receive most of their teacher contact via computer on campus located computers. This clearly defines the virtual classroom as at the distance learning end of the spectrum, the opposite to many people's perspective. Catchpole (1992) also acknowledges this dilemma when he says:

"who is more 'distant' from the instructor, the student at the back of a five-hundred-seat lecture theatre or the student taking a televised course at home who uses a well-designed course package, and interacts with the instructor and fellow students either on the air or via frequent audio and computer conferences".

3.2.4. Keegan.

As a result of his investigation of the subject, Keegan(1986,p.49) evolved his evaluation of distance learning in the form of a seven point definition. This he set out as follows:-

- the quasi-permanent separation of teacher and learner throughout the length of the learning process; this distinguishes it from conventional face-to-face education;
- the influence of an educational organisation both in the planning and preparation of learning materials and in the provision of student support services; this distinguishes it from private study and teach-yourself programmes;
- the use of technical media (print, audio, video or computer) to unite teacher and learner and carry the content of the course;
- the provision of two-way communication so that the student may benefit from or even initiate dialogue; this distinguishes it from other uses of technology in education;

- the quasi-permanent absence of the learning group throughout the length of the learning process so that people are usually taught as individuals and not in groups, with the possibility of occasional meetings for both didactic and socialisation purposes;
- the presence of more industrialised features than in conventional oral education;
- the 'privatisation of institutional learning'.

Following further debate as a result of publishing this definition, Keegan subsequently decided to delete the last two points from the definition (Keegan, 1990). This was not because he subsequently believed that they were wrong, but that they were not a necessary requirement for distance learning. For example, whilst still maintaining the support for industrialisation, he recognised that it was not present in some small providers. Equally he believed in the importance of privatisation, but again recognised that in practice it did not always exist.

3.2.5. Garrison and Shale.

Garrison and Shale (1987) consider that it is more realistic to define distance education by using a minimum set of criteria. They claim that this is a successful method when "a complex concept cannot be defined with precision". They justify this statement by saying that:

"such an approach also helps to ensure that we avoid characterisation based upon methods in favour of characterisations based upon fundamental principals. In addition, a minimum set of criteria reduces the possibility of distortion and inconsistency while leaving open the likelihood that other criteria may be added as our understandings or purposes change."

From this basis they go on to describe their definition of distance learning in which "the distinguishing feature ... is that it is a means of extending access to education to those who might otherwise be excluded from an educational experience." They then set out their three criteria that are, as they say, essential for characterising the distance education process as follows:

- distance education implies that the majority of educational communication between (among) teacher and student(s) occurs noncontiguously.
- distance education must involve two-way communication between (among) teacher and student(s) for the purpose of facilitating and supporting the educational process.
- distance education uses technology to mediate the necessary two-way communication.

Essentially Garrison and Shale are not at variance with Keegan. Keegan is taking less of an assumption by including certain things like the distinction between distance learning and face-to-face teaching, and also the distinction between taught programmes and self-study or teach yourself programmes. Garrison and Shale's justification for being more broad in their description is that by his definition Keegan is denying the potential advances in delivery methods that are emerging with the advent of new developments in technology and communication and, in particular in the context of this thesis, the potential of learning groups in distance learning.

3.2.6. Farhad Saba.

Farhad Saba, a professor of educational technology at San Diego State University (in Moore, 1990) has addressed the dilemma in definition by drawing a parallel with interactive telecommunications and systems dynamics. He suggests that when dialogue is maximised in integrated systems of telecommunications media, then transactional distance is

minimised. The effect of sight and sound communication as well as sharing and exchange of printed documents produces what Saba describes as 'virtual contiguity' which, he suggests, is at least as good as face-to-face communication. He describes this model as follows:

"As dialogue increases, structure decreases, and as structure decreases, dialogue increases to keep the system stable ... In a plausible scenario, the need for decreasing structure is communicated to the teacher. Consultation automatically increases dialogue; then adjustments in goals, instructional materials, and evaluation procedures occur and the learner achieves the desired level of autonomy."

Moore (1990) endorses this model whilst acknowledging that it is not the ultimate definition. What he does categorically say with good justification is that:

"we do not need any more repetition of naive descriptions of the variables that distinguish the field. Those who make such repetitions, especially by merely changing the labels attached to these variables do a disservice by the confusion they cause. The time for such labelling and description was the early 1970s. Now is the time for the infilling of the theoretical spaces".

3.2.7. Holmberg.

Given this warning of Moore's, possibly the best basic definition that has stood the test of time by not attempting to be too prescriptive in detail is that coined by Holmberg. Originally coined in 1977, it was reiterated (Holmberg, 1989.p3) as follows in 1989:

"Distance Education covers the various forms of study at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises but which, nevertheless, benefit from the planning, guidance and teaching of a supporting organisation".

3.3. Open Learning - What is it?

A further complication that has arisen in recent years has been caused by the popular use of the term 'open learning' or 'open education'. In some quarters this and distance education are conceived as being one and the same thing. Whilst there is clearly some degree of overlap, this is not the whole story.

As with distance education, there is no clear definition for open education or learning. Foks (1987) comments that "the precise meaning of the term 'open learning' is much debated in educational circles. While the debate may not have produced what purists would accept as a definition, it has helped to determine certain things which open learning is not". Again this indicates the difficulty of producing a commonly accepted definition.

The term 'Open Learning' evolved during the first two decades after the second world war as a loosely used term to describe some of the changing concepts of educational provision in a rapidly changing society. MacKenzie et al (1975,p.21) described it as "an imprecise phrase to which a range of meanings can be, and is, attached. It eludes definition". There has been no shortage of attempts at definition of the term, for example Coffey (1977), MSC (1984,p7), Lewis and

Spencer (1986,p.9-10), Fricker (1988,p339) and Rossetti (1988,p.308-9). All of these definitions have merit, but tend to emphasise certain aspects. However, the best attempt at a definition in my view is that of Lewis (1988,p.257) when he defines open learning as:

"essentially the means to enable individuals, of whatever age, to take responsibility for their own learning in respect of content (what is learnt), learning methods (how the content is learnt), the place of learning, the time of learning, feedback on progress, and who can help the learning to occur".

Whilst this may imply it, it does not specifically mention one key aspect of open learning, that is open access to entry without pre-qualifications. This definition reflects the requirements of third generation MBA programmes as set out by Carnall (1995).

Rumble (1989) approaches the looseness of the definition by suggesting that courses display a degree of openness or closedness with no course being totally open or totally closed. In order to assess the degree of openness, he describes fifteen criteria that need to be considered. He categorises these into the following groups:

- Access-related
- Relation to place and pace of study
- Relation to means
- Relation to the structure of the programme in respect of content and assessment
- Relation to support services

This approach indicates the problem with attempting to define 'open learning' as a discrete form of learning. This is not to deny the significance of the concept. What is required is to use the term as a description of the degree of openness. As Foks (1987) says, "open learning is not synonymous with distance education; nor is distance education a sub-set of open learning". He goes on to describe open learning as "a state of mind. It is an approach taken to the planning,

design, preparation and presentation of courses by educators, and an approach taken to the selection and use of learning strategies and associated resources by students". In other words open learning is an adjectival term that can be applied to any type of programme delivery. This view is supported by Richardson (1990) when he says "openness itself can in fact be a variable within a given course, moving from openness at the point of access, to closure by limitation of choice of various kinds, (content, mode, and place of study) once the course has been started".

It is thus reasonable within the context of this thesis, when considering programmes from the distance education perspective, to consider open learning as a variable within the distance education model. This satisfies Carnall's description of third generation MBA programmes which require a high degree of open learning as defined by Lewis within a distance education programme.

3.4. The Type of Distance Learning Delivery Required for MBA Programmes.

Given the wide range of outputs that occur from different forms of distance education delivery, it is important to understand where in this spectrum MBA programmes need to be placed.

Lauzon (1992) argues that conventional distance education emphasises 'instructing' rather than 'learning', that is the teaching of knowledge rather than the development of competences. This reflects the above arguments and supports the view that if distance learning is to be valuable as a medium for delivering MBA programmes where development of competences is a vital aspect, then such distance learning must, in Saba's terms, include dialogue in order to reduce the transactional distance. Lauzon goes on to describe learning on a scale from 'low-level' which is essentially the teaching of knowledge, to 'high-level' which "facilitates the integration of newly acquired knowledge into one's own implicit knowledge framework" (Lauzon, 1992) by such activities as analysis, synthesis and evaluation. He then

takes the argument further by saying that 'low-level' learning can be supported by Computer Base Instruction (CBI), but that 'high-level' learning needs to be supported by Computer Conferencing as this can facilitate dialogue with other learners and the tutor. As has already been demonstrated in chapter 2, MBA programmes require to be at the 'high-level' end of the spectrum. Thus there is the need for the provision of an active learning process including experimentation and effective feedback from the learners (Carnall, 1992) and providing the environment to allow what Argyris (1992) describes as 'double loop' learning.

This leads to the conclusion that MBA programmes need a higher degree of dialogue and, even when geographical distance is present, transactional distance needs to be low. As Catchpole (1992) describes it:

"the student/faculty relationship, with its traditional features of frequent contact and feedback, encouragement and goading, as well as role modelling and challenging of authority, must always remain central to a high quality educational experience".

Given this requirement, then the potential for group work can be placed within this context and the role of CMC determined to support student interaction and group work together with tutor involvement and more specifically to support learning at the 'high-level' end of Lauzon's spectrum.

3.5. Frameworks for Considering Distance Education Programmes.

We have so far considered the definition of distance education and the implications on this of open learning. Then considered the range of forms of distance learning and where within the range MBA programmes fall. It is now necessary to consider frameworks for assessing the function and operation of specific distance education programmes. Keegan (1986) has identified three major frameworks for this purpose based upon the work of various exponents in the field of distance education.

3.5.1. Independence and Autonomy.

This framework focuses on the student and emphasises the student's independence in determining how, when and, to some degree, what to study. Delling (in Keegan, 1986) considers the adult learner whom he sees as making up the majority of students in this form of learning. He suggests that adults do not:

"accept the conventional educator-pupil relationship. The function of the 'helping organisation' is to take over, upon the wish of the learners, everything that they cannot yet do for themselves, with the tendency that the learners eventually become autonomous. When this occurs the only function left for the helping organisation is to provide information, documentation and library facilities".

Wednmeyer (in Keegan, 1986) places a much greater emphasis on the role of the tutor who he sees as the continuous motivator of the student. This is considered to be a personal involvement that should not be eroded by mechanisation. Thus he argues that any form of mechanisation, including computer, which attempts merely to replicate a face-to-face class without giving responsibility and freedom to the learner cannot be defined as independent study.

Moore (in Garrison, 1986 p.3) describes independent study within an educational programme as when "the learning programme occurs separate in time and place from the teaching programme, and in which the learner has an influence equal to the teacher's in determining goals, resources and evaluation decisions".

Thus the basic aspect of this framework for describing a distance learning programme is the extent to which control of the learning process is given to the student. At one extreme would be a programme with no face-to-face contact and no student support, whilst at the other would be a programme

with some face-to-face support and a full range of student support facilities.

3.5.2. Industrialisation.

Otto Peters had an extensive background in distance education in Germany from the early 1960's. He was not happy with the conventional ways of looking at distance education and so over a period of time developed his own, sometimes controversial, approach which has become known as Industrialisation. In this approach Peters considers the efficient development of programmes to be a parallel to that of industrial production. He indicates that distance education, in the form of correspondence courses, evolved at about the same time as the industrial revolution in Europe, and suggests that the current traditional pattern of education compares to pre-revolution industry in which "the individual lecturer remains in close contact with the whole teaching process just as an artisan does with his craft" (Keegan, 1990). To support his argument Peters considers distance education against the industrial production of goods under the following headings:

- Rationalization. Each lecturer is able to teach significantly larger numbers of students at a constant high standard and with high quality materials than would be the case in face-to-face teaching.
- Division of labour. More staff are now involved with a single programme, but each contributing a specialist skill.
- Mechanisation. Whilst the conventional teacher uses tools such as pictures, objects and books, distance education mechanises the process, eg CD-Rom and telecommunications.
- Assembly line. Teaching staff remain at their posts whilst teaching is passed from one area of responsibility to another, eg an assignment is set by

one member of staff, is processed by an administrator and marked by a further member of staff.

- Mass production. Distance education works on economies of scale which is impossible with conventional teaching.
- Planning and preparation. Much greater resources are required for more extensive preparation of materials.
- Standardisation. A much higher degree of standardisation is essential if the high volume of student throughput is to be maintained.
- Functional change and objectification. This follows from the rationalisation of the functional role of the teacher into its specialised parts.
- Monopolisation. Because of the high entry cost into the provision of distance education, there is a tendency towards single national providers.

Peters' framework concentrates on the provider and virtually ignores the student as an individual, concentrating on a quality product for the mass market as is the case with large scale industrial manufacturing. Nevertheless this is a good model for the production of mass produced distance learning education from the producers perspective. Clearly this model would not necessarily relate to the small scale provider.

Peters' model could well be extended in the light of recent changes in technology and production to allow for more variation in product specification in the same way that a major automobile manufacturer, whose whole future depends on mass production, will offer a range of alternative specifications to a particular model whilst still maintaining the economies of scale of the single specification.

There is a potential weakness in this framework. The above discussion about the definition of distance education emphasises the importance of student interaction and

student/tutor interaction particularly in reducing transactional distance and in programmes at the 'high-level' end of Lauzon's spectrum. This framework does not readily acknowledge this need, but focuses on mass production and high levels of tutor/student ratios, and thus is more applicable to 'low-level' programmes. Nevertheless, taken with the other frameworks, it does have a value for MBA programmes in considering the aspects of mass production that are applicable, eg production of materials.

3.5.3. Interaction and Communication.

Whilst the two previous frameworks have concentrated on either the student or on the provider, this framework takes a middle of the road perspective and focuses on the communication between the two. One of the main protagonists of this framework is Borje Holmberg (Keegan, 1990). He emphasises the freedom of choice that the student has in electing to ignore aspects of the teaching package including two-way contact that he feels are of less value to the student, but also the importance to the student of the interaction with tutors and administrators of the providing organisation. He also considers students assignments as being an extension of this two-way communication, not simply a means of assessment. Holmberg also suggests that there is a simulated conversation generated between the student and the learning materials that is encouraged with well developed materials that encourage questioning and response from the student rather than straight text that the student has to simply understand and absorb. In the light of the above discussion of the nature of distance education and the MBA programmes, I would add here the dimension of interaction between students as also being of significance in these programmes.

3.6. Convergence Theory.

Peters' theory described traditional, or mainstream, education as being pre-industrial in nature whilst distance education is described as post-industrial. This implies that

traditional education will, at some time, become more like distance education in character as it also moves into the modern era. Smith and Kelly (1987) maintain that this process is underway. They talk of the "trends which are blurring the boundaries between distance education and mainstream, campus-based education".

They identify three levels of convergence in current practice:

1. Teaching-learning systems in mainstream education are developing more of the characteristics of distance education, while distance education is beginning to incorporate some of the features of mainstream education.
2. The clientele of each of the two types of education have traditionally been very different. This is now changing as distance education becomes an accepted and quality way of learning and not simply a poor mans second best. As a consequence distance learning is attracting many of the students that would previously have been attracted by the mainstream approach.
3. Both streams of education are moving towards becoming more open learning systems thus moving the shift of emphasis away from the provider to the student.

Smith and Kelly also identify the rapid development in the technology of communication as also having a significant influence in this area. They comment that:

"the hardware exists to enable long and regular communications between students and teachers by telephone, or by computer. The hardware also exists to enable students to access an enormous amount of learning material at home. Such resources can be print, audio, visual, and computer-aided".

Since Smith and Kelly wrote this the rate of development of technology in this area has accelerated adding support to this argument. The hardware and software both now exist to enable both aspects of Holmberg's framework as set out above,

to be applied to distance education in a much more extensive way.

This brings the discussion back to the beginning of this chapter where the well quoted example of the use of CMC within a campus-base programme in the Virtual Classroom shows the ability of the use of such technology to bring campus-based education closer towards distance education as well as moving distance education towards campus-based education, thus supporting Smith and Kelly's hypothesis of convergence.

3.7. Summary.

The form of delivery known as distance education was not introduced as such but has evolved from the early form of correspondence courses. In consequence the term 'distance education' has come to represent a range of definitions describing any course where the student does not regularly attend traditional face-to-face teaching sessions.

This chapter initially considered what distance education is by comparing the definitions of leading exponents of distance education. This indicates the degree of variation between different exponents is generally caused by attempts to phrase the definition in too prescriptive a way. Thus Holmberg's concise definition is seen as being the best basic definition. Being one of the earliest attempts at definition, this has the added credential that it has stood the test of time and is still as valid as when it was initially postulated in 1977.

Recently the confusion in terminology has been increased by the introduction of another term, that of 'Open Learning'. This was considered and, whilst it can have distinct meaning, within the context of this thesis is seen as a variable within the distance learning model.

By the nature of the learning objectives of MBA programme members, these programmes have a specific place within the broader spectrum of distance education. This has been considered in order to identify the specific requirements

that such programmes need from a distance education environment so that potential application of CMC in enhancing the delivery of such programmes can be considered.

The subject of this thesis is the distance learning versions of Henley's MBA programme. Thus in order to consider it fully this programme has to be evaluated. To that end three frameworks for such evaluation are described, that of Independence and Autonomy, Industrialisation, and Interaction and Communication. The Henley MBA programme will be evaluated against these frameworks in chapter 6.

The evolution in the delivery of management education has lead to a theory that fundamental differences between the traditional methods of delivery and the early forms of distance education are beginning to decrease. This convergence theory suggests that the two forms will ultimately merge to create a composite form encouraged by the developing role of technology. CMC is one such form of technology. If this is so, it will have profound implications for Henley and the way it develops its MBA programmes and the role that CMC may have.

CHAPTER 4. HOW DO PEOPLE LEARN? - LEARNING STYLES.

It is generally accepted that different people have different ways of learning. If CMC is to be used as a tool to assist in the process of distance learning, then it is important to understand how the process of learning functions in order that CMC itself and, more specifically, its applications can be appropriately designed and its effects understood and evaluated. This chapter looks at the theory behind learning styles. It begins by considering briefly the current debate about knowledge versus competence based learning in MBA education in order that learning styles may be considered within this context. Various theories about the learning process are considered leading to consideration of learning styles. The chapter concludes by considering further the nature of learning required in MBA programmes and postulates that CMC may have a part to play in delivering such programmes by distance learning.

4.1. Traditional Belief.

Traditionally there has been a tendency in management education, and maybe in education generally, to consider that the basis of learning was to learn fact and theories etc by rote. Even the Harvard method of case study based teaching is seen by some such as Mintzberg (1992) as teaching theory, but not its application in the real environment. This traditional approach emphasised the belief that knowledge based learning was the principle way to learn management. The end product of this style of education was likely to be managers "able to recite all the theories, but unable to manage any better in consequence" (Cameron, 1994,p.99).

4.2. The Move Towards Competence Development.

Over recent years, along with many branches of education, management education has been gradually moving away from

knowledge based learning alone to an emphasis on the development of managers' competences. Whilst competence can be defined in many ways, a simple definition is "the ability to perform activities within an occupation" (Fletcher, 1991,p.32). However, this does little to state how well the activities have to be performed and thus a more precise, albeit long winded, definition has emerged from the Training Agency (quoted in Fletcher, 1991,p32):

"Competence is a wide concept which embodies the ability to transfer skills and knowledge to new situations within the occupational area. It encompasses organisation and planning of work, innovation and coping with non-routine activities. It includes those qualities of personal effectiveness that are required in the workplace to deal with co-workers, managers and customers".

This definition implies that knowledge is still of crucial importance, but balances this with the need to be able to put the knowledge into context and apply it in practice. Thus competence is measured by performance in the work environment and the objective of the development of competence is to improve performance in the workplace.

It is this balance between knowledge and competence development that many providers of management education, including Henley Management College, are now attempting to achieve (Carnall, 1995). To this end rote learning still has a part to play, but it needs to be totally integrated into a process of experiential learning. In other words, management learning needs to develop in the learner the ability to apply theory to the practical reality of the work situation. As Argyris (1995) has said, "in education it is important that students connect what they learn to what they actually do".

4.3. The Learning Process.

Much research has been undertaken over recent years into how people learn and it is widely understood that people adopt a number of different ways of learning. Noel Entwistle undertook work at Lancaster over a number of years starting in 1977 to investigate ways in which higher education

students learn. At about the same time Ference Marton was making similar investigations in Sweden.

4.3.1. Ference Marton's theory.

Marton investigated the ways in which groups of students studied specific articles knowing that they would subsequently be required to answer questions on their contents. From this he identified four different types of response (Marton and Saljo, 1976):

1. Conclusion-oriented, detailed.
2. The student summarizes the author's main argument, shows how evidence and personal experience is used to support the argument, and explains the thoughts and reflections used to reach personal understanding of that argument.
3. Conclusion-oriented, mentioning.
4. Again there is an adequate summary of the main argument, but the use of evidence or personal experience to support that argument is not made clear.
5. Description, detailed.
6. The student gives an adequate list of the main points presented in the article, but fails to show how these are developed into an argument.
7. Description, mentioning.
8. A few isolated points are made, some relevant, others irrelevant. At the bottom end of this category an impression of confusion and misunderstanding is given by the student's comments.

From this analysis Marton was able to identify two types of learning which he called "deep approach" and "surface approach". Students with the deep approach set out with the intention of understanding the meaning of the article whereas

those with the surface approach set out to identify and memorise the key points in the article. Subsequently these two categories were subdivided into "active" and "passive" depending on the degree of activity, attention and involvement shown by the student. Thus the four categories of learning became:

1. Deep active.
2. Reading slowly to understand the full underlying meaning of the article and to relate this to personal experience and other knowledge.
3. Deep passive.
4. Reading slowly to understand the full underlying meaning but not attempting to relate this to any significant degree to personal experience or other knowledge.
5. Surface active.
6. Reading quickly attempting to identify the key issues and facts that may be needed to be repeated later. Identifying and memorising detail, but not identifying and absorbing the underlying meaning.
7. Surface passive.
8. Reading quickly and attempting to identify the key facts but with little interest and hence lack of attention to either the underlying meaning or detail.

When this approach was extended to students' normal method of studying and the categories were cross-tabulated with exam success rates, it was found that there was a significantly higher success rate for the students with a deep approach. It was also shown that students adopting a deep approach typically spent longer studying. This followed from their attitude as their desire to grasp the deeper meaning gave them a greater interest and thus the extra time required was not a hardship to them. In the case of those with a surface

approach where rote learning was more prominent, studying became tedious and unrewarding and thus time spent was less efficiently used.

Given the current desire to develop competence along with knowledge in managers, then the aim for management trainers must be to develop a Deep Active type of learning in order that the learner not only understands the theory but is able to relate it to his personal experience in order to apply the theory in reality in the workplace. It is through such interaction with other learners that the learner becomes aware of alternative ways of learning (McConnell, 1994,p.92). McConnell goes on to suggest that when learners are given responsibility for their own learning (as is one of the objectives of third generation MBA programmes) within a shared learning community, then there is a greater tendency towards the deep active approach. This enrichment of the learning process is one of the advantages of the introduction of learning groups.

4.3.2. Noel Entwistle's Findings.

Entwistle's work at Lancaster set out to test the Swedish results and not only was he able to support their findings, but also to elaborate on the deep approach to learning. He subdivided this into one group which concentrated on the facts and previous experience whilst the second concentrated on building up personal meaning. This latter is very similar to Marton's deep active style. The former is a variation on Marton's surface active style in that it concentrates on facts but still attempts to develop the underlying meaning from this perspective.

4.3.3. Gordon Pask's Findings.

At about the same time Gordon Pask in London was undertaking similar research. He came to generally similar conclusions identifying two categories of learning methods which have similarities with Marton's "deep" and "surface" approaches. These he called "holist" and "serialist" (Pask, 1976). The

difference between these two categories is described by their different approach to learning when presented with a choice between a series of abstract topics and a parallel series of topics described in terms of real experiences.

The Holist:

works through both sets of data simultaneously attempting to discover the analogies between the two sets of data. Pask describes this style as "globetrotting" and sees the danger as being a temptation to generalise too quickly from insufficient data to form hasty judgements.

The Serialist:

works through each of them separately, bringing them together only when forced to in order to achieve an overall understanding of the main topic. Pask describes this style as "improvidence" and sees the danger here as a failure to see how the various elements interrelate and thus not to understand the overall subject.

4.4. Learning Styles.

This work, and that of others in a similar vein, set the ground work for more significant work that was to follow. It did nevertheless identify, as is now generally recognised, that people have different preferences in the ways in which they learn and that these are a reflection of their personality and character. As a consequence of this different people respond to different methods of delivery of teaching in different ways. Thus it is essential to appreciate the preferred ways of learning of the students whom you hope to teach.

4.4.1. David Kolb's Learning Styles.

Much subsequent work relating to these learning styles is attributed to David Kolb (1984). He developed a model to classify and identify learning styles in individuals and then

identified how those of particular learning styles could best be taught.

Kolb conceived the learning process as cyclic and consisting of four activities: (1) Concrete Experience is followed by (2) Reflective Observation on what has been experienced which leads to (3) the formation of Abstract Concepts and Generalisations resulting from the reflection, which leads to (4) hypotheses to be tested in future action, which in turn lead to new experiences.

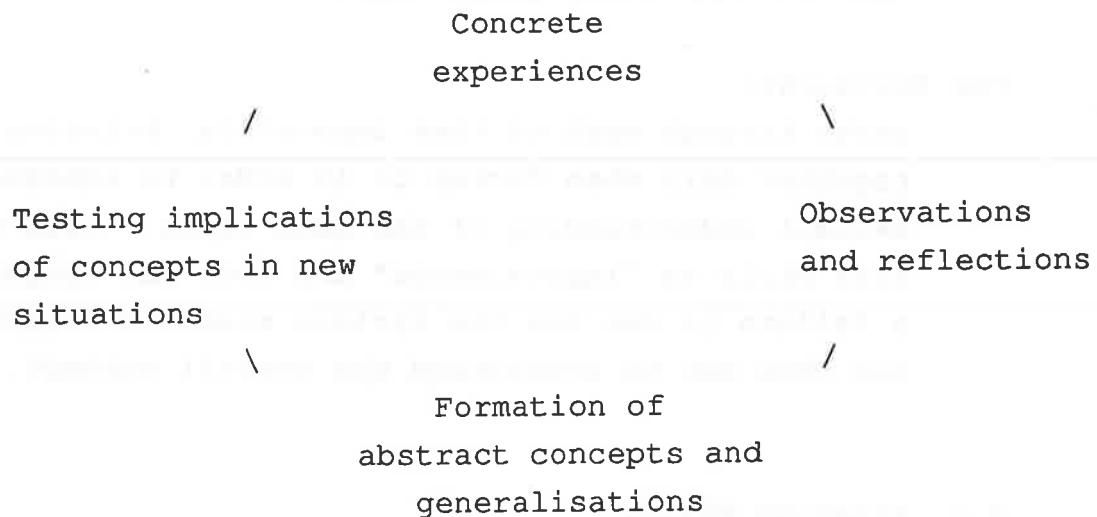


Fig. 4.1. Kolb's Learning Cycle.

Kolb then went on to say that whilst all individuals will go round this cycle, each individual will tend to emphasise a particular aspect of the cycle at the expense of other aspects. To identify this he created a model which consists of two major dimensions:

- concrete experience to abstract conceptualisation
- active experimentation to reflective observation.

These two dimensions are used as perpendicular axis creating four learning styles:

- accommodator, high on concrete experience and active experimentation.

- converger, high on abstract conceptualisation and active experimentation.
- assimilator, high on abstract conceptualisation and reflective observation.
- diverger, high on concrete experience and reflective observation.

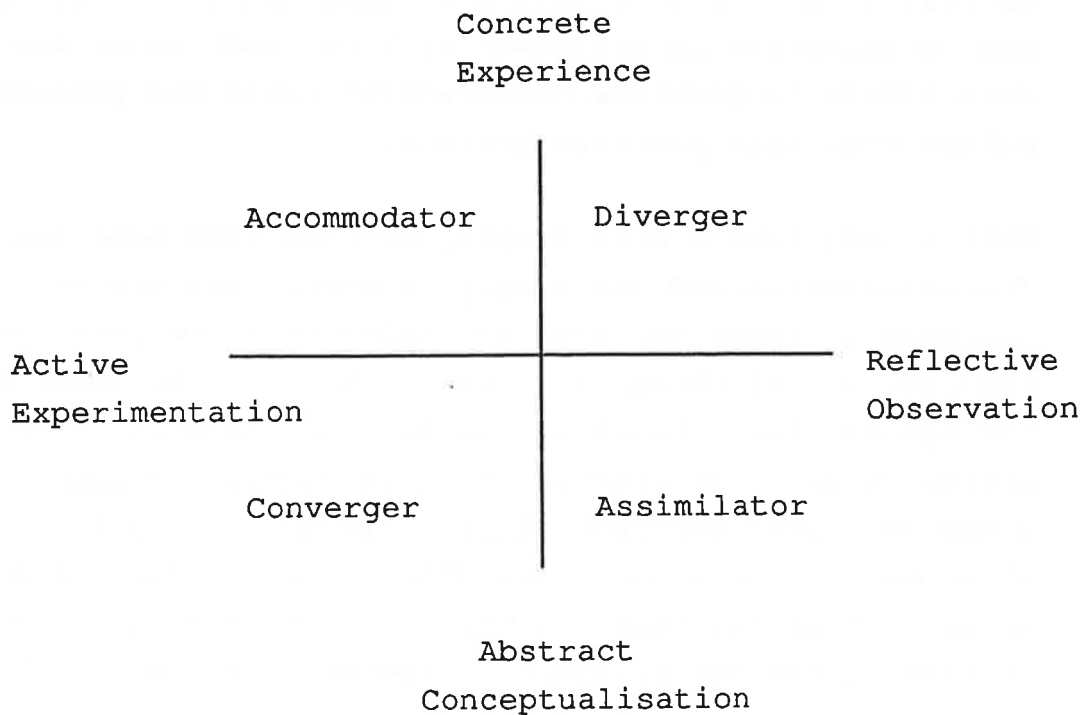


Fig. 4.2. Kolb's Two Dimensions and Four Learning Styles.

The Accommodator will want to achieve results. He will do this by looking for opportunities and taking risks in order to get things done. He will tend to use an intuitive trial and error method to approach problems relying on others to provide the analytic input. Where the facts do not support the theory, he is likely to favour the theory and try to find a way to make the facts fit.

The Converger's strength is in practical problem solving and decision making. He will handle observations and knowledge logically and concisely in order to produce a clear solution to a problem or a definite course of action which he will then implement.

The Assimilator's strength is in inductive reasoning and is thus good at handling a range of apparently unrelated observations and creating theoretical concepts and models. He is more likely to be focussed on concepts and ideas rather than people which could lead to the impression that he is self-opinionated and unsympathetic to others.

The Diverger tends to excel in "brainstorming" environments. He will tend to have a well developed sense of imagination and be receptive to different meanings and values and thus be more likely to generate constructive ideas and proposals rather than take positive actions.

Whilst individuals will display certain prominent learning characteristics and are likely to prefer one way of approaching learning, Kolb maintains that the ideal student requires all of these abilities if he is to be able to move through all four stages of the learning process in the most effective way. In practice this is rarely the case as each stage requires different skills. Some people will be stronger in some stages than others. Kolb, for instance, suggests from his research that managers are, generally, good at testing the implications of concepts in new situations ie in Active Experimentation but are, again generally, weak at observing and reflecting on their experiences ie in Reflective Observation. Thus the educationalist, who is designing a programme aimed at managers, needs to be aware of these strengths and weaknesses of his students in order to design the delivery of the programme to best utilise their strengths and minimise the effects of their weaknesses.

4.4.2. Peter Honey and Peter Mumford.

Kolb has developed his research further, but it is based on general learning of different categories of people at different levels of maturity and educational level. Honey and Mumford (1986) have taken this work up and developed it specifically for business management. Their initial concern with Kolb's work concerned the content and results of the Learning Style Inventory (LSI) that he used to identify individuals learning styles as this did not describe

management activities, nor were they happy with his form of words with which he called and described his styles and with which managers did not find it easy to identify. Nevertheless, they do acknowledge the value of Kolb's work and have built upon his basic concepts and structures redefining the learning styles and questionnaire using recognisable statements of managerial behaviour.

As with Kolb's model, Honey and Mumford describe the learning process as a four stage cyclic process. This starts with an active experiment which is followed by a review procedure. From this review, conclusions are drawn and theory developed which in turn leads to the development of plans for the next round of practical experiment.

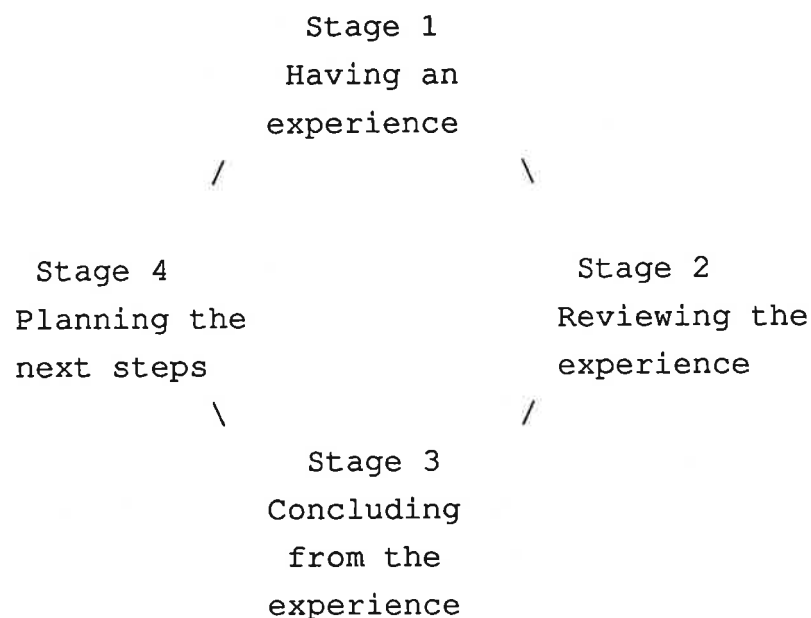


Fig. 4.3. Honey and Mumford's Learning Cycle.

From this learning cycle Honey and Mumford relate each stage to a Learning Style as follows:

1. Activist, which corresponds to Stage 1.

They are keen to try out new ideas and experiences and are concerned with the present rather than the past or future. They will tend to act first and then consider the consequences. Being keen on activity, they will readily move on to the next activity rather than spend

time with lengthy implementation and longer term consolidation.

2. Reflector, which corresponds to Stage 2.

They like to stand back and consider the outcome of experiences and consider them from various perspectives taking time to come to a reasoned conclusion. They are generally cautious in outlook and prefer to take a low profile position in meetings and discussions observing and taking in all points of view before making contributions. They will tend to be mediators.

3. Theorist, which corresponds to Stage 3.

They will take the output from the review of previous experience and develop it into a theoretical framework in a logical and structured way. They are perfectionists who will not be happy to leave any loose ends but will be analytical and concerned with rational objectivity rather than anything subjective or ambiguous.

4. Pragmatist, which corresponds to Stage 4.

They are keen to adopt new theory and develop ways to try it out and see if it works in practice. They will typically return from a management course with new ideas that they will immediately plan ways to implement. They will face problems as a challenge and address them in a direct and practical way.

As with Kolb, Honey and Mumford show from their research that people do not normally have all round strength in each learning style, but are strong in some and weak in others. Thus they will respond to different learning activities in different ways. For example Activists will relish role play exercises and gain much from them whilst Reflectors will tend to recoil from being thrown into such an exercise without warning and ample time for preparation, indeed they will tend to treat it as an ordeal with the prime objective of getting through the experience without mishap rather than looking for what they can learn from it. No Learning Style is inherently better than any other. Each has its own strengths as well as its weaknesses, although it is important to be careful about

identifying them as the context in which they are viewed could turn a particular strength into a weakness or vice versa.

4.5. Learning Styles and Programme Design.

The acceptance of this understanding of the interpretation of Learning Styles creates a starting point for the design and delivery of training activities if it is known ahead what the likely makeup of the group is in terms of the Learning Styles of the individual members, or at least in presenting the programme as a mix of activities that will provide value for each Learning Style without imposing too much that would be seen as a negative experience by any one Learning Style. This may be achieved by designing activities that progress around the four stages of the learning cycle. In this way programmes are delivered in such ways that opportunity is given for all four styles to be fully utilised. This should give added value to the role of groupwork within such programmes where all individuals in a well functioning group comprising a selection of all Learning Styles can in turn use their strengths to assist others weaknesses.

In practice this form of action learning within a group will invariably lead to such a cyclic process. McConnell (1994,p.95) describes the cycle's elements in a different form of words, but which have essentially the same form of meaning as Honey and Mumford's, as follows:

"A problem or issue is posed and is diagnosed; this leads to a series of action steps being imagined which need to be taken in order to investigate the problem or issue; the action steps are carried out in whatever form has been imagined; the outcomes of this action are evaluated, and this in turn leads to a re-examination of the problem or issue in the light of the experience and knowledge gained, and a new cycle is engaged."

Each individual in the group will have a part to play which will concentrate on the aspect of the cycle in which their strengths lie, and collectively they will produce a

comprehensive output, but more significantly, they will enhance each others' learning.

4.6. Conclusions and Summary.

Confucius is recorded as saying, "I hear and I forget, I see and I remember, I do and I understand". This amply summarises the generally held view that whilst the formal lecture may well have a place in the learning process, it is not the only, and often not the best, way to facilitate learning. This chapter has investigated the ways in which management students in particular undertake the learning process in order that the analysis of CMC applications that follow in this thesis may be made in the light of the knowledge of these varying processes.

The chapter began by considering the move in management education away from the traditional knowledge based emphasis often learnt by rote, towards the development of individual's management competences. Various theories relating to how individuals learn were then investigated. Marton identified two types of learning, "deep" and "surface" which he then subdivided into "active" and "passive". This work was developed further by Entwistle. Pask also came to similar conclusions identifying two types of learning generally similar to Marton which he called "holist" and "serialist".

This work formed the basis of further work by others, notably Kolb, who conceived a cyclic learning process of four activities from which he was able to identify four learning styles relating to the individual's personal preference between the four activities. Kolb's work related to learning in general, but was later developed specifically for the area of business management by Honey and Mumford. Both Kolb and Honey and Mumford have developed simple self-assessment questionnaires to allow the easy identification of an individuals preferred learning style.

Having identified Honey and Mumford's learning cycle with its four stages and its four associated learning styles, any proposed use or combination of uses of CMC can be designed to

meet the needs of all four styles and thus best meet the needs of most groups of students. In the case of a known variation in the combination of learning styles represented in the group then special allowance can be made in the design of the activities.

For an MBA programme to be a success it has already been shown that its course members need not only to acquire knowledge, but also competence. Thus if this link between knowledge and competence is to be achieved then learning needs to be of Marton's deep active form. What needs to be added to this in the context of third generation MBA programmes is the requirement not only to build up personal meaning by applying knowledge to one's own personal experience (Argyris' double loop learning), but by also seeing it applied in the context of others' experience. If this is to be achieved then there is a requirement for interaction in the learning process between course members. This suggests the need for group working within the learning process. The dilemma is that distance education in its historic form has mitigated against such a learning environment. The proposition of this thesis is that CMC can be utilized in such ways as to facilitate such a learning environment. Before considering the specific application of CMC, the next chapter will investigate the role of groups and the nature of group working in such an environment which may be one major feature of distance learning MBA programmes that CMC may help to facilitate.

CHAPTER 5. THE PURPOSE OF GROUPS - HOW DO THEY FUNCTION?

It has been said that "people learn best when they have the opportunity to work with other people through processes of cooperation and collaboration" (McConnell, 1994). Thus before considering the application of Computer Mediated Communications in encouraging peer group interaction, it will be helpful to consider the nature of groups and how they function. This will allow the use of CMC to be considered based on an understanding of the complex nature of the interactions of group members themselves and between the group members and the task. This chapter initially addresses the question as to what is a group, before considering various theories of group development. Consideration is then given to the role of groups and what makes them effective. Finally the role that groups can play in assisting learning, particularly through the medium of CMC, is considered.

5.1. What is a Group?

The definition of what constitutes a group is not as easy as might at first seem the case. This difficulty arises from the consideration of the following question: "when does a collection of individuals constitute a group, and when is it simply a collection of individuals?"

Jennings and Wattam (1994,p.94) define a group as:

"A collection of two or more people who, through interaction, share common perceptions, goals and forms of social control."

This can be seen as too simplistic a definition. A dozen individuals in a pub by random chance cannot be considered as a group even though they do have an element of interaction (talking), have a common objective (drink and socialisation) and are aware of each other. Despite this degree of

interaction, in Johnson and Johnson's terms (1991,p.13), this is an aggregate of individuals and not a group. Handy (1985,p.155) concurs with this viewpoint but goes on to describe groups like the pub clientele, which he would describe as a random collection of people who, when faced with a collective emergency such as being trapped in the lounge bar by fire, rapidly become a group as they identify a common cause requiring interaction for the common good, ie effecting an escape. He goes on to say that common objectives, defined membership criteria and predetermined hierarchies are, of themselves, not enough to create a group without self-perception by the members. Thus, he maintains, the size of the group is significant as when it becomes too large members start to loose this self-perception and start to break down into sub-groups. He also suggests that a group will create its own independent identity by use of a name or other symbol, and if it does not do this then that is an indication that the membership of the group is not important to its members.

White (quoted in Douglas, 1983,p.32) approaches the issue from another perspective by saying that whilst a collection of individuals may be called a group, that does not imply that they function as a group. Thus he is indicating the confusion caused by the colloquial use of the word compared with its definitive meaning. Douglas agrees with this interpretation up to a point, but does not agree that there is a qualitative difference between the collective and the group. Rather he sees the collective as the early stage of development of the group. This may well be true in some cases, but cannot be said to be true of all collectives, for example the random collection of a dozen people in the pub do not become a group unless the fire breaks out or some other extraordinary event takes place, which is unlikely.

Schein (1980,p.145) perhaps summarises this best with his definition:

"any number of people who

- (1) interact with one another,
- (2) are psychologically aware of one another,
- and (3) perceive themselves to be a group".

5.2. Theories of Group Development.

The issue of collectives developing into groups leads onto the theories of how groups develop. This is again complicated by the fact that there is such a wide range of types of group structure. As Neukom (1978,p.28) described it, "group structure may be restricted and inflexible, permitting no process elements to emerge, so that the group focuses solely on content (what is being said as determined by the group's task), or it can be so flexible that the process (how the group behaves) becomes the content, as in a human relations training group" where the objective is to help individuals interact with each other in a more productive and less defensive manner. This, and the differing elements of group processes focussed upon by theorists, in turn leads to the profusion of theories of group development.

5.3. Categories of Theories.

According to Johnson and Johnson there have been over 100 theories describing the kinds of developmental change that is seen in most groups. The various theories can mostly be identified with one of two approaches defined by Shambaugh (1978, quoted in Johnson and Johnson 1991, p.19):

1. Sequential Stage theories.
2. Recurring-phase theories.

5.3.1. Sequential Stage Theories.

This group of theories is characterised by a series of development stages that a group evolves through over a period of time. Questionably the best know sequential stage theory was propounded by Tuckman (1965, and 1977). Tuckman reviewed about fifty studies on group development undertaken in a wide variety of settings and discovered a surprising degree of agreement on the process of group development. From this he

propounded a five-stage process. He maintains that it is necessary for a potential group to pass through each stage in the correct sequence. In order for a collection of individuals to evolve into a group they need to pass through at least some of these stages, although some groups may never achieve all five stages. In this case they will not achieve maturity as a group nor become fully effective and efficient. The five stages are as follows:

1. Forming. This is the stage when potential group members initially meet and start to find out about each other, their attitudes and background, their skills and abilities and their strengths and weaknesses. At this stage members begin vying for position. Group procedures and rules begin to be developed.

2. Storming. At this stage conflict is likely to be at its highest. Members are bargaining with each other initially to agree what the individuals collectively want to achieve from the group, and also for the particular roles that each individual will play. This is likely to lead to hostility among members as differences emerge and are sorted out and as relationships are established. This process will help to set procedures for managing conflict within the group and determining group direction.

3. Norming. In this period the working relationships and procedures begin to settle down into an agreed form. Personal relationships are developed and friendships established and members become committed to each other and to the group.

4. Performing. Only at this stage does the group become efficient at getting on with achieving its objective. It is now fully mature and is able to be concerned with both individual performance and collective coordination.

5. Adjourning. This stage is not strictly part of the development process, but represents the winding up of a group that has achieved its objective and no longer has a function to fulfil.

These process characteristics and their outcomes are summarised in Figure 5.1.

Stage of Development	Process	Outcome
1. Forming	There is anxiety, dependence on the leader, testing to find out the nature of the situation and what behaviour is acceptable.	Members find out what the task is, what the rules are and what methods are appropriate.
2. Storming	Conflict between sub-groups, rebellion against the leader, opinions are polarised, resistance to control by group.	Emotional resistance to demands of task.
3. Norming	Development of group cohesion, norms emerge, resistance is overcome and conflicts are patched up; mutual support and sense of group identity.	Open exchange of views and feelings, cooperation develops.
4. Performing	Interpersonal problems are resolved, interpersonal structure becomes the means of getting things done, roles are flexible and functional.	Solutions to problems emerge, there are constructive attempts to complete tasks and energy is now available for effective work.

(from Jennings and Wattam, 1994, based on Tuckman, 1965)

Fig. 5.1. Stages in Group Formation.

5.3.2. Recurring-phase Theories.

These theories are based upon the concept that the basic issues that dominate the group interaction recur repeatedly. Bales (1965, quoted in Johnson & Johnson, 1991,p.19) stated that:

"an equilibrium had to exist between task-orientated work and emotional expressions to build better relationships among group members. The group tends to oscillate

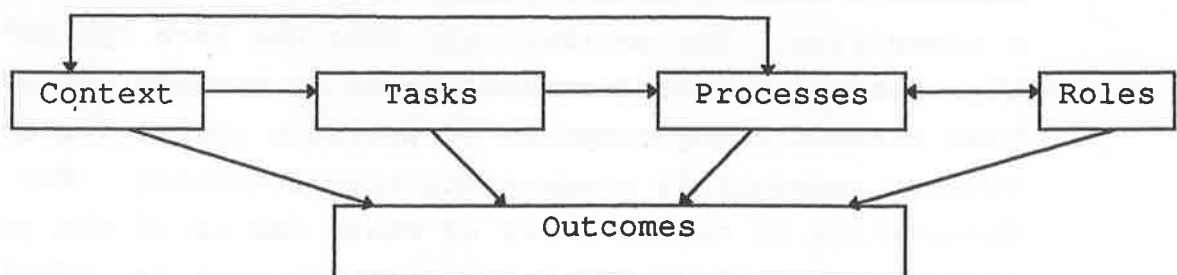
between these two concerns, sometimes striving for more solidarity and sometimes striving for a more work-orientated focus".

This supported the earlier work of Bion (1961,p.143-145) who described two parts to a group, the work group and the basic assumption group. The work group is that aspect of group activity that focuses on the real task in hand whilst the basic assumption, or emotional states, group explain that aspect of group activity that does not directly contribute to the real task in hand. Within the basic assumption group he found a focus on three basic themes, that of dependency on the leader, pairing among members for emotional support, and fight-flight reactions (ie when group members act as if their purpose is to avoid some threat by fighting or running away from it). The group thus progresses in a series of forward steps when the work group is dominant, and stationary or even backward steps when the basic assumption group is dominant and problems relating to group dynamics are being addressed and solutions found. In successful groups the work group is the dominant party, whereas when the basic assumption group gains an equal or even dominant position then the group stagnates or even begins to regress.

Gersick (1988), working from an anthropological approach developed a Recurring-Phase model based upon the theory of Punctuated Equilibrium (Eldredge and Gould, 1972). This is an evolutionary process characterised by short, sharp change preceded and followed by long periods of stability. Gersick's model consists essentially of two phases linked by a transition. She deliberately uses the term "phase" rather than "stage" as she describes these as bounded periods of time without being composed of specific activities and without necessarily progressing hierarchically. Her description of the activity of Phase One is of the group getting together, determining what the task is, identifying outside requirements, organising themselves within the group and beginning to work at achieving a result. This progresses slowly until there is a realisation of an approaching deadline for completion of the task. At this point the Transition which ushers in Phase Two occurs when concentrated activity takes place to meet the deadline. Throughout each

of the three phases socialisation and differing amounts of interaction will occur and varying numbers of actions take place. A major feature of this model is teams do not spend much time on developing their procedures, but jump quickly into the task with the consequence that they need to continually go back to looking at the process. This is in complete contrast to Tuckman who defines discrete evolutionary stages. Gersick is combining within her model the effect of what Bion described as work group and basic assumption group with the latter tending to predominate in Phase One, but being subdued by external influences such as time constraints which cause the onset of the transition. In Phase Two the work group takes dominance in order to meet the requirements of the external constraints and to produce acceptable outcomes.

Gersick's general concept is taken up by Herriot and Pemberton (1995,p.84-95) who describe Tuckman's model as the "seven ages of myth". They describe the traditional model as being based upon processes leading to tasks, whereas they propose that this should be reversed such that tasks, which are themselves influence by their context, lead to processes. These processes in turn have an influence on the context but also govern the roles that individual members of the team will adopt. In all this success is measured, not by the satisfaction of the team members themselves, but by the outcome of their activities i.e. their output. In diagrammatic form their model is shown in figure 5.2.



(from Herriot and Pemberton, 1995)
Fig. 5.2. The Teamworking Model

5.3.3. Which Theory?

These two theories are both valid in describing developmental change. The practice in most groups is probably some overlay of one theory on the other. It is to be expected that in any group the issues relating to personalities and processes are always going to be evolving and never fully and permanently resolved. This view is supported by Johnson and Johnson (1991,p.19) who adopt and extend Tuckman's theory as will be seen later in this chapter. They state that:

"both sequential-stage and recurring-phase perspectives are useful for understanding group development. They are not contradictory. A group may move through various stages while dealing with basic themes that surface as they become relevant to the group's work. Because the issues underlying the themes are never completely resolved, they can recur later".

They continue by saying that as both internal and external constraints vary with time, so will the group's structure, but that the group is finally evaluated on how well it achieves its goals. This corresponds to Herriot and Pemberton's concept of evaluation of outcomes by interested parties.

5.4. Why Have Groups?

Groups can serve different purposes depending on their environment. Much work has been undertaken on the purpose and advantages of groups in a business or work environment. Johnson and Johnson (1991,p5) stress the importance of groups in business, in fact they identify the implementation of more effective work teams as being the means of halting the decline in the USA's manufacturing industries. Handy (1985,p155) has identified ten major purposes for organisational use of groups or teams:

1. For the distribution of work.
2. For the management and control of work.
3. For problem-solving and decision-taking.
4. For information processing.
5. For information and idea collection.
6. For testing and ratifying decisions.
7. For co-ordination and liaison.
8. For increased commitment and involvement.
9. For negotiation or conflict resolution.
10. For inquest or inquiry into the past.

Schein (1980,p150-152) identifies the value of such groups from the individuals perspective in five categories:

1. Affiliation needs, i.e. the satisfaction of the need for friendship and personal support.
2. The providing of a sense of identity and maintenance of self-esteem.
3. The establishment and testing of social reality, i.e. the sharing of problems and uncertainties helps clarify reality.
4. The reduction of insecurity, anxiety and sense of powerlessness.
5. As a problem solving, task accomplishing mechanism for group members.

Whilst these lists of purposes and values relate specifically to the organisational environment, many of the items relate also to the learning environment where the basic objective of the group is to provide each individual with additional support and input into the individual's learning process. For example, a group is seen as superior to an individual when it is required to generate ideas, or collate information and knowledge. It is in this area that the practice of collective brainstorming can often be very effective in collaborative learning. Douglas (1983,p.79) states that groups both make more efficient use of resources and learn faster than individuals. Herriot and Pemberton (1995,p.45) talk of professionals as a major source of new ideas, but unfortunately "many of them operate from within one single

frame of reference alone - their professional one". By its very nature, in a group made up of such people, each member will have different experiences and skills which can prove of value not only to the group in achieving a specific task, but also allow members to learn from each other. Work can be distributed among group members in order to reduce the time required for information collection and processing and release more time for the absorption of knowledge and the development of skills and competences. Working with others and focussing on the process of working cooperatively helps the individual become aware of his or her own learning. McConnell describes it as helping "raise the public awareness of our learning so that those aspects of our learning which are blind, hidden and unconscious become clear, open and conscious" (McConnell, 1994,p.17). The participation in group working is positively related to morale and job satisfaction and in a learning environment, particularly where distance learning is the main medium, this is a real benefit where it can relate to easing what has been termed "the loneliness of the long-distance learner" and enhance the determination to succeed.

5.5. What makes a Group Effective?

In order to consider group effectiveness it is first necessary to consider what effectiveness means and how it relates to efficiency. Drucker (1971) defines this very simply. He describes 'effective' as "giving attention to the right things", and 'efficiency' as "being concerned to do things right". He goes on to say that it is often possible to be very efficient, but to be doing the wrong things, which is not being effective. On the contrary, this is being ineffective. Carnall (1990,p.70), to avoid this situation, takes the definition further when he describes 'efficiency' as "achieving existing objectives with acceptable use of resources". He also further qualifies 'effectiveness' as the ability to be "both efficient and able to modify goals as circumstances change". However, Carnall is describing the terms in the context of organisational performance for which the environment is more broad than for groups. For groups the definition of 'effectiveness' could well be modified to

"the efficient achievement of acceptable outcomes" (Herriot and Pemberton, 1995,p.86).

Effectiveness is influenced by various different characteristics of groups, some major ones of which will now be considered.

5.5.1. Cohesion.

The characteristics of the collection of individuals that go to make up a group will have a significant bearing on the potential of the group to achieve its objectives. Whilst the nature of the purpose of the group will affect its desired make-up, if it is to function as a team it must display a degree of cohesion. In order to do this the group must exhibit a wide range of factors. These have been summarised by Jennings and Wattam (1994) as follows:

1. Group Size. Beyond a particular size groups will be likely to fracture and cohesion will be lost as subgroups form.
2. Group Status. In general high status will lead to greater cohesiveness.
3. Success. Generally speaking high status groups show greater cohesiveness. However there is an exception to this when the low status group unites in the face of adversity.
4. Group Goals. One reason a person joins a group is that the group can help to achieve individual goals. Agreement over goals and the extent to which group goals complement individual goals will have an impact on group cohesiveness.
5. Stable Relationships. Groups with a continuously changing membership are going to be less cohesive than a group which has a constant, continuing membership.
6. Environment and Proximity. Where work is noisy and people are physically apart, the group will be less cohesive than in circumstances where working conditions are pleasant and people are close together.

7. Homogeneity. The more similar members of a group are, the more probable that they will perceive common interests and be prepared to work to common goals.
8. Intergroup competition and conflict. The existence of outgroups who are rivals and compete for scarce resources will lead to the ingroup demonstrating greater cohesion.
9. Intragroup competition. This will, by definition, have negative effects on group cohesion.
10. Communications. The cohesive group is marked by a complex and highly developed network of communication.

In the context of computer mediated groups some of these factors will need to be adapted. For example, Environment and Proximity will need to relate to the ease of the communication processes themselves and the environment in which the users computer is located, rather than the group members physical proximity.

A degree of caution needs to be taken in certain aspects of these factors, for example homogeneity. Janis (1991, quoted in Johnson and Johnson, 1991,p.235) coined the word "Groupthink". He describes it as "a collective striving for unanimity that overrides group members' motivation to realistically appraise alternative courses of action and thereby leads to:

(1) a deterioration of mental efficiency, reality testing, and moral judgement

(2) the ignoring of external information inconsistent with the favoured alternative course of action."

Johnson and Johnson (1991,p.235) describe the syndrome as "promoted when the group is highly cohesive, when it is insulated from outside criticism, when the leader is directive and dynamic, and when the group does not search for and critically evaluate alternatives." Whilst homogeneity in a group is desirable, if not essential, care needs to be

taken to avoid such dangers as groupthink. In the case of learning groups such danger may not only emanate from within the group itself, but may emanate from a tutor leading or supervising the group.

5.5.2. Group Make-up.

In order for any group to be cohesive and to satisfy the above criteria it will need to be composed of a balanced membership in terms of skills and competences as well as individual personalities that will blend together and not cause undue friction. Handy (1985,p165) identifies a complication:

"people who are similar in their attitudes, values and beliefs tend to form stable enduring groups. Homogeneity tends in general to promote satisfaction. Heterogeneous groups tend to exhibit more conflict, but most studies do show them to be more productive than the homogeneous groups. However, as one might expect, these groups were heterogeneous only in certain specific characteristics."

To consider this complication, it is necessary to look in greater detail at the function and inter-relationship of the various roles in a group.

5.5.2.1. Bales' Role Types.

Bales (1958, quoted in Neukom,H. 1978,p.66) from his study of the workings of groups identified five distinct role types that made up problem-solving groups. In order to describe these roles he measured them against the three criteria of activity, task-ability and likeability. The five roles are as follows:

1. The 'good' leader - high on all three criteria.
2. The 'task' specialist - high on activity and task ability, but not so high on likeability.
3. The 'social' specialist - high on likeability, but low on activity and task-ability.

4. The 'overactive' deviant - high on activity, but low on task-ability and likeability. This person tends to dominate rather than show leadership.
5. The 'underactive' deviant - low on all three criteria.

The identity of first four of these roles are agreed by Moment and Zaleznik (1963) who use the following descriptions:

1. The star.
2. The technical specialist.
3. The social specialist.
4. The underchosen.

They do not have an equivalent of Bales' fifth group.

5.5.2.2. Belbin's Team Roles.

Meredith Belbin (1993) has taken this work significantly further. He has undertaken extensive work over a number of years into determining the best mix of characteristics of team members. He has approached the problem from a different perspective in that rather than looking at individuals in groups and categorising them according to their characteristics, he has studied the group as a whole and identified the characteristics that are required by individuals making up the group in order for the group to be successful. He has identified nine roles that are needed for a fully effective group. It is not necessary to have each role represented by a separate group member, rather that the group as a whole displays a balance of the eight roles, ie individuals may well display the characteristics of several of the roles and function in more than one of them in the group context. The roles identified by Belbin are as follows:

1. Plant. Creative, imaginative, unorthodox. Solves difficult problems, but may ignore detail and be too preoccupied to communicate effectively.

2. Resource Investigator. Extrovert, enthusiastic, communicative. Explores opportunities and develops contacts, but can be over optimistic and lose interest once initial enthusiasm has passed.

3. Co-ordinator. Mature, confident and a good chairperson. Clarifies goals, promotes decision making and delegates well, but may be seen as manipulative, and is liable to delegate personal work.

4. Shaper. Challenging and dynamic, thrives on pressure. Has the drive and courage to overcome obstacles, but may provoke others and hurt people's feelings.

5. Monitor Evaluator. Sober, strategic and discerning. Sees all options and judges accurately, but may lack drive and ability to inspire others and be overtly critical.

6. Teamworker. Co-operative, mild, perceptive and diplomatic. Listens, builds, averts friction and calms the waters, but is likely to be indecisive in crunch situations and can be easily influenced.

7. Implementer. Disciplined, reliable, conservative and efficient. Turns ideas into practical actions, but can be somewhat inflexible and slow to respond to new possibilities.

8. Completer. Painstaking, conscientious and anxious. Searches out errors and omissions and delivers on time, but is inclined to worry unduly, may be reluctant to delegate and be a nit-picker.

9. Specialist. Single-minded, self-starting and dedicated. Provides knowledge and skills in rare supply, but contributes on only a narrow front, dwells on technicalities and overlooks the 'big picture'.

Belbin discovered that too many individuals with the characteristics of a particular role is as debilitating to a group as none. A major finding, and one that surprised Belbin, was that a team comprised of the brightest

individuals does not create the best teams. He termed this the "Apollo syndrome".

A danger of a similar nature can occur with a highly cohesive group. One form of this phenomenon is known as "risky shift". This occurs in groups where collectively the members lead each other on into making collective decisions that have a much higher risk factor than any individual member would countenance. This is similar to the form of phenomenon identified by Janis (1982) as previously mentioned which he calls "Groupthink". This occurs when the group is attempting to create a comfortable environment and maintaining morale, often in the face of adversity. The net outcome of this can be poor decisions that are arrived at without realistic assessment of the risks involved and when threatened with failure the group is likely to become dogmatic in its decision making.

Herriot and Pemberton, whilst accepting the widespread use of Belbin's roles, have questioned their validity in an organisational setting where "real tasks are to be tackled by real teams" (1995,p.90). However, within the context of this thesis groups are set in the same environment as Belbin's original work which justifies the acceptance of Belbin's role theory within the context of this thesis.

5.5.3. The Group Size.

We have already suggested that the size of a group has a bearing on its success. Whilst in most cases the absolute size is not easily identifiable, there are some generally agreed principals governing optimum size. Douglas (1983,p.131) suggests that within a team some twelve to fifteen members is about as many as can easily be accommodated without loss of efficiency.

"The multiplying of roles, the increased potential of relationships and ideas, and the increased possibility of individuals opting out, bring about diminishing returns unless an increase in rigidity and regulatory procedures accompanies the increase in size. This may also bring

about a decrease in achievement levels because performance will necessarily be restricted in a creative sense by the growth of restrictive discipline." (Douglas, 1983)

Handy (1985) supports this in general by saying that the larger the group, then the greater the diversity of talents, skills and knowledge, but also identifies what he calls 'thresholds of participation' by which he means that people find it difficult to participate in groups larger than a certain size. Thus the larger the group is, then the greater the likelihood that the reserved expert will be overlooked and his value lost to the group. He concludes that the optimum size is a trade-off between these two factors of between five and seven members although in some cases it may be necessary to have more in order to achieve the required breadth of skills and knowledge etc.

5.5.4. Group Interaction Patterns.

Within any group each member has information. Some of this is common knowledge and known by everyone, some is known by a few, and some is known only by the individual. It is the responsibility of each member to determine what knowledge needs to be communicated and to whom. It is also each member's responsibility to listen to knowledge that is directed to him or her. Johnson and Johnson (1991,p.121) describe this as a potential problem area and describe it as 'noise'. This they define as "anything that gets in the way of effective communication". Factors that can induce noise include:

- how a member is perceived
- how much information a member thinks each of the others has
- how trustworthy a member has been in the past
- how the messages are formulated and sent
- what receiving skills are used
- how cooperative the group is

- whether the member believes his or her information will benefit the group

The pattern and complexity of interaction that takes place between members can have a significant impact on the efficiency of the group's performance. Leavitt (1988,p208-216) identified several patterns of communication spanning the complexity spectrum. Whilst Leavitt identified several patterns, the three basic patterns from which others are variants are as follows:

1. In the wheel or star pattern one individual acts as the hub and all communication passes through that individual. This pattern produces the quickest answer to simple questions, but whilst the hub person is generally very satisfied the outlying figures feel isolated.
2. In the circle pattern each member communicates with two others forming a circle of communication. This provides a high level of general satisfaction and can be effective for dealing with complex problems.
3. In the completely connected network all members communicate with all others. This can be an effective way to handle complex problems, but not simple ones. It does also have the benefit that all members generally can feel a high level of satisfaction.

Leavitt acknowledged the problem of defining efficiency. In the sense of achieving a good interaction between members where each member's contributions are likely to carry equal weight, then those networks that allow each member about the same number of communication channels are preferable to those like the wheel where one member has many channels and the rest only one each. If the objective is to undertake a specific task as quickly as possible, then a hierarchical network like the wheel may be more efficient as there is a clearly defined organisational structure and the group is thus likely to start being productive sooner and also work faster.

5.5.5. Motivation.

As in any activity, it is essential for all members of a group to be highly motivated if they are going to give of their best and gain the most from the exercise. Clearly if each member is to be motivated he or she will need to be convinced of the value of the group and of the task it is setting out to achieve, to be on good friendly terms with the other group members, and to wish to be associated with the group (Handy, 1985,p.181).

Gibb (1961) identified what he called 'defensive behaviour' as a cause of weakening of friendly terms leading to poor motivation. This occurs when an individual feels threatened or anticipates a threat and can often be created by competition. Gibb describes the effect as the member "thinks about how they look to others, how they may win over or dominate their peers how they may keep from losing, and how they may protect themselves from anticipated attack. As a person becomes more and more defensive, furthermore, he or she becomes less and less able to see correctly the motives, values and content involved in messages of other group members". Clearly this is a process that can easily and without warning lead down a vicious spiral to group disintegration and needs to be avoided at all costs. Gibb identifies behaviours that effect defensiveness.

Behaviour to encourage defensiveness:

- evaluating or judging the other member
- attempts to control other group members
- messages with ambiguous motives
- lack of concern for other's welfare
- communicating a sense of superiority
- a sense of 'know-it-all'

Behaviour to diffuse defensiveness:

- descriptive messages that build up positive knowledge

- a helping message that is problem orientated
- spontaneity and obviously free of deception
- a communication of empathy with receiver
- communicating mutual trust and respect
- a communicated willingness to change own standpoint

Johnson and Johnson (1991,p.124) conclude from this that:

"groups whose members are good listeners, more accepting of the ideas of others, and less possessive of their own, generally demonstrate greater sending and receiving skills A cooperative orientation leads to increased cohesiveness and greater group productivity."

5.6. The Use of Groups Primarily for Learning.

Everyone experiences learning from informal group participation at most, if not all, stages of their lives. Even from the time young children start to communicate with their parents they are learning from group interaction. This interaction continues when they start mixing with friends outside the family and continues throughout the whole spectrum of formal education and then throughout the rest of life. These groups are generally informal and can be of short or long duration. The experiences can be pleasant or unpleasant, can build up the individual or be demotivating. However, the over-riding feature of them is that of learning either experientially or cognitively from the interaction with others.

Despite this common experience of communication with others, most people have very poorly developed skills that are necessary to achieve the best benefit from such interactions (Handy, 1985). Blumberg and Golembiewski (in Douglas, 1983,p.232) describe this characteristic by saying that:

"people devalue their emotions and consider them to be inappropriate in problem solving or work situations, for fear of alienating a friend or losing a promotion, perhaps even a job. In the process, however, they become

emotionally malnourished and lose a bit of their humanity."

This description reflects Argyris' theory (Argyris, 1992) as previously discussed. His definition of single-loop learning describes the application of knowledge to a specific problem and responding to the direct result, which reflects what Handy and Blumberg and Golembiewski infer as normal. However, double-loop learning (which he argues to be the superior form) describes response to the basic governing variables such as the attitudes of others perhaps not directly involved, or even the consequences of one's own weaknesses, which is what Handy sees as being poorly developed in most people. If group learning is to achieve its full potential then this inherent weakness in group members needs to be addressed.

5.6.1. The Effective Learning Group.

If this naturally occurring phenomenon of group learning is to be adapted and developed within the formal educational context to enhance the learning process, and if the group is to be effective, the group coordinator (ie the director or leader, be it a tutor or a group member) needs to be very aware of the limitations of the group members' competences in group communications and to positively encourage their development. As Douglas (1983,p.232) describes it, "ignoring the emotions does not at all diminish their influence upon rational thinking, but creates an extra difficulty in that their effect becomes covert and therefore largely unappreciated by the person concerned". The group also needs to have a clear purpose to promote the learning of its members in a specific way. This may include learning specific subject matter, knowledge, skills, competences or procedures. It also needs to be well structured, facilitated and controlled. Johnson and Johnson (1991,p.394) have identified a set of criteria that need to be met for a learning group to be effective. These are as follows:

1. A clear, cooperative structure
2. Accurate, two-way communication among members

3. Widespread distribution, participation and leadership among group members
4. The use of consensus to arrive at answers, solutions and decisions
5. Power and influence based on expertise and access to information and social skills, not on authority
6. The frequent occurrence of controversy
7. The open confrontation and negotiation of conflicts of interest among members and between the group members and the coordinator
8. High cohesiveness
9. High trust among members
10. A climate of acceptance and support among members and between the group members and the coordinator
11. Group norms promoting individual responsibility and accountability, helping and sharing, and achievement
12. General high group and interpersonal skills among members

Whilst occurrence of controversy and cohesiveness may initially appear contradictory, this does not have to be the case. Cohesiveness implies a willingness to work together and a desire to achieve the set objectives of the group. An important contribution to this comes from members debating and arguing for their own viewpoints, whilst being ready to listen to the views of others, which may well be at odds with those of other members. Part of the richness of group working is that from such debate can emerge a synthesis of viewpoints leading to better quality output than would be achievable by any individual member of the group.

Michael Waggoner (1992) has also identified a similar set of criteria specifically for evaluating computer conferencing. These are condensed into five items but generally support Johnson and Johnson. They are as follows:

1. Positive interdependence. Group members need to feel that they need each other to accomplish the task in hand, but each must understand the part they play and their relationship to the whole project.

2. Face-to-face communication. There is an important need for regular verbal interactions between group members and between the group and the tutor in the form of discussions.
3. Individual accountability. Each individual is responsible to the group for his/her own individual and unique contribution without which the group outcome would be greatly weakened.
4. Interpersonal and small group skills. There is a need for high interpersonal and small group skills including communication, leadership, trust, decision making and conflict resolution. These skills are often weak or nonexistent at the outset and thus instructional leaders need to teach them.
5. Group processing. Group processing provides the members with the time and procedures for analysing the functioning of their group and their own use of interpersonal and group skills. This helps alter the focus of the individual to the larger group and to make judgements about overall effectiveness and his/her relative contributions to the achievement of the group goal.

Most, if not all, these criteria are similar to those required for groups of any purpose. What is different is the emphasis on 'togetherness' between the group members with a deeper inter-personal concern and the development of deeper relationships than would often be the case. Responsibility and group leadership become more shared functions. It would appear obvious from this that for a learning group to succeed it will need careful planning and sensitive support from the coordinator if this list of requirements are to be met. The alternative is that at best the group will be of value only to certain of its members or at worst disintegrate and cease to function at all.

5.6.2. Learning Group Development.

Johnson and Johnson (1991,p.395) indicate that learning groups develop in very similar ways to other types of groups. Tuckman's work (1975) set out five stages of group

development which Johnson and Johnson have taken and evolved and expanded into seven stages specifically applicable to learning groups. In essence they have subdivided Tuckman's forming stage into three to reflect the importance with such groups of ensuring the formation and purpose of the group is well established. Johnson and Johnson describe their seven stages as follows:

1. Defining and structuring procedures and becoming orientated. This is when the group members learn what is expected of them, how the group will function and how they, as individuals, will fit into the group.
2. Conforming to procedures and getting acquainted. The group is learning how to implement the procedures and are beginning to discover each others strengths and weaknesses.
3. Recognising mutuality and building trust. Members begin to recognise that if the group is to succeed and they are to achieve their personal objectives, then they are all dependent upon each other and need to trust and support each other.
4. Rebelling and differentiating. This stage equates directly to Tuckman's storming stage in that having successfully passed through the forming stages and achieved a limited sense of security within the group the effects of members' weaknesses begin to surface and cause frustration and division. This in turn has the potential to lead to group breakdown but, if the group can work through the experience, it will develop deeper and stronger relationships strengthening security and enabling more effective working.
5. Committing to and taking ownership for the goals, procedures, and other members. Group members become committed to each other, to each other's well-being and learning. A genuine group identity begins to form which leads to the members taking

over the ownership of the group from the coordinator. It becomes 'our' group.

6. Functioning maturely and productively. The group is now at its most effective stage with all members fully sharing in the groups activities and contributing to each others wellbeing as well as the ongoing learning process of each individual within the group. There is a pride in the group, its success and in membership of it.
7. Terminating. When a group has fully achieved the previous six stages, fulfilled its purpose and the time has come to disband, the emotional bonds that have been developed between members can cause a degree of pain at the break-up of the group.

It needs to be born in mind, as has been shown above, that this is a simplified model of reality and that not all these phases will be neatly completed before the next starts, but that there will be some element of recurrence of phases. Johnson and Johnson's work suggests that whilst learning groups have different objectives and goals to most problem solving groups they nevertheless function in similar ways.

5.6.3. An Example of Distance Learning Groupwork Conducted via CMC.

Lauzon (1992) describes an example of the use of CMC to facilitate groupwork in distance learning at the University of Guelph which took place in 1990. A particular course had been running for several years in two forms, one face-to-face and the other by distance learning. Results showed a consistently lower success rate from the distance learning groups. It was postulated that whilst all the students covered all the same course materials, the distance students "lack of interpersonal interaction resulted in poorer performance; higher-level learning was not occurring because of a lack of inter-personal interaction" (Lauzon, 1992). It was thought that the introduction of computer conferencing

would lead to learning at a deeper level (Marton and Seljo, 1976).

CMC was used firstly to generate classroom discussion initially on topics relating to the course material, but then leading to specific questions being put to individuals for formal responses online which would form part of their assessment. Others would be expected to respond to these formal responses and these responses would themselves also be assessed. In a similar Lancaster case (McConnell, 1994) case members were involved with the tutor in each other's assessments. A second use was to set group projects to groups of four to eight students; thirdly students were asked to reflect in an interactive conference on how the course content related to their own experience; and fourthly a separate conference, or "coffee shop", provided for social interaction.

Whilst there was insufficient evidence to prove statistically that CMC caused the students' grades to rise, the general consent was that it did so. Certainly the student reaction was extremely favourable.

5.6.4. The Tutor Role in CMC Based Learning Groups.

It has been suggested (McConnell, 1994,p.71) that groups using CMC to facilitate their activities often expect the groupware to somehow cause the group to function effectively, but experience shows that special attention has to be paid to the development of social processes and relationships in the same way as would be the case in face-to-face meetings. What follows from this and discussion above, particularly within the context of CMC, is that the initial drawing together of the individuals to create the group is vital. Failure at this point would seem much more likely than in a face-to-face group. To this end the tutor has an especially important role in the setting up of the group and in ensuring its development through its early stages. Once the group is well established then the tutor's role changes more to that of mentor and friend. What is further indicated is that if the tutor does not achieve this role, at least in the

establishing of the group, then the group is extremely likely to fail at an early stage or, at least, not be very successful (see McConnell, 1994,p109-112). This concept is supported by the experience of the Losehill case in this research (Appendix 1.) where, despite a generally successful exercise, the student response was for the need of significant tutor input especially to ensure that the exercise gained momentum.

Another aspect of face-to-face groups is the need for accurate communication among members. In computer mediated groups this also becomes a critical feature. Members will not usually be used to the concept of asynchronous discussion and, unless they are helped over this hurdle, accurate and regular communication will not ensue which in turn may more likely lead to failure to progress beyond the early stages of group development. Helping to overcome this barrier or, as McConnell (1994,p.111) describes it, "making the unfamiliar familiar" is another responsibility of the group coordinator.

5.6.5. The Value of CMC in Learning Groups.

Joseph McGrath has produced a framework for studying group interaction. This has been adopted by Birchall and Lyons (1995) to help evaluate the use of various types of technology in assisting group work. It is based on the assumption that "groups are continuously and simultaneously engaging in three major functions, ie production (meeting the task requirements), member support (mutual assistance) and group well-being (aimed at the maintenance of social entity)". These criteria have been shown to be met in the scenario considered in this thesis.

In the model four tasks are identified which are then subdivided:

1. To generate - ideas or plans.
2. To choose - a correct answer or preferred solution.
3. To negotiate - conflicting views or interests.
4. To execute - in competition with an opponent or against external performance standards.

These eight tasks are shown in figure 5.3.

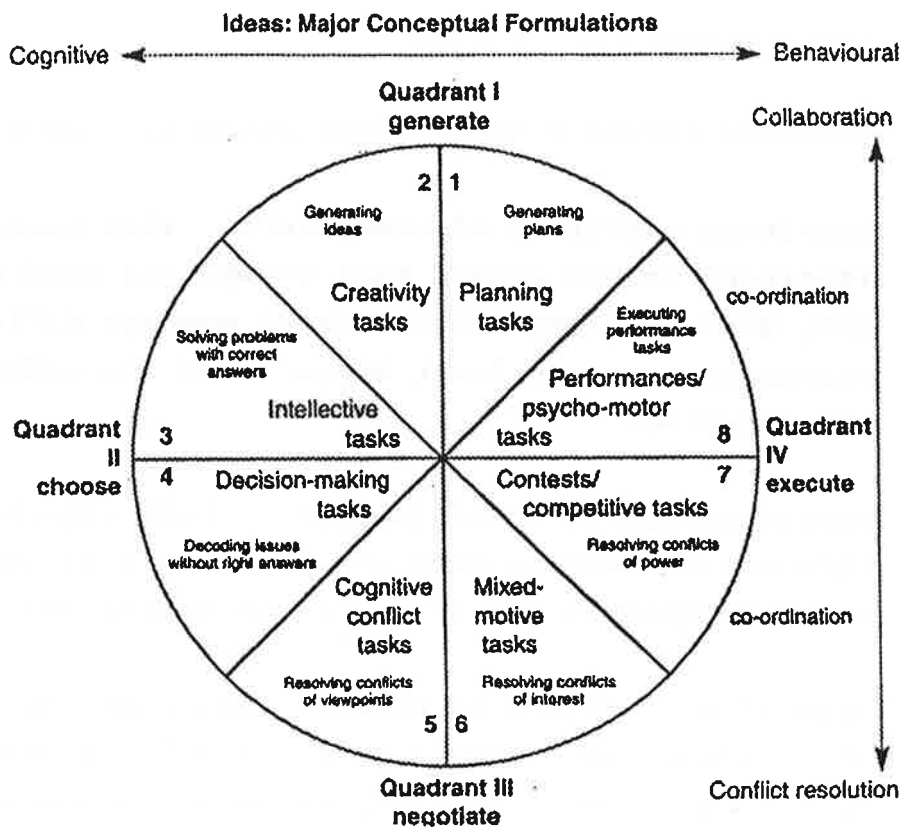


Fig. 5.3. A Model of Group Processes

(After McGrath from Birchall and Lyons, 1995 p.148).

In any group activity these eight segments will have varying degrees of significance. Within the example of distance learning based MBA student groups, such as in this study, the importance of each segment may be summarised as follows:

1. Generating plans. This is important as it is here that the process whereby any particular task is to be undertaken will be identified. In many cases significant assistance will be required from the tutor.
2. Generating ideas. This is important as it is in any collaborative exercise where a prime objective is the mutual benefit of all participants, and where all participants need to participate in sharing ideas.

3. Solving problems with correct answers. Within MBA programmes most group working will require debate and discussion leading to solutions that do not have a right or wrong answer, thus this segment is of less significance than 4 below.
4. Decoding issues without right answers. Important.
5. Resolving conflicts of viewpoints. This task is important to the extent that viewpoints need debating and, when conflict occurs, group members differing standpoints are at least appreciated and understood, if not accepted.
6. Resolving conflicts of interest. Less significant in this environment as such situations are unlikely to occur frequently due to the group objectives.
7. Resolving conflicts of power. This could be significant, but experience to date has shown that rather than power conflict, there is an opposite tendency, that of lack of leadership direction from student participants with a need for greater guidance from a tutor in this respect.
8. Executing performance tasks. In the sense that tasks in this study require debate and discussion as the major output from which individuals add their own understanding and knowledge, rather than detailed and specific output, this task is of less importance.

McGrath sees effective performance in each of these tasks as depending not only on the transmission of information among group members, but also on such features as values, interests, personal commitments etc. which he describes as media richness. CMC, through not being able easily to convey auditory and visual aspects of inter-personal communication, has a limited degree of media richness.

Birchall and Lyons take each of McGrath's eight task types and identify the importance of media richness to each. These

are shown, together with their degree of importance as discussed above, in table 5.1.

Main Activity of Task	Importance of Media Richness	Importance of Task to Group Learning.
1. Generating plans	Relatively low	Very high
2. Generating ideas	Relatively low	Very high
3. Solving problems with correct answers	Moderate	Relatively low
4. Describing issues without correct answers	Moderately high	Very high
5. Resolving conflicts of viewpoints	Moderately high	Moderate
6. Resolving conflicts of interest	Very high	Relatively low
7. Resolving conflicts	Very high	Relatively low
8. Executing performance	Moderate	Moderate

Table 5.1. Importance of Task and Media Richness.

From table 5.1. it can be seen that those tasks that require a very high level of media richness, are generally the tasks that are of lesser importance to group learning and visa versa. Given that CMC is not seen as the only medium for communication and can be supplemented by telephone, facsimile and maybe even occasional face-to-face meetings, this supports the view that CMC has the potential to be a valuable tool in supporting group learning within a distance learning environment.

5.7. Summary.

This chapter started by considering what actually constitutes a group as opposed to a collection of individuals. A major criterion in this definition is that the group members need to interact with each other. There are many theories

relating to the development of groups but these can be categorised into two approaches, sequential stage theories in which groups move through a sequence of stages to reach full development, and recurring-phase theories in which the basic issues that dominate the group interaction recur repeatedly. In reality most groups will display elements of both types.

Groups have a particular value in the business or work environment, but it is also shown that there is a significant value in a learning environment. A group is only of any value if it is effective. Factors that lead to effective functioning of groups were identified as was the danger of "groupthink" where a group can be lead in the wrong direction by one member. The combination and number of individuals can have a significant effect on the effectiveness of the group as can the nature of interaction and the need for all members to be motivated.

The chapter concludes with a consideration of how this theory relates to the learning groups and particularly those conducted via the medium of CMC. The value of CMC to such groups is evaluated. The major conclusion is that if such groups are to be effective then the initial stages of drawing the individuals together into a functioning group is vital. The role of the tutor here needs to be significant in helping to establish the functioning group.

CHAPTER 6. WHAT IS HENLEY'S MBA?

Although the focus of this thesis is on the use of computer mediated communication, it is set specifically within the context of Henley's distance learning MBA programme. This chapter aims to give the background relating to this programme in order that the setting within which CMC is used in this case study can be fully understood and the implications for CMC evaluated. It begins by considering the reasons for the growth of the distance learning MBA in the UK and then looks at the background to, and development of, the Henley MBA programme including a brief description of the three distance learning variants specifically related to this research. This chapter concludes by evaluating Henley's MBA programme against the three frameworks as described by Keegan (1986, see chapter 3.5) and Smith and Kelly's convergence theory (1987, see chapter 3.6).

6.1. The Development of the MBA in the UK.

The MBA programme has its origins in the USA where it has developed into the acknowledged qualification for preparation for senior management. The USA now produces some 70,000 graduates a year. In the UK, however, it is a much later phenomena first appearing in the 1960's.

In its early days in the UK it was usually delivered as a full-time programme lasting either one or two years. The typical student on the course was a well experienced and practicing middle manager, probably comparatively young, who was aspiring to greater things. From this beginning the MBA increased in the respect in which it was held by many within the business environment to the extent that by the end of the 1980's it was clearly seen by many as a qualification that would guarantee a substantial salary rise and also act as a passport to many desirable career moves. Whilst this exalted status is no longer true, if indeed it ever was, the UK MBA

from the better respected business schools is still highly regarded as a highly desirable and respected qualification.

The form of delivery of the MBA in the UK has evolved into a range of variants which can be categorised under the three headings of full-time, part-time and distance learning.

6.1.1. The Full-Time MBA.

As provision of the MBA expanded in the UK, so did its form of delivery. For some years the full-time programme remained the main form of delivery and it still holds a significant place today. However, this form of programme had some significant drawbacks, not least the necessity for potential students to take a break from employment in order to attend full-time. Although some employers were prepared to provide this facility to some students, many were not. Thus of those potential students who were not able to gain employer support many who could afford to do so were often leaving their jobs and funding themselves through the MBA programme. For many this meant a significant financial commitment. Even though at that time there was significantly more opportunity to obtain research council funded grants (and latterly specially designed loans available), the level of income that could be maintained during the study period would be significantly reduced, and this at a stage in family life for most students where young families demanded a significant level of income. Nevertheless, many took this option believing that as soon as they had completed the course, because of the status of the qualification, they would have no problem in finding a new appointment as good as, and probably significantly better than, the one they were leaving and would soon recoup the financial cost involved.

6.1.2. The Part-Time MBA.

Despite this ready supply of potential students, there was also a large unsatisfied demand from potential students who, for various reasons were unable to take such a period of time away from work. It was in response to this demand that new

forms of delivery began to evolve. Initially this took the form of part-time study where attendance was required for perhaps one whole day and some evenings each week. This created the restriction that the course was available only to those within easy commuting distance of the business school and still demanded regular time away from work. To alleviate this problem other variations were established. For example Cranfield developed a part-time programme based upon regular weekend residential attendance.

Whilst this form of delivery has many advantages in terms of opening opportunities to those who need to maintain employment, it is not without its disadvantages. It is still limited to those who live within reasonable commuting distance of the college. Secondly, whilst it is spread over longer periods of time, typically two years, than full time programmes, it is still very time consuming as much work is required outside college attendance. This can be very demanding on busy managers especially as many of them also have family commitments, often with young children. Thirdly, because of the lack of residence and the limited time in attendance at college, there is a significant reduction in the opportunity for interaction with peers. Thus the associated learning from each others' experience in a wide range of business and cultural backgrounds, which is generally seen as a benefit of the MBA programme, is greatly restricted.

6.1.3. The Distance Learning MBA.

By the early 1980's various providers were beginning to start to consider the advantages of Distance Learning as a form of programme delivery. This was in no small part due to the establishment and success of the Open University (although the Open University was not to become involved in Management education until the formation of the Open Business School in 1983 and did not offer an MBA programme until 1989). At this time distance learning was rapidly moving away from its traditionally held concept of correspondence courses to a more personalised and interactive form. This is aptly described by Nipper (1989) as moving into a third generation

of distance learning. He described the first generation as being the traditional correspondence course with the medium for course materials being the printed word and communication between student and tutor being the postal service. This generation of delivery has been in existence almost as long as the postal service. The second generation evolved in the late 1960's to take advantage of developing communications technology and incorporated the use of broadcast media, audio and latterly video cassettes and increasingly computers. Communication now included telephone counselling and some face-to-face tutorials. In both these generations of distance learning there is a lack, if not total absence, of student to student interaction that is so important in MBA education. Nipper describes third generation as the introduction of communication and socialising in learner networks through the use of computer conferencing.

Although full-time and part-time methods of delivery still play a vital part in the overall provision of MBA education, distance learning has now become a major form of delivery of MBA programmes in the UK (O'Leary, 1994). Whilst it is often used in its own right as a delivery medium, it is often used in conjunction with other forms of teaching and support such as face-to-face seminars and residentials thus creating various hybrid forms of delivery.

6.2. Henley's MBA.

6.2.1. The Background and Philosophy.

Henley was founded in 1945 as a result of concern amongst influential members of parliament and industry that a major new initiative would be required to generate sufficient quality managers to re-establish British industry after the second world war.

The first programme was held in 1948 and consisted of a three month residential programme which was to form the basis of the major programme offered by Henley for over forty years. It was based around a three point premise as described by Slater (1989):

1. There would be a fund of first-hand experience among members of the session which would be a major source of learning for members. This source would be unlocked by the creation of Syndicates of about nine members to work as a group and learn from each other.
2. Mature people of the kind on the programme would learn best by participation in the learning process and by having some influence over what was learned and thus able to relate it to their own needs and interests. Thus informal sessions with visiting experts around a syndicate table was conceived as being of greater value than formal lectures.
3. Those attending the programme would be likely to move into jobs with wider responsibilities at senior levels and thus Henley should endeavour to teach the participants the skills needed in these roles.

In order to stress the relationship between participant and staff, participants were called members and not students. To enable the above philosophy to be adopted Henley's syndicate method of teaching became established in which most teaching took place within the syndicates through the undertaking of various group tasks which drew out of all participants their own expertise and experience for the benefit of all. All members took turns in acting as Chairman and Secretary in the conduct of the various tasks and in the production of an agreed report which was then presented to the remainder of the programme where it would be subject to questions and challenge.

Henley were well ahead of the times in their thinking. Many aspects of their philosophy are only in recent years becoming widely accepted. For example, there is much in the way the programmes were conceived and conducted that is reflected in the growth of competence based education and the concept of open learning. This general philosophy of teaching method became the hall mark of Henley's programmes and has remained, albeit evolving, at the core of all Henley's face-to-face programmes ever since.

6.2.2. The Modular MBA

Henley ran its first Masters level management programme in conjunction with Brunel, The University of West London, in 1974. This programme (initially an MA, but subsequently becoming an MBA), known initially as the Modular Programme and latterly as the Active Programme, was based on a variant of the part-time version of delivery. It consisted of four blocks (or modules) of eight week duration residential study interspersed by three month periods of business-based project work which was usually carried out within the member's own organisation, often whilst continuing in his normal work role. The philosophy behind this programme's design corresponds with the traditional values behind Henley's original programmes. Much of the work, particularly in the first module, was syndicate based. Learning was extensively through peer interaction and experience in group activity. Much of the assessment was by means of assignments which encouraged the application of theory that had been learnt to real situations within the member's experience. Whilst the programme had structure and strict timetable within it, it also had a great degree of freedom for members to determine their own learning both in the sense of application of theory to practice, and in the choice of optional subjects beyond the basic core of the programme.

6.2.3. The Part-Time MBA.

A more conventional part-time MBA was launched in 1979 with attendance required for one day each week during six academic terms. Because of the nature of attendance, this programme broke away from Henley's normal philosophy and was focussed around teaching by lecture of the main core subjects of management. This programme was subsequently extended in 1985 into a four term full-time equivalent based upon the same course design.

6.2.4. The Distance Learning MBA.

Distance learning was first considered by Henley in 1981 and approved as a medium for Masters programmes by the Brunel Senate in 1982, but it was not until 1984 that this version of the MBA was ready to be launched.

This programme was originally structured around six modules and two options based on the major business subjects, plus a project and a dissertation. Students were allowed to take as long or as little time over each as they wished thus allowing them to fit study in with their own personal commitments. The aim of the programme was "to give access to management education to a wider group of practising managers to develop ability to apply the theoretical principles of management to business situations, as well as a capacity for critical thinking, personal skills in diagnosing problems, managing change and convincing others of the quality of one's ideas" (Birchall and Pollack, 1992).

The distance learning MBA was launched as an open programme, that is, aimed at individual students either with or without employer support. Its intention was to provide opportunity to a wider potential market by removing the attendance barrier to full and part-time courses as already mentioned. This proved much more successful than could have been imagined with currently in excess of ten thousand students registered world wide.

6.2.5. The Tailored MBA.

From the basis of the open distance learning MBA the Tailored and subsequently Inter-Company MBA's were launched. These were directed at corporate clients and designed to tailor the basic programme to the individual corporate requirement. This could involve relatively minor changes to course content, but more specifically was tailored in terms of its structure and tutorial support.

The structure of the Tailored MBA was that a group of students from a particular corporate client were inducted

into the course at a two day residential session. At the session they would be introduced to the course content and structure and to each other. Emphasis was placed on peer support and group working both during the induction course and subsequently during all parts of the programme. Unlike the open programme, the tailored students were given a formal study schedule with fixed one day face-to-face workshops for each subject module at which all students were expected to attend, assignments submission dates and examination dates. Whilst this reduced the individual student's independence, it was aimed at providing some degree of student interaction and peer support that was the hall mark of earlier Henley programmes.

6.2.6. The Inter-Company MBA.

The Inter-Company MBA varied from the Tailored MBA in that it recruited four or five students from each of four or five different corporate clients and mixed them in a single intake or Syndicate. The one day face-to-face workshops were hosted in turn by the participating organisations who provided some input to the programme to give practical illustration to the theoretical input from the tutor. Group work was encouraged within small mixed company working groups to develop cross fertilisation of corporate ideas and culture. It was the intention to develop a feeling of belonging to a peer group for mutual support and encouragement as well as developing personal friendships, all of which it was hoped would relieve the "loneliness of the long distance learner". Each Syndicate was allocated a dedicated academic tutor (in addition to subject specialist tutors for each workshop) whose task was to maintain regular contact with students to encourage group development and mutual support, to provide individual support and encouragement and to attempt to help keep each student to the study schedule and to act as a general mentor and confidant.

6.3. Evaluation of the Henley MBA Programmes.

It can be seen that there is a clear progression in the development of Henley's MBA programmes from the initial Henley programme in 1948 to its current range of MBA programmes. In order to evaluate these, and in particular the distance learning based versions, they will be considered in the light of the three frameworks (see chapter 3.5) as described by Keegan (1986), and Smith and Kelly's convergence theory (Smith and Kelly, 1987) (see chapter 3.6) both as described in chapter 3 above. These are Independence and Autonomy focussing on the student's perspective; Industrialisation focussing on the college perspective; and Interaction and Communication focussing on the interaction between the student and the college in the form of published course materials, tutors and administrators; and between peers. Finally, these programmes will be considered using the framework for convergence as described by Smith and Kelly (1987) as also discussed above in Chapter 3.

6.3.1. Independence and Autonomy.

Henley's syndicate system was developed to give, not so much individual autonomy, but group autonomy. This system relies only in a small degree on tutor control beyond the initial briefing and general guidance on task requirements etc. Beyond this, control is very much in the hands of the syndicate itself whilst the tutor is always available to provide input as and when required by the syndicate (Slater, 1989). This relates very closely to Delling's (in Keegan, 1986) concept. Wednmeyer (in Keegan, 1986), however, sees the tutor as having a major task in student motivation in a system akin to second generation distance learning in which inter-peer communication is not seen as significant. Whilst this aspect of tutor role is important in the syndicate system, its importance is reduced by the significance of inter-peer communication itself generating individual motivation as well as group motivation.

The initial Henley MBA, that is the Modular or Active MBA, took the syndicate system as its main focus of operation, but

counterbalanced this with a structured lecture programme covering the main areas of management which was, for the most part, compulsory although in the latter stages of the programme a greater degree of choice on the part of the student was incorporated to allow individual tailoring of the content to personal need.

The development of the full and part-time programmes moved away from the concept of independence and autonomy to the traditional form of taught face-to-face programme whilst still retaining a reduced level of syndicate working.

As the move into distance learning was based upon the course content as delivered on the full and part-time programmes it inevitably inherited many of its characteristics. Thus it did not contain many of the aspects of independence and autonomy in that there was little choice of what or how to study on the part of the individual student. It did, however, give the student a new freedom in choice as to when and at what speed to study as there were no scheduled completion dates for the programme as a whole or for individual elements of it. Subsequently experience showed that this was not a benefit to the majority of students who needed some element of deadline in order to prevent themselves slipping down an increasingly slippery slope of "I'm too busy now, I'll do it tomorrow" syndrome, but, as is often the case, tomorrow never comes. Students on the open distance learning MBA are now grouped into cohorts with advised target dates for submission of the various items of assessment. However, these are almost impossible to impose without draconian measures such as failure due to non-submission of assessment which would lead to high dropout rates, and they are thus rarely adhered to. Henley does now have a final deadline in that all students have to complete the programme within a maximum of seven years.

This indicates one of the dilemmas of student independence and autonomy, that of the student for very valid reasons not being able to fully control his own destiny. In the case of many of the students on the Henley programme this is caused by the heavy and demanding commitments that many of them bring with them into the programme. These commitments can

often be the continuing pressure of a demanding and responsible full-time position in the work environment often exacerbated by domestic commitments to a young family. In these circumstances the MBA study can often understandably take third place in the list of priorities. For such individuals it is possibly even more vital to provide a programme with independence and autonomy, but at the same time providing support and motivation to allow the student to continue to meet a realistic study schedule.

Whilst the initial objective of the Tailored and Inter-Company MBA's was to provide a product that would more directly meet the requirements of specific corporate clients, a further objective was to give greater support to the individual student. In the case of the Tailored programme there was inevitably an element of moving the focus of independence and autonomy away from the individual student towards the corporate client, and this created a dilemma in terms of who is the client, the student or the employer? The aim of the Inter-Company MBA was not only an attempt to meet the needs of the corporate client, but also to increase the support for the individual student enabling him to more easily complete the programme and at the same time enhance the value of the experience. This was attempted by creating fixed small working groups within each Syndicate of students from each of the participating organisations and encouraging working within these small groups. This was to provide both learning from each others experience in differing work environments, and also to create peer support and motivation. Also to enable this support to be fully effective, a more rigid time table for study was imposed. Whilst this was not always adhered to, it did provide the basis for much stronger peer support. Thus this again faced the dilemma of reducing student independence and autonomy in order to provide a better student support facility. What it did do was to tend to move the independence and autonomy away from the individual and onto the group.

It would seem that the major criteria for student success in a regime that gives great student independence and autonomy is the individual student's own motivation and ability to maintain that motivation over long periods often with major

conflicting interest on his time. Kaye and Rumble (1981) say that high levels of motivation are the general rule among distance learning students. This may well be the case as most such students, particularly those on major programmes like an MBA, are aware of the commitment that will be involved and the sacrifices necessary in order to complete the programme given their other commitments. Whilst it is clear that Henley's distance learning programmes do give students a great degree of independence and autonomy and also that Henley's programmes have been proven to be successful by the very number of students successfully passing through the programme and the increasing number registering, what is not clear is whether students accept the independence and autonomy through choice or by default. What would appear to be so is that by constraining the freedom of individual independence and moving the emphasis towards the group, as in the Tailored and Inter-Company MBA, that an improved completion rate and a greater student sense of belonging is achieved. Such belief is, unfortunately, only supported by the intuitive feel of staff associated with the programmes. Completion rates in distance learning are notoriously difficult to measure as it is difficult to identify when an individual fails. It is much more easy to say that an individual has not yet completed. Because the programme can last for up to seven years (and even longer for earlier students) it requires completion rate data over many years to give a true indication of programme success by this criteria.

Mason (1989) gives general support for this theory that students on distance learning programmes like Henley's and those run by the Open University are likely to be self-motivated. She states "Open University students have taken a conscious decision to study at a distance, although it is a source of some speculation whether they prefer studying independently, whether they become resigned to it through lack of alternative, or whether they are habituated to it by the nature of the OU packaged courses". She goes on to say that "the OU can do much to strengthen and deepen student motivation and commitment by encouraging a sense of participating in a significant enterprise and sharing with other students similar aspirations towards study and personal achievement". One of the major objectives in the

introduction of CMC into distance education programmes is to provide the means of just such opportunity.

6.3.2. Industrialisation.

Professor Kempner, the then Principal of the college, first proposed distance learning as a medium to be adopted by Henley in 1981. This was at a time when the Open University was beginning to introduce management programmes. He argued (Slater, 1989) that "new types of continuing education based on distance learning, and eventually on computer-assisted learning, were potentially important for the College; that these areas of business could give considerable opportunities by the end of the decade; and that if Henley were to decide to get involved in this market, it should act as quickly as possible". This proposal was based, at least in part, on the perceived commercial pressures of the market place that would become prevalent in the provision of post-experience management education. Professor Kempner has subsequently been more than proved to be right in his prediction.

The distance learning programmes developed by Henley and the subject of the research of this thesis are, in many aspects, well described by Otto Peters explanation of Industrialisation as discussed in chapter 3. Their design is based upon mass production allowing high quality materials to be produced by a range of specialist lecturers, and programme delivery which is undertaken in such a way that lecturers are able to teach and tutor far more students than they could in any form of traditional delivery. This involves a much wider range of individual staff of both academic and administrative types within each programme which thus allows greater specialisation.

Currently the delivery medium has been printed workbooks supported by audio and video cassettes, but the advancement of technology is in the process of changing this as is indicated by the objective of this thesis, that is to identify the potential role of computer mediated communication to enhance the distance learning process.

Henley's process of administering the programmes relates to Peters' various concepts of industrialisation in all its aspects except possibly the last, that of monopolisation. Henley clearly is not experiencing a national monopoly of this market as not only the Open University runs similar programmes but so do other business schools such as Warwick and Strathclyde among others. What has perhaps developed beyond Peters' perception is the international dimension of most of these players. Henley currently has registered students in over sixty countries around the world and has become, in every sense, an international player.

If Henley's programmes are to continue to move into third generation MBA programmes, then one implicit aspect of Peters' model that Henley will move away from is that of the level of tutor contact with individual and small groups of students. Peters sees tutors as being able to teach increasingly large numbers of students without a reduction in quality. This may well be true at the "low-level" end of the programme spectrum, but the indications are that to maintain quality in MBA programmes at the "high-level" end will require the maintenance of a higher tutor/student ratio. Certainly the effective use of CMC would appear to require this as was the case in both the Guelph (Lauzon, 1992) and Lancaster (McConnell, 1994) examples quoted above.

6.3.3. Interaction and Communication.

This third framework for evaluation focuses not on either the student or the provider, but on the communication between the two. Whilst many students often choose to ignore the facility to communicate with the provider or make little use of it, Borje Holmberg (quoted in Keegan, 1990) emphasises its importance to the student.

From the initial launch of Henley's distance learning programme, the potential for the student to be able to make communication has been seen as vital. All their distance learning programmes have had a range of such facilities. The post of Student Services Manager was created to coordinate individual student's needs and help with their problems. The

Student Services Manager is available to each student by telephone or letter. For each subject there is a specialist tutor who is available for telephone consultation, and who in most cases also runs a computer conference based subject clinic which is available to any student registering to use the facility. Additionally students have the opportunity to meet both tutors and other students at about twelve one day workshops throughout their programme. Latterly the Open MBA has introduced another level of communication, that of a cohort manager. Each student on being registered is allocated to a cohort for which an administrator is responsible as cohort manager. This cohort manager maintains contact with each student and ensures that any problems are identified early and dealt with quickly and efficiently.

In addition to contact by phone and letter to deal with problems, the assessment process is seen as part of the interaction and communication process (Holmberg, quoted in Keegan, 1990). Each module is assessed by a written assignment which is designed to allow the student to demonstrate an ability to apply theory to the real business world, typically as experienced in his or her own workplace. Many modules also contain practice assignments that are optional. Each assignment (optional or compulsory) is assessed by a tutor and is returned to the student with written tutor feedback, thus generating further regular student/tutor interaction. For the dissertation each student is allocated a personal tutor for guidance and advice. This usually is conducted via the written word, but at the student's instigation, telephone conversations and, on occasions, face-to-face meetings are held, again increasing interaction.

The design of the Tailored and especially the Inter-Company MBA programmes is such as to extend this interaction and communication, not only between the individual student and the college, but between the students themselves. During the period of time covered by this research, each syndicate on both these programmes was allocated an academic tutor whose role was to keep regular contact with each student, to encourage each student and endeavour to maintain enthusiasm and motivation, and to deal with any problems at an early

stage. In addition, the syndicate tutors in the Inter-Company programme helped develop the function of group working within each syndicate and attended all the syndicate's workshops thus enabling a personal friendship relationship to develop with each student.

Group working within the small cross-organisational groups was facilitated in a number of ways. These included telephone, fax and the occasional face-to-face meeting when these could be arranged, but principally through the medium of Computer Mediated Communication using Henley's HELP system (Henley Extended Learning Programme). Activities included more formalised exercises, often facilitated by a tutor, based on specific current aspects of course work; informal discussion exercises also based on course work; collaborative working on assignment topics; and preparation of case study material for examination etc.. This concept of group working supported by CMC in a distance learning programme, despite the physical separation of the students from each other, was a deliberate attempt to create interaction between the students which in turn would also increase interaction between the group and the tutor. This is a significant extension of the framework of Interaction and Communication as described by Keegan.

6.3.4. Convergence.

From the above discussion it can be seen that there is a significant movement within Henley's MBA provision in line with Smith and Kelly's convergence theory as discussed in Chapter 3. This can be seen in all three of Smith and Kelly's levels of convergence:

- i. Over the last few years the Active MBA programme has had its residential content reduced by removing some of the face-to-face teaching content and which has been replaced with the use of distance learning materials from the distance learning programme. This has been a response to the market demands for less time away from work and also for less expensive programmes. As residential programmes are significantly more expensive than distance learning programmes, this merging of

programme types makes a significant cost saving whilst still enabling the majority of the benefits of a residential programme to be retained. The part-time programme has now changed from regular weekly attendance to a periodic weekend attendance supplemented by several one week long residential sessions spread over the duration of the course. These residential sessions are again supplemented by use of the distance learning materials in place of some of the face-to-face teaching. Already the distance learning based programmes, particularly the Tailored and Inter-Company forms are, as already described and often supported by CMC, incorporating significant aspects of mainstream modes of education.

ii. Within all of its MBA programmes Henley is firstly attempting to improve the quality of its products, not simply to provide a "poor man's alternative". The mixing of distance learning materials into the previously exclusive face-to-face programmes is an attempt to not only provide value for money, but also to meet the ever changing needs of the fast track middle management executive who wishes to benefit from a quality management education, but cannot afford the time for extended periods away from his work. At the same time, the distance learning programmes are attempting to introduce more of the desirable features of the full-time programmes such as the extension of peer group interaction and increased student/tutor interaction. It is in such activities that it is believed that CMC can play a positive role.

iii. Whilst all Henley's MBA programmes are based upon the study of a basic core of management subjects, there is increasing scope in all versions for individual choice of study around this core. In particular the assessment structure encourages the application of knowledge to a wide range of practical situations and scenarios. In addition there is an increasing opportunity, particularly from the distance learning based programmes, for the development of management competences based around the Management Charter Initiative scheme which gives the individual student scope to tailor his studies to his particular needs. There is also scope for transfer into and out of the distance learning

programmes to or from those of other providers, thus providing a versatility that has not previously been available. In respect of the second aspect of open learning, that is open entry to programmes, clearly the question of entry to an MBA programme being open to anyone is not realistic given the high level of the academic ability and breadth of experience required. However, like other providers of such programmes, Henley does realise that academic qualifications are not the only criteria for judging suitability. Suitably experienced students without qualifications are able to register for the first part of the distance learning programmes which constitutes the Diploma in Management Studies. Suitable completion of this allows them to then continue with the second part of the programme and gain the full MBA.

Henley's original MBA programme was based on a philosophy which varied significantly from that of normal mainstream mode of education. Henley's emphasis was on the syndicate system in which learning was not predominantly lecture based, but depended on interactive learning based on the participants' experience and competences being shared with each other. In some sense this could be described as already at that early date moving away from the mainstream by developing aspects of approach that were later to be identified with third generation distance learning. However, with the introduction of full and part-time versions of the programme there was a move back towards the traditional mainstream philosophy and a dominance of teaching by lecture in a face-to-face situation. As these programmes have developed they have begun the move away from the mainstream characteristics and the inclusion of more of the characteristics of the distance programmes. At the same time, the distance learning based MBA programmes, particularly the Tailored and Inter-Company versions supported by CMC, have been rapidly moving from the conventional distance characteristics and incorporating more of the mainstream characteristics. This is clearly bringing all Henley's programme towards convergence. Whilst this movement is being encouraged by technological advances, the potential for significant further advance in convergence led

by such developments is the subject of the research to follow in this thesis.

Henley's use of CMC to develop programmes in such a way as to encourage a move towards convergence has its emphasis initially on the distance learning side of the gap. In contrast Lancaster's experience (McConnell, 1994 and Hardy et al, 1991) starts with a mainstream part-time programme and uses CMC as a means of extending group working and tutor support into its non-contact periods. This would indicate that CMC can be used as a means to cause a move towards convergence to be achieved from both sides of the divide.

6.4. Summary.

This chapter has briefly set out the history of the development of the MBA in the United Kingdom. Particular emphasis was placed on the evolving nature of the programme and the factors influencing the evolving delivery methods that have lead to the growing significance of the distance learning variant. The history of Henley's MBA was described setting out the original philosophy for management education from the college's inception in 1945 and showed how and why the essential features of that philosophy have been retained in the current MBA programmes.

Each of the forms of delivery were described. In order that the applications of CMC studied within this thesis can be set within their operational context specific emphasis was given to the distance learning variant and in particular the variants that form the basis for this thesis, ie the Open, Tailored and Inter-Company MBA's. The MBA programme in general, and these distance learning variants in particular, were then evaluated using the four frameworks as described in chapter 3, ie Independence and Autonomy, Industrialisation, Interaction and Communication, and Convergence. The major conclusion is that Henley's distance learning programmes are moving towards the centre ground and hence contributing towards convergence.

The output from this chapter will be used as one of the inputs in chapter 11 in evaluating the use of CMC within the three distance learning programme variants to assess its value in assisting in this move. The evaluation of Henley's programmes will also subsequently be re-evaluated in chapter 12 in the light of this study to determine the added value given by CMC in enhancing distance delivery.

CHAPTER 7. WHAT IS COMPUTER MEDIATED COMMUNICATION?

Before the use of CMC in the delivery of distance learning programmes can be considered it is essential to understand not only what the nature of CMC is, but also its features, its current and potential applications as well as its limitations. This chapter sets out to achieve this at least in as far as it is relevant to the applications considered within this thesis.

There is often confusion over the meaning of the term 'computer mediated communication' and this is clarified. The chapter begins by describing CMC, its relationship with groupware, and its history. The use of CMC is described with specific reference to the major features utilised in distance learning. The chapter concludes by considering the application of CMC to postgraduate management education, its benefits and limitations, and considers the implications of integrating CMC within such programmes.

7.1. Groupware.

Recently the term 'groupware' has become in vogue in computing circles. The term was coined as long ago as 1978 by Peter and Trudy Johnson-Lenz (quoted in Rapaport, 1991,p.xix) when they defined it as 'Intentional group process and procedures, plus the software to support them'. In other words, it is the use of the rapidly developing sophistication of computer software to encourage and support the development of collaborative working between the individuals that make up a group without the need for face-to-face meetings. With the rapid improvement in telecommunications linked with increasing computer power, the potential for using this facility with a group widely dispersed over great geographical areas is becoming more feasible. In looking at this changing environment Rapaport (1991,p.xix) re-defines 'groupware' as 'software that supports the development of information content shared by groups of people or provides support for the flow of work as

it moves among working groups'. It is within this family of software that Computer Mediated Communication, or CMC, has evolved.

7.2. What is Computer Mediated Communication?

Over the last two decades there has been a dramatic advance in computer technology. Computers of today achieve far more than would have even been dreamed about by the average user perhaps only ten years ago. Computers have developed far greater processing power and speed. They can handle far more complex tasks in greatly reduced time. Whilst their performance rating has risen dramatically, so their physical size has also reduced significantly such that we have seen the progression from desktop personal computers, through portable computers that could be moved but were the size and weight of a heavy large suitcase, laptop computers that were about the size of a briefcase, notebook computers that would easily fit inside a briefcase, to the latest offering from the industry of palmtop computers that are often little larger than an average paperback book. Alongside this great reduction in size of computers has been an equally impressive development in power. A small palmtop computer may well have far greater power than a desktop computer of only fifteen years ago. This vast increase in the performance of computers has been linked to an equally impressive development in software capabilities.

Along with this rapid development of hard and software elements of computers has been an equally rapid development in communications technology. Such has been the development that worldwide networks are now commonplace. Not only is it now possible to communicate almost instantly to most corners of the world, but it is now possible to transmit vastly larger quantities of data much faster than would have been unimaginable only a few years ago. The significance of this is that practical communication is no longer restricted to data, but image and even video transmission are becoming practical propositions. This telecommunications development has led to vast improvements in one to one communication, eg telephone both in terms of speed and ease of access to most

parts of the world and in quality of sound transmission, but also in terms of one to many communication, eg in broadcast of both sound and vision via radio and television. What has so far lagged behind is development of many to many communication systems which will allow the effective mediation of small group activities. It is against this rapidly developing background of computing and telecommunications technologies and to fill this gap that CMC is developing. CMC is simply a means of allowing a group of individuals, who for whatever reason cannot meet face-to-face, to communicate with each other via the medium of their computers and a telecommunications network in order to undertake group activities. Andrew Feenberg (1986) described it as "the first technology to provide effective electronic mediation of small group activities".

Computer mediated communications systems can include a range of variants of these technologies. Berns et al (1992) describe CMC as able to:

"bring together the capabilities of computers and telecommunication networks. It increases the capacities for information processing, and can support interaction between, say, students and tutors over long distances. For those purposes CMC systems may include electronic mail, computer conferencing, computer bulletin boards, facsimile, teletex and videotex, voice messaging and desktop videoconferencing."

It can thus be seen that there is some confusion over terminology in this area. Whilst the technologies that Berns et al include may be justifiable, in general CMC is considered (as in the context of this thesis) to include only electronic mail, computer conferencing and computer bulletin boards used as a medium for communication and as a computer based information system (Hiltz and Johnson, 1989). The name applied to this phenomena is at times even more confused in that the term 'computer conferencing' is often used synonymously with 'computer mediated communication' (Rekkedal and Paulsen, 1989). The original term used was Computerised Conferencing. It was first coined in 1971 by Murray Turoff who was responsible for developing the first conferencing

system, EMISARI. He later modified this name in the light of experience. He wrote (Turoff, 1989), "I have come to believe that a more appropriate name today is Computer Mediated Communications (CMC)". For the purposes of this thesis Turoff's position will be used, ie Computer Conferencing will be seen as a subset of Computer Mediated Communication.

The core of a computer mediated communications system is a host computer sited, in most cases, at the provider's premises. All the users are connected to this host computer either by direct cable contact from terminals or PC's or, as is the case with distance learning students, by a modem link from their own PC's. The host computer holds all the master files of the communicated information and each user accesses these to either keep up to date with other users' contributions or to make their own contributions. Such communication is generally asynchronous thus allowing each user the freedom to access the system at any time convenient to him or her. This allows users a great deal of flexibility in time keeping and eases the problem of access from different time zones around the world. It is this feature of asynchronous operation that adds significantly to the potential benefits of the system. Emms and McConnell (1988) describe one aspect of this as:

"the electronic equivalent of face-to-face meetings Instead of meeting face-to-face, students and tutors 'meet' over a period of time by means of typing messages via a terminal linked to a mainframe computer. These messages are stored and can be read at any time convenient to the users - on the same day, several days or even months later. Unlike face-to-face meetings and telephone communications, there are no limitations of time and place, all communications occurring asynchronously".

7.3. The History of CMC.

Early computers were very isolated machines in that they were unable to communicate directly with other machines. Neither the computers' sophistication nor the telecommunications'

technology were sufficient to allow early computers to directly talk to each other. Indeed until the advent in the mid 1960's of direct access storage devices, or disk drives, the only methods of transfer of information from one computer to another was by sequential access medium such as magnetic or punched paper tape or punched cards. Users communicated with the computer from dumb terminals, that is terminals that of themselves have no computing power but were, in effect, keyboards that were connected directly by cable to the central computer.

The earliest forms of communication mediated via the computer on these systems were facilities for simple message exchange, in other words, embryonic electronic mail (E-mail) systems. As computer systems and communications became more sophisticated, so E-mail systems evolved.

E-mail is, in essence, an electronic version of letter post in which the sender dispatches a letter to be deposited in the letter box of the recipient. If he wishes the sender can send copies of this message to other users in just the same way as in the letter post system. The major benefit of E-mail lies in its almost immediate delivery to the recipient's letter (or mail) box. This facility is basically a one-to-one communications system, that by evolving the use of address lists and sending multiple copies can become a one-to-many system. The natural progression from this was to a many-to-many system which is the essence of computer conferencing in particular and computer mediated systems in general.

The first conferencing system was conceived and developed in 1971 by Murray Turoff (Rapaport, 1991,p.2) who was commissioned by the USA's Office of Energy Preparedness to develop a computer-based version of the voice conference system at a time when the national political situation created a demand for a range of economic data to be made readily available to a number of regional offices. These offices were all linked via dedicated lines to a central computer. This allowed not only data to be readily available and regularly updated from a central source, but also allowed speedy communication of policy decisions etc from their

control source to the regional staff despite their geographic dispersion. Users were not required to be available to answer telephones at specific times for consultation nor were they dependent on time delays of postal systems in transferring paper based information between head office and regional centres, nor once received was there a need for paper-based files of information that needed constant updating.

The Emergency Management Information and Reference System (EMISARI), as the system was known, was developed to operate on a single large mainframe computer. It was not until the late 1970's when the now common micro-computer was developed that there was any question of systems being developed that allowed communication between computers, and, more specifically for CMC in further education, between a central point eg a College and its geographically remote students in their homes.

After developing EMISARI, Turoff joined the New Jersey Institute of Technology to continue research into what he clearly saw as the potential in future development and use of CMC. The initial outcome of his research was the production of the EIES system that became operational at NJIT in 1975. This system, which in its later form of EIES2 is one of the current major educational systems, was similar in many ways to EMISARI. It was still at that time only operational on a single computer and its uses were confined to those who had access to terminals to that computer, but Turoff further developed many of its features and facilities. Its purpose at this time was principally as a research tool to investigate the potential of the system for educational and commercial use.

At about the same time Robert Parnes developed another system called Confer as a means of investigating the use of these systems as a medium for enhancing the performance of academic administration and management with a large University environment. The system contained many similar features to EIES2 but had developed some to a more advanced state. However, it was designed to run under a specific operating system, MTS, which made its potential for wider application

more limited. This system is still in use today on a commercial basis in a number of American organisations including the US Army, the US Environmental Protection Agency and the Kellogg Foundation.

It was as a result of this operating environment required by Confer that in 1985 Charles Roth at the Wayne State University in Detroit wrote his own version of the system that would run under a range of operating systems available on smaller machines. This system was called Caucus and is one of the most widely used systems today in education in the UK.

By the late 1970's commercial organisations were beginning to be interested in the potential of CMC systems. In 1980 Source Telecomputing INC in the USA released its system known as Parti or Participate which could be run on a range of host computers. This system under its current version 5 is still widely used world-wide. It was from the background of Parti that the Com system, and subsequently the Porta Com system, was developed in Sweden. Also at the same time the University of Guelph in Ontario, Canada, developed the CoSy system out of a combination of Confer and Parti. The university of Guelph subsequently became one of the major, if not the leading centre for the development of CMC within the further education environment.

Amongst the many variants of CMC that have been derived from this background is one, known as HELP, developed by Brainstorm Computers in London that was initially adopted by Henley Management College for use in distance learning delivery of postgraduate management education. It has subsequently been used by various commercial organisations eg British Telecom.

More recently computer companies like Digital and Lotus have developed within their portfolios software to support their evolving hardware systems that are based upon E-mail and information distribution that extends into conferencing. Digital's system is known as Vax Notes, and Lotus has developed a system known as Lotus Notes. These systems have a much wider user base as they are principally packages for

commercial organisations for internal communications. However, Lotus are now actively developing a further education applications network of users supported by a specific development programme.

7.4. The Application of CMC within Higher Education.

CMC has been used in various ways to aid delivery of programmes to students. One of the best known examples is that of the Virtual Classroom experiment at the New Jersey Institute of Technology (NJIT). This is a system that is designed principally for students based on campus but not required to attend formal lectures. In this application students "share their thoughts, questions and reactions with professors and classmates, using computers and software that enables them to send and receive messages, interact with professors and classmates, read and comment on lecture material, take tests, and receive feedback without having to attend scheduled classes. Learning can take place at any location and at any time - using a computer on campus, at home or in the place of work" (Hiltz, 1990). This experiment proved successful and showed that if implemented and used in an appropriate way, that it can be a viable option for post-secondary educational delivery with outcomes on average being at least as good as outcomes for face-to-face courses.

If it is possible to use CMC to replace traditional face-to-face teaching methods, then it should be possible to use it as a valuable additional tool in the delivery of distance learning programmes. This could also then lead to a complete convergence between the two forms of delivery. However, in the case of such convergence, it would not fully meet Peters' concept of industrialisation as related to production and delivery of distance learning based programmes. One of the major characteristics of industrialisation is that of mass production and a greatly enhanced productivity from administrators and academics, and such a convergence would be likely to demand greater input from academics than is the case in current distance learning methods.

Much more common in terms of CMC applications is that of the UK Open University. They adopted the CoSy system from the University of Guelph in 1986 and introduced it into one of their distance learning modules (Mason, 1990). As the subject of the module was based on information technology, the use of CMC was seen partly as providing a means of many-to-many communications, but also as a live example of information technology in order to enhance the importance of the medium to the students. This experiment cannot be said to have been as successful at the Virtual Classroom experiment. Mason (1990) sums up the results by saying "for the majority of the students, tutors and course team members, computer conferencing was an interesting but marginal activity. For the committed or 'converted' minority, however, there is little doubt that this medium was an exciting, innovative and satisfying way of participating in distance teaching and learning". This result compared to Hiltz' experience suggests that if CMC is seen as a marginal aspect of a course then it will be treated by the majority as just that. These findings support the theory that if it is to be fully utilised then CMC needs to be totally integrated into the programme and not be merely a marginal activity.

These two practical examples of the application of CMC to the delivery of programmes indicate the range of different possibilities for the medium. The New Jersey Institute of Technology experiment was based upon the traditional face-to-face format of programme where students were either on, or very near, campus but were using the facility to make the programme open in the sense of not requiring specific time commitments, e.g. lecture attendance. Whereas the Open University example was designed to give an added dimension to a distance learning based programme and make it more open in the sense of giving the student greater choice with whom to communicate and when the communication should take place, it was also designed to give additional value from enhanced student communication both to and from tutors and peers. These two examples show the potential of CMC to create convergence of traditional teaching and distance learning models. Thus it is possible that CMC could be used to allow the current face-to-face model of delivery to be extended to a wider geographical clientele, and also to allow the current

distance learning model of delivery to be enhanced to add some of the features of tutor and peer interaction that are currently not possible.

7.5. The Major Features of CMC as used in Distance Education.

CMC, as generally used in distance education, has several discrete aspects to its form. Each of these has a specific and different role to play in the support of students. A problem that can easily be encountered is that it is often difficult to convey the potential of CMC because "it combines elements from a number of communication modes in such a way as to form a unique medium which doesn't replace or directly compare with any other single medium" (Mason, 1990). To ease this problem, Mason provided students with a diagram in which a physical campus is shown with buildings such as Mail Building, Staff Building, Conversation Area, Tutorial Building etc. each representing specific features of CMC which attempts to show the basic relationships of the various aspects of CMC to the learning process in a form with which students will, hopefully, identify.

7.5.1. E-mail.

This is possibly the simplest and most easily understood feature to CMC. It is essentially a mail facility that does not require paper or a postal delivery service. The process is that the sender composes a "letter" as a word processed document that is then sent electronically to the mail box of the recipient where it waits, as does a letter delivered by a postman in the conventional way, until the recipient takes it from his mail box by connecting his computer to the computer holding the mail boxes and retrieving whatever documents (or post) that is waiting for collection.

It is frequently said that this has little advantage over conventional mail other than possibly speed of delivery, and is slower and more cumbersome than telephone but it does not need the recipient to be available at the other end of the telephone at the time the message is sent. It can thus be

seen to be very similar in many aspects to facsimile when messages are sent to only one recipient.

The description so far provides a one-to-one communication system. E-mail has the ability to easily extend this to a one-to-many communication system by the sender selecting a number of individuals who will receive copies of the message or by selecting a predefined group all of whom will receive copies. Such predefined groups can be set up to include, for example, specific groups of students who work together or all students working on a specific programme. This will enhance communication between small groups working together or between tutors and administrators looking after whole programmes.

7.5.2. Bulletin Boards.

This in essence is an electronic form of notice board where notices can be displayed for the attention of whole groups of students. It does have an advantage over a physical notice board in that access can be restricted to only those groups of students for which it is intended. Typically it can be used by administrators for disseminating administrative information, or by tutors for disseminating general information or advice to all students in a particular group or on a particular programme. This is an extension of e-mail used on a one-to-many basis.

7.5.3. Computer Conferences.

This is the electronic equivalent of a face-to-face meeting. It allows a group of participants to interact with each other in discussion in a similar way that interaction takes place in a face-to-face meeting. There are, however, two major differences which can be both advantages or disadvantages (Kaye, 1993). Firstly, participants do not have to be present, ie logged into the system, simultaneously, but can access the conference at their convenience, read contributions since their last visit, and make their responses. Secondly, all contributions are in writing which

means that there is a permanent and complete record of proceedings. This has various advantages. For instance it allows individuals to make a considered contribution rather than an immediate off the cuff response as is usually the case in a conventional group meeting. It also enables those who would normally contribute little, because their personality allows them to be dominated by more confident or verbose colleagues, to have the opportunity to contribute thus giving opportunity for a more rich and varied discussion. It also has disadvantages, for example, a discussion will take much longer in duration to complete, but does avoid lost time in travel to attend meetings.

7.5.4. Communications.

CMC systems have the possibility of providing a gateway to further computer databases or systems. In the past this has been useful to make available various commercial facilities to which the student would not otherwise have access. More recently it has opened the possibility of giving remote access to such facilities as computerised library systems and CD-ROM services (although there are often licensing complications in the latter case).

7.6. The Application of CMC to Postgraduate Management Education.

The two examples already quoted of the Virtual Classroom of the New Jersey Institute of Technology and the use in support of distance learning by the Open University both give indication of the extent of possible application. This thesis is more concerned with applications of the nature of the Open University's experience of using the facility to support distance learning.

Harasim (1990) lists five attributes of on-line education that serve as a framework for considering the educational implications of the CMC as a medium:

i. The system facilitates many-to-many communication. Most distance learning students traditionally have had to rely mostly on one-to-many communication through learning materials, albeit printed, audio, video or broadcast with little opportunity for one-to-one communication with tutors or peers or many-to-many communication in groups. CMC has the potential to provide opportunity for this level of communication.

ii. It is independent of place. The advent of current levels of telecommunications available from the individual's home via the telephone line means that group activities and joint working no longer need to be restricted to those who are geographically located close together.

iii. It is time independent. Because communications do not occur in real time, participants have a chance to make their own contributions and to reflect carefully before committing themselves. The meeting is not monopolised by a few vocally assertive individuals, at least not in terms of 'talk-time', although individuals may still exhibit 'relational dominance' in an effort to control, command or persuade others. (Walthers, 1992, quoted in Tuckey, 1993). It should be noted that whilst CMC is intended to be asynchronous, that it is possible for students to use it in a synchronous mode and some on occasions do so with positive results.

iv. It is text-based. The medium requires that all information given out is written, and all information received is read. There are a number of cognitive benefits to this restriction:

- writing comments is perceived by learners as contributing to more reflective interaction than talking in a face-to-face class or telephone conversation.
- Online education provides the opportunity either to respond immediately or first to reflect - that is, compose (and edit) one's response.

- Reading and writing online can be conceptualised as unique ways of thinking about and exploring a topic en route to building knowledge.
- The need to verbalise all aspects of interaction within the text-based environment can enhance such metacognitive skills as self-reflection and revision in learning.

The text based medium does also have some disadvantages:

- "The removal of social context cues, valuable in equalising relationships between individuals, may render exchanges cold and unsociable, especially among novice users" (Hiltz, Johnson and Turoff, 1986, quoted in Tuckey, 1993)). Turoff confirms this need for "the use of paralinguistic cues to replace non-verbal ones. For people to succeed in relating to others, they must learn to express the social-emotional content of what they are saying. This has been found to be extremely crucial to being able to build a team atmosphere" (Turoff, 1989). In order to alleviate this phenomena some participants devise various character based symbols to represent facial expressions or vocal emphasis (Durham, 1990)
- The current state of development of most conferencing systems leads to a problem in following the various strands within a conference, particularly when there are several running simultaneously. Most systems have limited facilities for branching into different strands, referencing a contribution to others or for linking and relating ideas (Harasim, 1990, p.39-64). The system used by Henley as the subject of this research simply accumulates all contributions as a single text stream. Later systems, like Lotus Notes, do allow contributions to be entered under various sub-streams which is an improvement.

v. It is mediated via computer. This clearly relates to all four aspects above, but also adds value itself. For example, whilst the printed word creates a text based medium, CMC

provides interaction. Also face-to-face meetings (for which CMC is sometimes conceived a poor substitute) will not generally have the benefit of totally accurate transcripts of proceedings which CMC automatically provides. *

Thus it can be seen that CMC has a number of potential benefits when applied to postgraduate management education at a distance. Indeed Kaye (1993) maintains that "this technology is in many ways an ideal medium for students, tutors and course developers involved in distance and open education courses". The major benefits can be summarised as follows:

- i. Facilitating small group work. As stated earlier, one of the basic philosophies of the original Henley programmes was that students should learn from each other's experience by being involved in Syndicate work. CMC has the potential to allow such syndicate work to be reintroduced to distance learning based programmes.
- ii. To facilitate quicker and more reliable administrative and tutorial support of students by providing a medium for two way communication on a one-to-one basis as well as a group basis.
- iii. To reduce the "loneliness of the long distance learner" by maintaining a feeling of belonging to a peer group and reducing the isolation from the provider.

Kaye (1993) does also indicate that in order to benefit fully, CMC has to be:

"integrated, not only with existing print and audio-visual media, but into complex course development and presentation systems it will undoubtedly be necessary to re-think many of the standard course development and presentation methods, and this will probably involve major enhancements of tutors' roles."

This belief is echoed by others. Emms and McConnell (1988) conclude that if electronic communications are to be both worthwhile and enjoyable then CMC:

"... would have to be integrated into the course so that its use was central to student support and communication. In an ideal situation the system would be used for delivery of parts of the course and for asynchronous tutorials and seminars. Failing this, it would be used as a major method of communication between students and tutors. But its place in the context of the course would have to be well established for it to become widely used".

Feldman (1986, quoted in Harasim, 1987) suggests that:

"it is possible that the strengths of the new medium will be in other areas than the strengths of the old media. The new medium may even be used in ways not envisaged by those who designed it."

Linda Harasim (1987) supports this belief, "learning in a new medium does not appear to be simply a case of learning to use a new technology or using the electronic medium as a surrogate for other traditional modes of learning" and goes on to say that students in her experience adapted and created new learning processes that had not yet been investigated. She also refers to Johansen (1984, quoted in Harasim, 1987) who advocates "strongly encouraging moving beyond 'horseless carriage' thinking which casts new applications of computers in the image of their face-to-face precursor".

Thus there is evidence that CMC, if it is to be used to its full potential and provide the benefits that it promises then it has to be used in novel ways and not used merely as a poor alternative to other media. If it is only used as a surrogate for other media, then the evidence suggests that it will have very restricted value and not survive in other than a very limited way. This is summed up by Phelps et al when they say "in short, if CMC is not an integral part of a course, it will be under-utilized, if it is used at all" (1991,p.7-19).

7.7. Summary.

The term CMC can mean different things to different people. This chapter has set out the meaning as used within the context of this thesis. It began by putting CMC in the broader context of groupware and then considered the specific description of CMC itself. A brief history of the development of CMC up to the present time was made before two of the best known and contrasting applications of CMC in higher education, The New Jersey Institute of Technology Virtual Classroom and the UK Open University use of CoSy, were described. The major features common to most CMC systems were then described. Finally the application of CMC specifically to postgraduate management education was considered and evaluated against a framework derived by Linda Harasim.

It is the intention of this research to investigate the extent to which the introduction of CMC into some of Henley's distance learning based MBA programmes has been successful in achieving benefits and where it has failed to fulfil its potential, to determine why this might be so, and to identify ways in which its value can be improved.

CHAPTER 8. AIMS OF RESEARCH AND METHODOLOGY.

The objective of this research is to investigate the value of the use of computer mediated communication as a tool to assist in the delivery of distance learning based MBA programmes, to determine the potential for such use in these and other distance learning based MBA programmes, and determine how such potential might be realised. In order to achieve this objective, the experience of Henley Management College is used as a case study. The chapter begins by considering the method of case study and its justification in this application before setting out the study questions and propositions and the detail of the methodology to be adopted. Three different approaches to evaluation are considered from which the method for evaluation to be used in this research is evolved.

8.1. Case Study and its Justification for Use.

In many areas of research the interaction of variables is very complex. Whilst some variables may be directly observable and lend themselves to quantitative analysis, other significant variables do not. It is in these circumstances that the single case study is appropriate as it allows both quantitative and qualitative information to be used to examine a contemporary phenomenon in its real-life context (Waggoner, 1992). Waggoner (1992) describes the benefit of case study as enabling:

"explication of events and occurrences surrounding a case for the more general understandings that may be derived and subjected to further analysis. The information from a case study can, thereby, add to the cumulative knowledge about a class phenomena".

The definition of what actually constitutes case study as a research methodology has often been evasive. However,

Merriam (1988,p.16) defines a qualitative case study as "an intensive, holistic description of a single entity, phenomenon, or social unit."

Yin (1990, p.23) takes this definition further when he describes it as "an empirical inquiry that:

- investigates a contemporary phenomenon within its real-life context; when
- the boundaries between phenomenon and context are not clearly evident; and in which
- multiple sources of evidence are used."

This thesis sets out to investigate the use of a specific CMC system and all its aspects within the context of distance learning based MBA programmes at Henley Management College in which the boundaries between the CMC system itself and its use, and the MBA programme delivery as a whole, are far from clear. In order to undertake this inquiry, various forms of evidence are used.

Case study methodology is only one of a number of ways in which social science research may be undertaken. Yin (1990,p.13) describes each way as having "peculiar advantages and disadvantages". He continues that:

"case studies are the preferred strategy when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real life context."

He also emphasises that the methodology is to be used to expand and generalise theories and not to enumerate frequencies. It is the intention of this thesis to investigate and develop theories as to how CMC may best be used to advantage within a specific educational environment by focussing on a unique case of its application where the investigator had limited control over many of the major influencing factors.

Merriam (1988,p.3) supports this use of the case study method particularly for applications within education when she identifies that, "most case studies in education are qualitative and hypothesis-generating, rather than quantitative and hypothesis testing", and goes on to say that "case study research, and in particular qualitative case study, is an ideal design for understanding and interpreting observations of educational phenomena".

The argument for use of case study method in these circumstances is again supported by Gill and Johnson (1991,p.119) who say "theory-building, case study research may perhaps be most appropriate when little is known about a topic and where in consequence there can be little reliance on the literature or previous empirical evidence".

Further support for this approach comes from Mason (1989,p.89) whose study adopted this methodology and who states "qualitative case studies are predisposed to building theory, using inductive rather than deductive modes of thinking and analysis of data, and hence are more appropriate in a new field where testable theories do not yet exist". She goes on to quote Rice (1984,p.57) who, referring to the use of case study methodology in CMC research says:

"It is entirely appropriate and necessary for evaluation of new media to consist of or include case studies. Critics of this approach argue that the results, which are rich in process and contingency analysis, cannot be generalised to other instances of new media use. In reply, it can be said that we have as yet little understanding of the process by which individuals and organisations adopt, use and respond to communication systems, so that work needs to be done to establish the range of possibilities, identify problems with variable definition and data collection, develop standards for later comparison, and develop theory that can be tested in subsequent replications".

The special features that give value to case study research can also provide opposition to its acceptance as a methodology of equal status with other methodologies. The

specific issues that can be construed as weaknesses with the methodology are summarised by Yin (1990,p.21,22) under three categories:

1. Lack of rigour of case study research. It is possible for the investigator to be lax and allow biased or preconceived views to influence the findings of the study. However, as Yin points out, this is also equally true of other research strategies. Guba and Lincoln (1981,p.378) take this issue a stage further and warn of the danger of unethical researchers when they say "an unethical case writer could so select from among available data that virtually anything he wished could be illustrated". Whilst this is a very real danger and a valid criticism of the methodology, it is not unique to case study. As Yin (1990) points out "the problems are not different, but in case study research, they have been less frequently documented and addressed".

2. Little basis for scientific generalisation. It can be argued that it is not possible to generalise from a single case. This is quite true. Nevertheless, this is also true of a single case experiment. The fundamental principle that needs to be strictly adhered to is that single case study methodology is not generalisable to populations or universes, but to theoretical propositions, ie analytical generalisation. As Merriam reminds us in this context, "rather than applying statistical notions of generalisability to case studies, one should develop an understanding of generalisation that is congruent with the basic philosophy of qualitative enquiry".

3. They take too long to conduct and can lead to massive unreadable reports. The danger is that given the difficulty in defining the boundaries of the study and the range of variables, many uncontrollable, that the study may be ill defined and ramble into unnecessary areas thus blurring the focus on the major issues. Yin (1990,p.21) suggests that this criticism is often made against the misunderstanding of the conduct of case study research, and that if the process is conducted correctly then there should be no grounds for this complaint.

The subject under investigation in this thesis is that of the use of CMC within distance learning MBA programmes at Henley Management College. To date the use of the system has been in an exploratory mode in order to see how it may best be used to support students on the programmes and in what ways it can create added value to the programmes. By its very nature this subject is affected by the complex interaction between various aspects of the whole process such as the students, the course materials, the College administration and tutors, and the CMC system itself. Whilst some variables are easily measurable, eg the actual student usage of the system, and lend themselves to quantitative analysis, many other significant variables do not and require a qualitative approach. As is indicated subsequently in this chapter, various forms of evidence are used in this thesis of both qualitative and quantitative nature.

It could be argued that the use of CMC is not new and that evaluation methodology of such systems has been developing through numerous studies since Turoff's first system in 1971. However, the nature of different systems varies considerably as does their mode of use. In this application many of the issues relate to peer interaction and the responsibility of membership of teams to create this interaction. Associated with this are issues relating to tutor involvement and leadership from both tutors and students. Not least in importance are issues relating to the emphasis placed on the importance of the role of the system within the overall programmes and the way in which its use is encouraged. Few, if any, studies have been undertaken to address this combination of issues within a similar environment, but in addition, the users of the system in this study are post-graduate and experienced managers undertaking an advanced management training programme. Again little research has been documented concerning this type of user.

It is not the intention of this thesis to test existing theory but rather, building upon existing theory, to explore the events and occurrences surrounding the case so that more general understandings may be derived that can be subjected to further analysis thus adding to the cumulative knowledge about the use of CMC within distance learning based MBA

programmes (Waggoner, 1992). It is on this basis that a single case study approach is justified for the methodology of this thesis. The detailed form of the methodology is described in the remainder of this chapter.

8.2. The Detailed Methodology Adopted.

The basis for the detailed methodology adopted is as developed over a number of years by Robert Yin (1990). This is a structured approach with a clear and logical progression. It consists of five components for a research design.

8.2.1. The Study Question.

It is firstly essential to state clearly and concisely what are the basic questions that the case study sets out to address. These are as follows:

1. How, in this case, is CMC used to develop and encourage peer support and shared learning? If it does not, why not?
2. In what other ways could CMC be utilised to improve this phenomenon?
3. How might these uses be developed/modified/improved to increase the benefits of this phenomenon?

8.2.2. The Study Propositions.

These propositions are required to focus attention onto what is to be examined within the scope of the study.

1. The provision and facilitating of certain CMC activities provides a medium that students will use to enhance the learning process through greater interaction with each other, with tutors and with the course administrators.

2. The nature and degree of the provider's facilitation and support will influence the degree of benefit to students.

8.2.3. The Unit of Analysis.

This aspect attempts to define the boundary of the case and set the limits within which it will be undertaken. The focus will be upon the HELP system itself and not any one nor all the various active parties to the case, ie students, tutors and providers.

The unit of analysis will be the collection of activities available on the HELP system to the three defined groups of students (Inter-Company, Tailored and Open) during the period of January 1990 to February 1994. This implies not only consideration of the system as a whole, but of its constituent activities. Hence the HELP system in its entirety becomes the major unit of analysis, but various activities within it become sub-units. This creates, in Yin's terminology (Yin,1990), a single case design with multiple sub-units. These sub-units may, in some cases e.g. when more than one similar conference exercise are analysed and compared, be multiple-case holistic designs. Thus a multiple-case is embedded in an overall case single design, which Yin describes as a Type 2 Case Study, i.e. single case design with embedded multiple units of analysis.

8.2.4. The Logical Linking of Data to the Propositions and the Criteria for Interpreting the Findings.

The last two components of the research methodology are the method of linking the data to the propositions and the criteria for interpreting the findings. The data will be linked to the propositions by the use of three separate, but linked, methods of analysis, descriptions of which follow in section 8.4.. The criteria for interpreting the findings will be based upon the theory developed within chapters 2 to 7. The objective will be to test the study propositions against the evidence to ascertain whether and in what ways they are substantiated.

8.3. Sources of Data.

Yin (1990) identifies six sources of data. All of these are present in varying degrees in this case.

1. Documentation.

- printed instructions on system requirements/use.
- exercise instructions etc.
- course details/materials etc.
- group constitution documentation etc.

2. Archival Records.

Computer records of:

- system usage by individuals/groups.
- exercise usage by individuals/groups.

3. Interviews/Questionnaires

- pre-use questionnaire
- post-use questionnaire
- individual exercise interview/questionnaire.

4. Direct Observation.

- possible direct observation on the part of the author, particularly of non Inter-Company students and of subject conferences.

5. Participant Observation.

- direct participation of the author as Syndicate tutor within the Inter-Company programme and in certain specific exercises. This form of data collection is common in some fields of study, particularly that of anthropology, but Yin acknowledges its value in other areas such as small groups which is the case in this study. Whilst there are distinct benefits of such involvement by the researcher such as "the ability to perceive reality from 'inside' the case study rather than external to it" (Yin, 1990), it has to be remembered that there can be dangers also, principally

relating to researcher bias. Whilst such bias is a real danger, it should be realised that such bias is generally possible in most forms of research (see also section 8.1.), and thus the danger should not be over exaggerated.

6. Physical Artifacts.

- computer print-out of conference texts.

The use of multiple sources of evidence gives added validity to the methodology, not least in increasing construct validity by providing multiple measures of the same phenomenon. More significantly, it allows a broader range of historical, attitudinal, and observational issues to be addressed and allows "the development of converging lines of inquiry, a process of triangulation" (Yin, 1990).

8.4. The Methods of Analysis.

The analysis will be conducted from three perspectives based upon the models developed by Riel and Levin, Waggoner, and Turoff. These are described in the following sections.

8.4.1. The Riel and Levin Model.

Riel and Levin started from the concept that "participant structures provide a way to compare interaction in different educational settings" (Levin, Kim and Riel, 1990). From this starting point they developed a set of participant structures for examining network interactions which they applied to a number of network communities which in turn lead them to postulate a set of five participant structures that are likely to result in a functioning network community. These are as follows:

- i. A group of people who work together or share interest in a task, but who find it difficult to meet in the same location and/or at the same time. This can be considered in terms of features of the organisation of the network group such as its size, common knowledge,

experiences, or interests, and the physical location of the participants.

- ii. A well-specified task to be accomplished by this group. This relates to the network task organisation, i.e. types of activities that participants engage in over the network.
- iii. Ease of access to a reliable computer network. This relates to the response opportunities that group members experience, ie ease of access to the interaction, including social and technical resources for sending and receiving messages.
- iv. A sense of responsibility to the group and/or task, i.e. the degree of obligation felt by group members to respond to others communications, of both tacit and formal nature.
- v. Strong leadership and final evaluation of the group task. This relates to the extent and nature of the leadership within the group (and in the subject of this thesis, external leadership in the form of a tutor etc.) and an assessment of the quantity and quality of the exchanges on the network.

Riel and Levin's research indicated that for a networking community to succeed it was not essential for all five of these features to be present, indeed many successful networking communities displayed only four. What was also clearly demonstrated was that networking communities that failed to display more than three of these features failed to sustain interaction and failed. The question as to what actually makes a successful network is a complex one, involving as it may comparisons between different modes of tuition, as well as different criteria of measurement by which 'success' may be judged. However, for the purposes of this study, a successful network is defined as one which is continuously used by the majority of its participants throughout the period of its intended existence.

8.4.2. The Waggoner Evaluation Methodology.

Michael Waggoner of the University of Northern Iowa has developed an evaluation methodology for the analysis of the application of computer conferencing systems (Waggoner, 1992).

In this methodology he sets out a four stage process each stage looking at a different aspect of the case in question. These stages he identifies as:

- i. The integration of technical and teaching-social subsystems.
- ii. Member participation analysis.
- iii. Outcome measures analysis.
- iv. Leadership activity analysis.

8.4.2.1. The Integration of Technical and Teaching-social Subsystems.

This is the assessment of the degree to which the five basic elements of a collaborative learning activity which Waggoner describes (see section 5.6.1. above), ie positive interdependence, face-to-face communication translated to a computer mediated medium, individual accountability, interpersonal and small group skills, and group processing, are evident and in what ways they have been employed to adapt the learning process to the computer conferencing medium. Waggoner sees this integration as involving considered judgement by the evaluator supported by data from other aspects of the evaluation methodology.

8.4.2.2. Member Participation Analysis.

There are two strands to this aspect of the analysis. Firstly measures are made of the participation of individuals within the group both in terms of the frequency and duration of contributions. This is quantitative data available from system generated output. Secondly personal accounts from

participants as to how effective the exercise was from their own perspective and judgement. Waggoner also suggests here that, if it were possible to identify each participant's learning style, valuable analysis could be undertaken to help determine effective teaching strategies and methods. Unfortunately it has not been possible in this study to obtain this information, nevertheless it is probably not unreasonable to assume an approximately even spread of the four learning styles within any such group. However, this does suggest an area for further research.

8.4.2.3. Outcome measures analysis.

Any planned group learning activity involving CMC can have its output measured in two aspects. These aspects are firstly from the perspective of knowledge attainment, and secondly the desired effect of the exercise in terms of its design (and that of the system itself) and conduct in order for this to be refined to better effect in subsequent activities. Waggoner suggests that knowledge may be measured by standard educational measures such as examinations, assignments, participation in group discussions etc.. He also acknowledges that assessing the design of the system and the design and conduct of the exercise in terms of their output is a highly subjective exercise, nevertheless one that is important.

8.4.2.4. Leadership Activity Analysis.

Waggoner cites Johnson and Johnson (1975) to support the belief that leadership is a vital element in ensuring success in collaborative group work in face-to-face situations, and cites Kerr (1986) to support the belief that this is equally true in computer mediated exercises. He believes that the best approach to this assessment is by interview with the leader as the leader has greatest understanding about the design and implementation of the particular exercise and also of the group members as a whole.

development through which any group needs to pass in order for the use of CMC to be successful.

8.4.5. Methodology Adopted.

Each of these methods can be seen to have its own particular value and approaches the analysis from a different perspective. The analysis of the case which is the subject of this thesis will be undertaken from each of these three perspectives utilising each of these models, but where necessary modifying the detail to allow for the specific environment of this case. A summary of the major emphasis of each of these three perspectives is shown in figure 8.1. Additionally a longitudinal dimension will be added by utilising the questionnaire data from both the initial questionnaire and the post experience questionnaire.

	Riel & Levin	Waggoner	Turoff
Predictive	x		
Reflective		x	x
Individual focus		x	x
Group focus	x	x	x
System focus	x	x	x
Provider focus			x
Leadership	x	x	
Group development process			x

Fig. 8.1. Comparison of Evaluation Methods.

Firstly an analysis from Riel and Levin's perspective will be undertaken based on the description and definition of the exercise both as it was initially designed to be, but taking note of any changes that occurred as the exercise progressed. This will provide a basis of whether the initial design had the potential to provide a successful exercise, and identifying any major weaknesses.

Secondly an analysis will be undertaken from Waggoner's perspective in order to give a detailed analysis of a broad

selection of the many aspects that go to make up an exercise of this nature. This will provide a means of identifying individual weaknesses and strengths and allow proposals to be put forward to overcome the weaknesses and optimise the strengths.

Finally an analysis will be made based upon Turoff's method. This method is based upon the stages of development through which groups need to go in order to successfully use CMC. However, there is a learning process for both group members and the providing institution, the latter having aspects relating to both the organisation providing the technology and other resources, and the tutors/academic/administrative staff providing and supporting the academic input. Thus it is proposed to adapt Turoff's detail to investigate from two different aspects, firstly that of the participating student group as Turoff initially intended, but adding a preliminary stage of development ie that of acquiring access to the CMC system. This is a stage that Turoff took for granted in his work, but in this case it is not necessarily so for all students and thus may be an issue. The second perspective is from that of the providing institution, in this case Henley Management College. Again this is an aspect that Turoff did not see as being important in his own cases, but in this case could well be so. The nature of the revised model for this method is shown below:

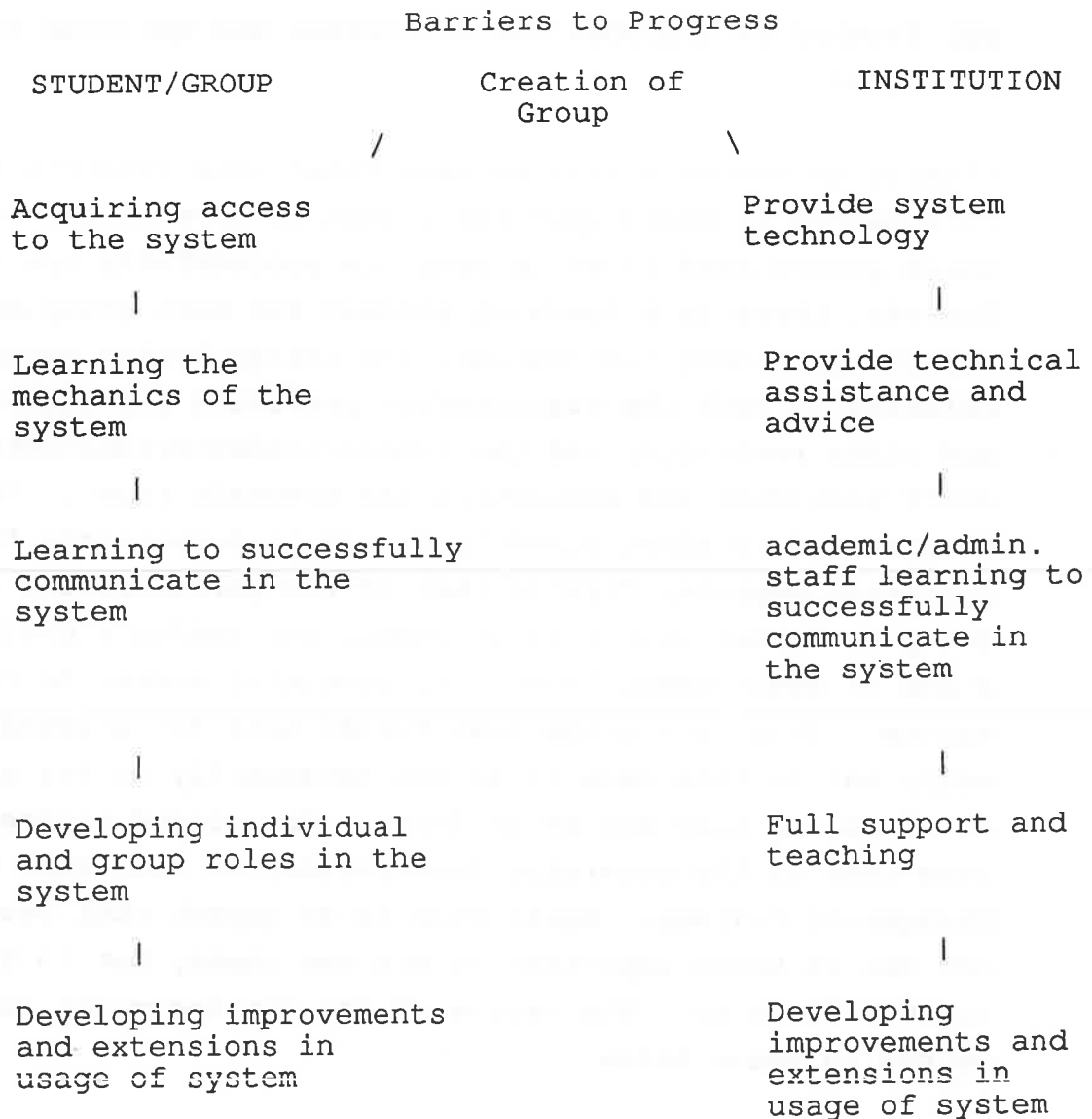


Fig. 8.2. Evaluation Process Based on the Turoff Model.

8.5. Summary.

This research is based upon the single case study approach as advocated by Yin (1990). The chapter begins by justifying this form of research methodology for this study. The detailed methodology to be adopted is then described starting with the statement of the study question and propositions before setting out the sources of data to be used. The analysis is based around three models derived by Riel and Levin, Waggoner, and Turoff, which are then described. Each

approaches the study question from a different perspective
thus creating a comprehensive analysis of the case.

CHAPTER 9. THE HENLEY HELP SYSTEM AND ITS USE WITHIN THE DISTANCE LEARNING BASED MBA PROGRAMME.

The computer mediated communication system used by Henley Management College during the period of this research is known as the HELP system, an acrostic for the Henley Extended Learning Programme. The Help system is considered in this chapter from three aspects, its technical structure, its concept and operation, and its facilities. The Henley distance learning programme is analysed and the three variants of the distance learning MBA programme that form the basis of this research are considered in detail. Finally the differing roles that CMC played within each of these variants of the programme are described.

9.1 The HELP System - Technical Structure.

The HELP system as used by Henley Management College was hosted on a Micro Vax computer at the London premises of Brainstorm Computer Solutions, a small software house with whom the college collaborated to develop the system. The software is a viewdata system based on the UNIX operating system which means that the data is stored and processed in an hierarchical form of frames which are then accessed and displayed interactively via a "tree structure" in Viewdata text as colour graphics. Provided suitable colours are used in the design of each screen, display is also perfectly acceptable in monochrome which is the form in which most students viewed the system. Automatic routing within the database is created and controlled by the system manager, but the individual user has the ability to override this as he requires as he becomes more familiar with the system. Because it is UNIX based, the system is able to have integrated into it a range of UNIX utilities that can be accessed directly from the menu screens.

In order to access and use the system a user requires a computer with a minimum processor specification of 80286 and

one Megabyte of RAM, and an EGA or VGA display. It requires a DOS operating system together with communications software and a modem capable of screen emulation VT100. In order to achieve a satisfactory response rate the modem should be capable of at least a baud rate of 2,400.

The user can access the system via three alternative telecommunications networks. The simplest, but least efficient, is to dial the host computer directly via the Public Switched Telephone Network (PSTN). This route not only requires a long distance telephone call for most users with associated increases in call charges, but the lines are not designed for data transmission and can lead to "line noise" interference causing distortion of data or even complete breakdown of the connection. This can be very frustrating and off-putting to the user. The second route is to use PSTN to access the British Telecom packet switched network, Dialplus. Whilst not totally removing the problems of direct PSTN connection, it does allow local call rates from the vast majority of locations in the UK and greatly reduces the problem of "line noise". The best route is to use a leased data line (which many organisations' computer networks now have) into a packet switched network such as British Telecom's Packet Switch System, PSS. This allows not only a lower call charge rate, but also higher speed transmission over lines designed for data transmission thus significantly reducing problems of "line noise". Users from abroad will have the option of direct PSTN connection, or in most cases, of their own national equivalents of the alternative routes.

9.2. The HELP System - Concept of Operation.

The single most significant operational feature of computer conferencing systems such as HELP that differentiate them from most other mediums is their ability to function in an asynchronous manner. The HELP system is available twenty four hours a day, three hundred and sixty five days a year. The user can connect into the system at any time convenient to himself, receive any messages or contributions left by others since his last visit, have time to reflect and then

make his replies, responses and contributions at his convenience.

On registering each user is allocated a unique user number which restricts him to one or more designated closed user groups within the system. These closed user groups are created and managed by the system manager in order to restrict access to users to those parts of the system where they need to be. This enables the system to be less cluttered and confusing to the user and also enables private groups to function eg tutor only areas or programme specific areas.

Each closed user group can have access to any or all the system facilities. Within each facility each group can have its own private area or can share such areas, or parts of areas, with other designated groups. In this way the system looks similar to all users, whilst restricting entry to only that data to which each user needs access. In this way, for example, tutors can have access to the various student groups for which they are responsible as well as areas for tutor only discussions.

When a user makes contact with the host computer, he is presented with an introductory screen asking for his user number and password. If this is entered correctly, then a personalised welcome screen appears offering him access to any unread incoming mail or access to the main menu, each at the depression of a designated single key.

Login Control	901b	Op
<div style="text-align: center;"> B R A I N S T O R M (c) 1984 Brainstorm Computer Solutions C O M P U T E R . . S O L U T I O N S . I N T E G R A T E D S O F T W A R E . . </div>		
Good evening Edmund Akehurst	<pre> +-----+ Please check the NOTICE BOARD (option 1 on your Main Menu) +-----+ Notice Board - Updated 09-11-93 +-----+ </pre>	
Logged on: Fri Jan 28 18:05:45 1994 You have 1 message - Key 1 to read Please key 0 for the Main Menu		

Fig. 9.1. Introductory Screen.

In order to make the system as user friendly as possible the system is entirely menu driven, that is the user is always prompted on the screen with specific instructions as to how to proceed, or with a list of alternative courses of action to be selected from a menu list. Thus the need for the user to have to remember commands or to have to refer to a look-up sheet or manual is avoided. In this way, although the experienced user can by-pass the menus and speed up the process by using specific commands, the novice has to remember on more than to read the instructions on each screen carefully and respond accordingly.

The main menu presents the user with a choice of nine options most of which in turn give further options. This "tree structured" nature is a feature of viewdata systems in which the user is guided through a hierarchy of menus progressively isolating the specific information required.

```

804000000a Op
HENLEY Extended Learning Programme -- MAIN MENU
*****
INTER-COMPANY - MBA PROGRAMME
*****
*****
** Press <RETURN> to read the Notice Board. Welcome to Syndicate 10 **
*****

1 Notice Board Updated 22-06-93
2 Henley Library Holdings
3 Mailbox and File Options
4 Conferences
5 Administration/Course Information & Henley Helpline (Messages to Staff)
6 Business Information Service (and book ordering)
7 News & Newslink Magazine
8 QUIT from system
9 System control menu & CHANGE PASSWORD (please do this regularly)

*****
Single Key Menu Selection -- Type Number For Required Action
*****

```

Fig. 9.2. Main Menu.

9.3. The HELP System - Description of Facilities.

Facilities have been developed and generally improved over the period that Henley has been operating the system. What follows is a description of the system as it ultimately finished up in January 1994 when it was closed down.

9.3.1. E-Mail.

This is one of the central facilities of the HELP system. It is available to all users across all closed user groups thus allowing unrestricted mail communication. E-mail activities are controlled from a Mail Menu which is accessed directly from the Main Menu.

Mailing System

93a

Op

Electronic MAIL Menu

Electronic Mail

Special Messages

- =====
- 1 Read NEW mail messages
 - 2 Review SAVED messages
 - 3 SEND a message
 - 4 Control MAIL in text files

- =====
- 7 SPECIAL CARDS (Birthday, Christmas,
***** Valentine etc.)

Immediate Messages

Other Facilities

- =====
- 5 Broadcast to all users
 - 6 Send message to single user

- =====
- 8 List of LOGGED-ON users
 - 9 List of ALL registered users

Press 0 for the Main Menu

Press <RETURN> for FILE OPTIONS Menu (includes File Transfer)

Fig. 9.3. Electronic Mail Menu.

Mail from user 4005

77a

Op

Date: Mon Dec 20 07:47:32 1993

(LONDON Mail)

TYPE USER NUMBER: 73
Edmund Akehurst

From: Tom Carey
4005

Subject:

Message:

Dear Edmund,

I wish you a very happy Christmas and New Year.

I hope that house hunting and moving and career will all go well and see you in the new year.

Kindest regards,

Tom

|To SEND press CONTROL-Z
|To QUIT type * 0 (RETURN)
|For HELP press CONTROL-V

Reply to message [Y/N] ?Y

Fig. 9.4. Typical Mail Message.

On selecting the option to "send a message" the user is presented with a screen which already contains the sender's name and user number, and asks for the recipient's user number to be entered. If the user does not know the number to whom he wishes to send the message, the system has a routine available which will give this information on entering the appropriate user's name, although this is a somewhat longwinded process and a system weakness. Additionally a message can be sent to all members of any closed user group to which the sender has access. Each message has the facility for a single line heading and up to 15 lines of free format text. Continuation pages are not possible except as separate messages. The only editing available is backspacing to allow overwriting. On completion of the message the user has various options, to send or not to send, to copy to one or more other users, to save to his own saved mail file or to write to a database file. If the user wants to print out hard copies of a number of mail messages or to keep a large number of messages for record purposes then a database file is useful.

The number of unread incoming messages is indicated on the initial welcome screen when the user logs into the system with an instruction as to how to optionally inspect this mail with a single key depression. Alternatively, it can be accessed via the New Mail option on the Mail menu. Having read incoming mail, the user has the option to delete the message, save the message to his saved mail file, copy the message to other users or to write to a database file. Saved mail is stored as a separate file accessible via an option on the Mail menu. If messages are written to the database file, this can then be down loaded to the users local computer for reading or local storage. Mail on both the unread incoming mail queue and the saved message queue is stored in time order and can only be accessed sequentially. There is also no overview of senders names or of message headers to allow the user to see at a glance what mail he has which means that the user has to access every message without being able to check priorities.

In addition to normal e-mail, users have the ability to create files of data and/or text and send these to each other in a similar way to e-mail. This facility is controlled from the File menu. The major drawback with this facility is that when a file is sent the recipient is not automatically notified of its arrival by the system thus requiring the sender to also send an e-mail to inform the recipient. File handling is controlled from a continuation menu from the e-mail menu. It allows files to be created off-line and then up loaded into HELP, or created in HELP eg mail or conference text and then down loaded to the users local computer. This allows the user to undertake any time consuming work off-line without the concern of accumulating expensive telephone bills. Unlike e-mail, the user can inspect a listing of all the files he holds on his file queue and select which he wishes to access independently of its position in the queue.

Personal Files and File Transfer

~~~~~

Please select one of the following options by menu number :-

- 1 - List the files in your directory
- 2 - View files in your directory
- 3 - Rename files in your directory
- 4 - Delete files from your directory
- 5 - Edit files in your directory
- 6 - Copy files from your directory to another user
- 7 - File upload and download operations
- 8 - Mail handling operations

9 - Quit, finish user file session

Option number or letter:

Fig. 9.5. File Menu.

### 9.3.2. Conferences.

Conferences are accessed via a Conference menu which is found by selecting an appropriate option on the Main menu.

|                                               |        |    |
|-----------------------------------------------|--------|----|
| Inter-Company MBA                             | 80443a | Op |
| Inter-Company MBA Conferences<br>*****        |        |    |
| Press 0 for Main Menu                         |        |    |
| Press 1 for -- Dissertation Blues.            |        |    |
| Press 2 for -- syndicate 10 strategy          |        |    |
| Press 3 for -- syndicate 6                    |        |    |
| Press 4 for -- Syndicate 7 Operations         |        |    |
| Press 5 for -- Syndicate 8 Conference         |        |    |
| Press 6 for -- Mging Strategic Change GR1SYN3 |        |    |
| Press 9 for Conference Selection Menu         |        |    |
| Press RETURN to continue                      |        |    |

Fig. 9.6. Typical User Group Conference Menu.

Within the HELP system a conference consists of a single sequential file of contributions. Each contribution is automatically prefixed with the contributor's name and date/time of contribution. The user can access the conference at any time, read the contributions since his last visit, consider them at leisure and then make his response. This highlights one major practical difference between the functioning of a computer conference and a face-to-face meeting in that each user has time to reflect at leisure without fear of the debate leaving him behind. As a result, less confident and less extrovert participants have a greater chance to contribute positively than they might in a face-to-face situation thus increasing the richness of the debate.

Reading a conference is an easy process, but can be time consuming if the conference is large. The conference is displayed as a series of screens or pages each containing three sections or windows. The largest section contains the existing conference text, a smaller section at the bottom of the screen is available to receive the user's new contribution, and a third small section gives specific

command instructions for moving around the conference and performing other functions.

```
-----
|### Text from 'Philip Cullen' on Thu Jan 20 11:08 ###      (continued ...) |
|      : Good luck Guys though I'm sure you do not need it. |
|      : Who's a star then Kevin. I saw you on the box.    |
|### Text from 'Kevin Prior' on Thu Jan 20 19:21 ###        |
|      : even me mam saw me but I haven't yet more star apperances |
|      : to come on breakfast news and local tv            |
|      : guest apperance at henley in may?                  |
|### Text from 'Cliff Howard' on Tue Jan 25 21:33 ###       |
|      : I too hope to see you all in May. I got my dissertation in |
|      : last Tuesday (18th Jan) which I am told should be okay for |
|      : congregation in May assuming it is accepted. Edmund tells |
|      : me that Keith Holder got his in the day before. Mine made  |
|      : 8 in total for syndicate 3 and they weren't expecting any  |
|      : more in time for May. I realise that no-one may see this   |
|      : entry since the whole system is due to shut down at the end |
|-----|
|      Status          |Congratulations to you all. Those of you who have yet to |
|      -----         |complete your dissertations, I expect to see at Henley in |
| reviewing 116        |May 1995! |
| CTRL-V for help     |
| CTRL-D to quit      |
|-----|
```

Fig. 9.7. Typical Conference Text.

On entering a conference the user is taken directly to the last screen of text. It is possible to move backwards and forwards one screen at a time, to move directly to the start or finish of a conference, to move directly to a specific screen number, to search backwards for a particular character string in the text or to move directly to the user's own last contribution.

```

|
|CTRL-G - Call a named user in HELP.
|CTRL-L - Redraw the screen.
|CTRL-U - Get the names of the users currently connected or in HELP.
|CTRL-W - Get the names of the unconnected users currently in HELP.
|CTRL-X - Get the names of the users currently connected.
|CTRL-R - Report the page numbers of a specified word pattern.
|CTRL-P - Jump direct to a specified page in the conference.
|CTRL-O - Jump to last entry you made in the conference.
|CTRL-D - Clear the conference connection (quit).
|CTRL-B - Page back examining conference session.
|CTRL-F - Page forward examining conference session.
|CTRL-T - Move to start of conference session.
|CTRL-E - Move to end of conference session.
|
|-----|
|  Status      |Press <RETURN> to continue conference,
|  -----    |or give one of the commands listed.
| conference   |
| CTRL-V for help |
| CTRL-D to quit |
|-----|

```

Fig. 9.8. Conference Help Screen.

To make a contribution, the user simply keys in his text and it appears in the contribution section where it remains until either the box overflows or until the user presses the return key when, in both cases, it is automatically entered into the conference. As long as the text remains in the contribution section of the screen the user has available a crude degree of word processing facilities to enable contributions to be edited. Once text is entered into the main body of the conference it cannot be edited except by the System Manager. This is to prevent individuals either deliberately corrupting text, or with the best intentions, trying to tidy it up and inadvertently change its meaning.

In addition to reading the conference "live" on screen, the user has several alternative courses of action available from the specific conference menu.

Conference -- Syndicate 7 Operations

\*\*\*\*\*

Manager -- (689) Karen Gilkes

Press 0 -- Main System Menu

Press 5 -- Shutdown & erase conference

Press 6 -- Make conference log file

Press 7 -- Show conference status - Last usage / who's on

Press 9 -- Return to Inter-Company MBA Conferences Menu

Press RETURN to join this conference

Fig. 9.9. Specific Conference Menu.

When entering a large existing conference for the first time, or if there have been many contributions since the user's last access, it is possible to convert the conference text into a log file which then appears in the users file queue. From there it can be down loaded to his local computer and either be printed out or loaded into a local word processing package to read on-screen. If the user wishes, he can then compile his response locally in a separate word processor file before dialling back into HELP where he can then up load it directly into the conference. This has the definite advantage of allowing the user to minimise telephone costs which will reduce the anxiety of need for speed and allow greater freedom of time for thinking and reflection.

It is possible for a user to check what activity has taken place in a conference without having to enter it by accessing a conference status facility. This interrogates the conference and displays information including the current length of the conference in terms of number of screens and, regarding each user who has accessed the conference, when they last accessed the conference and when they made their last contribution. This allows the user to judge whether it

is necessary to take time to enter the conference at the current time. It also indicates users who have only read the conference and have not contributed. This practice is commonly referred to as "lurking". In a face-to-face situation this is not a problem as it is clear to all participants who is actually present and listening to the discussion even if they do not contribute verbally. In a computer conferencing environment those who only "listen" and do not contribute are unseen and can easily not be noticed. For them as individuals their silent participation can be of value but unknown to those who are active participants.

| Status report for conference 'tshop-syn3gp4'                                           |                 |                   |                   |
|----------------------------------------------------------------------------------------|-----------------|-------------------|-------------------|
| (Created Apr 4 14:37 1991)                                                             |                 |                   |                   |
| 1466 lines of text in 105 pages                                                        |                 |                   |                   |
| UID                                                                                    | User Name       | Last Connected    | Last Entry        |
| =====                                                                                  |                 |                   |                   |
| 73                                                                                     | Edmund Akehurst | Nov 20 22:36 1993 | Nov 20 22:38 1993 |
| 78                                                                                     | Derek Anderson  | Nov 30 20:04 1993 | Nov 30 20:08 1993 |
| 838                                                                                    | Kevin Prior     | Dec 13 19:41 1993 | Dec 13 19:45 1993 |
| 192                                                                                    | Philip Cullen   | Dec 17 12:49 1993 | Dec 17 12:50 1993 |
| 443                                                                                    | Cliff Howard    | Dec 19 14:37 1993 | Dec 19 14:42 1993 |
| 664                                                                                    | Brian Middleton | Dec 21 10:04 1993 | Dec 21 10:08 1993 |
| 207                                                                                    | Colin Davidson  | Dec 21 19:25 1993 | Dec 21 19:29 1993 |
| 944                                                                                    | Robert Rutledge | Dec 21 20:26 1993 | Mar 10 16:42 1993 |
| A User ID shown as '???' means that the user is<br>no longer registered on the system. |                 |                   |                   |
| End of display; press any key to continue                                              |                 |                   |                   |

Fig. 9.10. Conference Status Report.

Every user has the authorisation to open a conference for any use that he chooses. Opening a conference is a simple matter of selecting clear options from a menu. Once the user has opened a conference he becomes the conference manager and, other than the System Manager, he is the only user who has authority to delete the conference. This gives the user, or groups of users, the freedom to use the conferencing facility to instigate debate and discussion as they feel useful without the need to ask for help or approval. There have been several instances where groups of students on distance learning based MBA programmes have used such a conference as



a medium for maintaining communication with each other. Such communication has been used for mutual support for specific aspects of study and group working as well as providing a means of dispelling the common sense among such students of isolation and disillusionment which can in turn lead to a failure to keep up with the scheduled workload, and ultimately lead to dropout. One such Henley group conference ran with little tutor support for over three years and only ceased to function when all the members graduated.

|                                                         |       |    |
|---------------------------------------------------------|-------|----|
| Inter-Company MBA                                       | 8044a | Op |
| Conferencing Main Menu                                  |       |    |
| *****                                                   |       |    |
| Press 0 - Main Menu                                     |       |    |
| Press 1 - CREATE a Conference                           |       |    |
| Press 2 - REMOVE a Conference                           |       |    |
| Press 3 - LIST of Conferences                           |       |    |
| Press 5 - MBA TUTORIALS                                 |       |    |
| Press 6 - International Business Mgmt Elective Tutorial |       |    |
| Press 7 - Coffee Room Conference                        |       |    |

Fig. 9.11. Conferencing Main Menu

Clearly, this facility can be used on distance learning programmes in a number of ways other than simply student generated discussions. Henley have developed a number of such applications:

#### 1. Subject tutorials.

Henley's distance learning Diploma and MBA programmes are based around a modular concept with a number of discrete subject based modules each of which contain separate assessment. The course material for these modules contains Henley produced workbooks which guide the student through the course content and indicate the relevant sections of the accompanying course text book. In addition either a written

assignment is introduced that the student is obliged to complete, or an examination is introduced that will form the assessment for this particular part of the overall programme. Students do have access to a telephone based helpline service, but this will usually take 24 hours to get a response from a tutor. Within the HELP system a series of subject based conferences were set up, each managed by a subject specialist, with the intention of developing a growing source of instant help for the student. When a student has a particular problem, he can look into the relevant tutorial conference and may well find the answer that he requires already there. If not, he can ask the question and will get a reply not only from the subject tutor, but also maybe from a fellow student. Not only does this answer the specific question, but it allows the development of a broader discussion around the issue involving a wider range of perspectives than would be possible by means of conventional communication thus enriching the learning process.

## 2. Case Study.

A major feature of any Henley programme is the prominent role played by the use of case studies. In a face-to-face situation this leads to much interaction between students and a sharing of their wide and extensive experiences. Historically in a distance learning environment this feature of learning from shared experiences has been substantially missing. Using the HELP system as the medium, Henley has run a number of conferences with discrete groups of students to specifically analyse and study a case, either from the course material or, related to the particular point in the programme currently relevant to the students. Such an exercise would be lead by an academic tutor who would typically guide the group through the exercise whilst leaving the students to undertake the actual analysis. The exercise would typically end with the tutor introducing one or more questions to which the students would then use the conference medium to prepare a collective answer. In some instances this would be followed up where possible with a plenary at a subsequent face-to-face workshop.

### 3. Group Work.

In addition to the informal group working conferences mentioned above, groups of students have used the facility to undertake specific group based tasks that they have either been set as part of the course, or self-generated as part of their mutual support of the learning process.

### 4. Specialist Topic.

Successful conferences have been run to provide a detailed and in depth investigation into a specific area of general interest. Such conferences would typically be lead by an expert in the topic area who would introduce the subject and pose questions for the participants to debate. Such an audience would typically contain many students who often have a wealth of experience to share, but might also contain a number of interested academics and others who not only have an interest in what they can learn from the debate, but also have an invaluable wealth of experience to add to the debate. Thus such an exercise can bring together a wide range of contributors that will lead to a very rich debate.

### 5. Coffee Room.

In any academic institution, as with most workplaces, the coffee break not only has a significant social role to play, but also provides a medium for the informal exchange of ideas and feelings that would not take place through any other medium. The HELP system has had an ongoing conference running throughout its period of operation to meet this need. Called the Coffee Room, this conference has provided a forum for students and staff to chat about any and everything from light hearted banter including an impromptu joke competition, to serious discussion about course content and about problems and weaknesses with the HELP system itself.

### 6. Technical Support.

In any technical application like computer mediated communication where each user has the possibility of a range of equipment and supporting software, it is inevitable that individuals will experience technical problems from time to time. These may either be in terms of gaining access to the system or in using the system itself. A conference staffed by one or more technical experts provides a means of creating

a forum for the collection of common, and not so common, problems that have been encountered together with suggested solutions. Additionally, it provides the remote user with quick and easy access to help when problems are encountered.

### 9.3.3. Library Services.

This facility, available via the Main menu, has provided instant access to various Henley library catalogue information such as periodical holdings, company report holdings, public bodies report holdings and library acquisitions. Had the system continued it would have had access to the new on-line library catalogue system and could have been linked to the borrowing facility, but as the library is only available to distance learning students on a reference basis this facility was not developed.

|                                               |                                          |               |
|-----------------------------------------------|------------------------------------------|---------------|
| Library Holdings                              | 810005400a                               | Op            |
| Henley - The Management College               |                                          |               |
| *****                                         |                                          |               |
| UPDATED : November 1992      LIBRARY HOLDINGS |                                          |               |
| *****                                         |                                          |               |
| Press 0 for the Main Menu                     |                                          |               |
|                                               |                                          |               |
| Press 1                                       | - Periodical Holdings                    |               |
| Press 2                                       | - Company Report Holdings (UK)           | (36 screens)  |
| Press 3                                       | - Company Report Holdings (European)     | (12 screens)  |
| Press 4                                       | - Company Report Holdings (Non-European) | ( 9 screens)  |
|                                               |                                          |               |
| Press 6                                       | - Public Bodies Report Holdings (UK)     | ( 7 screens)  |
|                                               |                                          |               |
| Press 8                                       | - Send Message to the Librarian          | (Gail Thomas) |

Fig. 9.12. Library Menu.

#### 9.3.4. Course Information.

For a distance learning based programme, particularly where students are grouped to work together and where frequent administrative communication is required, the HELP system can be used as a major source of administrative communication. To this end the programme administrators maintain a data base information system. This is accessed by the user through a hierarchical series of menus. It contains such information as:

- workshop and examination dates and automatic booking forms.
- past examination papers and examiners reports.
- scheduled programme time-tables.
- submission dates for course work.
- lists of students together with their own submitted personal profiles.
- details of tutors and means of automatically routing e-mail messages to them and other specific staff.
- additional suggested reading lists.
- advice on undertaking assessed work.

```
Inter-Company MBA                                804510000a  Op

Inter Co. Prog Tailored MBA
*****

Press 0 for Inter Co. Prog Main Menu

Press 1 - General Course Information
Press 2 - The Henley Help Line
Press 3 - Workshops
Press 4 - Examinations
Press 5 - Assignments
Press 7 - Managing People Reading List
Press 8 - Course Members Details
Press 9 - Administrative Information Menu
```

Fig. 9.13. User Group Administration Menu.

### 9.3.5. News.

Contained within the system and accessible via the main menu is a bulletin board facility that is used for the conveyance of information of all kinds from information relating to modifications to the system itself and any operational problems that can be expected, to modifications in the course structure. It is also utilised to provide an update on college affairs generally and includes the text of the latest version of the college magazine, Newslink. This is used as a means of communicating any information on any subject that is of value to any user on the system.

|                                                                                     |      |    |
|-------------------------------------------------------------------------------------|------|----|
| Newslink Magazine                                                                   | 800a | 0p |
| HENLEY Information -- Main Menu                                                     |      |    |
| *****                                                                               |      |    |
| Press 0 for Main Menu                                                               |      |    |
| Press 1 for -- Newslink Magazines Menu (Updated 5.10.92)                            |      |    |
| Press 2 for -- Notice Board                                                         |      |    |
| Press 3 for -- Read Two Interesting Documents<br>(The author is Professor Birchall) |      |    |

Fig. 9.14. Information Menu.

### 9.3.6. Business Information Service.

The HELP system can be used as a gateway to connect to other computer-based services and also to an electronic book ordering service. This gives the users the option from their own computer to directly access commercial databases for which they would find it prohibitively expensive to make direct connection. These facilities not only require the purchase of a licence to access, but a high connect time charge for use. This is the only facility on the HELP system for which the user is charged.

## BUSINESS INFORMATION SERVICES

\*\*\*\*\*

Press 0 for the MAIN MENU.

Press 1 - Profile - The F.T. Business Information Service

Press 2 - Kompas - Company Information

Press 3 - ECHO - (European Community Host Organisation)

Press 7 - HERMES - Government Daily Press releases

Press 9 - BOOKS - Henley Book Ordering Service

Fig. 9.15. Business Information Services Menu.

To interrogate such a database typically requires the compilation of a search request that is often complex to undertake and, to the inexperienced user, can be full of pitfalls. The HELP system has a front end system to help the user compile this search request through a series of questions and answers before accessing the remote database. Not only does this help to ensure that the user obtains the information that he really intends, but it also minimises the database connect time and hence the charge. The results of the search are stored as a file in the user's personal file area.

The HELP system gives access to four databases:

1. Profile.

This is a Financial Times Business Information Service that gives access to business information articles from the serious press.

2. Kompas.

This is an on-line version of the well known company information service.

3. Hermes.

The Government Daily Press Release database listing all releases that are being made and giving the option to download the text.

4. ECHO.

The European Commission Host Organisation aims to encourage the use of electronic information services and offers access to a wide range of information services.

9.4. The Organisation and Delivery of the Distance Learning Based MBA Programmes at Henley Management College.

Whilst it was to draw extensively from the experience gained from the successful delivery of face-to-face programmes, Henley determined that the basis of the distance learning programme was to be the establishment of a programme specifically designed for distance learning delivery and not, as is the case with some providers, to simply provide a version of a face-to-face programme that could be studied without attendance.

9.4.1. The General Structure of the Programmes.

The structure of the course is that students study a number of discrete course modules on specific management topics which together cover the required range of management topics needed to complete an MBA programme. These modules are grouped into three stages of study. In stage one all the modules are assessed by written assignment with the stage culminating in a Management Project or case study based examination. Both of these aim to assess the application of the course content of the stage to the practical business environment. The form of this assessment for each programme is determined by the relevant programme manager. The second stage consists of three modules which concentrate on the strategic aspect of management with the first two being assessed by written assignment and the third, Managing



Strategy, being assessed by a case study based examination. The third stage consists of an elective module chosen by the student from a range of options and assessed by written assignment, and a practical consultancy style project. This project also forms part of the final Dissertation that each student is required to undertake.

Whilst the principal nature of the structure of the distance learning based MBA programmes has not changed since its inception, the detail has evolved through several versions of development. The above description was of the version that was current throughout the majority of the period of this study. The exception to this concerned Syndicates 1 and 2 of the Inter-Company programme. For Syndicate 1, stages one and two were combined with three modules (in addition to Managing Strategy) being assessed by examination; additionally there was no Management Project. Syndicate 2's only difference from the revised version was that one of the stage one modules was assessed by written examination instead of assignment.

#### 9.4.2. The Form of Delivery of the Programmes.

Each module consists of a specially written and produced set of workbooks and audio tapes together, in some cases, with specially produced video material. The pack also includes the basic text books and other reading material. In the expectation that students would be drawn from a worldwide market, it was an initial criteria that a student could if necessary study the module and complete it without need to further reference beyond that contained in the pack. However, such student isolation was not seen as desirable. In order to reduce such isolation all students are offered an initial workshop of one or two days (depending on programme) to introduce them to the college and the course. Additionally each module has a single day workshop to allow students to meet each other and Henley staff. These workshops are not intended to teach the module content, but to consolidate the learning contained within the pack and also to give the students an opportunity to discuss with peers and tutors issues and problems arising from learning at

a distance. Additionally students are encouraged to form peer groups among themselves. An additional objective of the workshops is to help students to feel part of the wider Henley organisation and not simply isolated individuals.

During the period in which this study was undertaken, tutor support to students was provided in various ways:

- i. For each module there was a telephone helpline available. To make use of this students had to make a telephone request to Henley (a 24 hour answerphone was available out of office hours) and the administrator would arrange for a subject tutor to contact the student by telephone usually within twenty four hours.
- ii. Each student assignment was marked by a tutor who also gave written feedback intended to help the student to see where the assignment could have been improved, highlighting and helping explain any perceived areas of weakness in understanding, and assisting with the learning process.
- iii. For both the Management Project and the Dissertation, each student would be allocated a specific tutor who would be available to assist the student. This help generally consisted of written feedback on proposal, drafts and final report submissions, but also telephone consultations when necessary.

It was against this background that the HELP system was introduced as a means of enhancing and developing the contact between students, between students and tutors, and between students and programme administrators.

#### 9.5. The Three Variants of the Distance Learning MBA Programmes under study.

In step with the evolution of the content and structure of the distance learning programme has been a development of the target markets for potential students. This has lead to segmentation of the potential market and the development of

different variants of delivery to maximise the potential of each market sector. For the purposes of this study the three major variants of the programme that have all incorporated use of the HELP system have been considered. These are the Open Distance Learning Programme, the Tailored (or Company) Programme and the Inter-Company Programme.

#### 9.5.1. The Open Distance Learning Programme.

This is the general programme that is intended for individual student applications either with or without employer support. It was the first variant of the programme and remains the largest in terms of number of students enrolling.

Students were able to enrol and start studying at any time during the year. On successful completion of the first module students were allocated to a cohort of students who were currently ready to continue with the remainder of the programme. Students were able to opt to join either the standard programme scheduled to take three and a half years, or the accelerated programme scheduled to take two years. However, there was no compulsion for students to keep to schedule and no absolute deadlines were set (except for an overall registration period prescribed by Brunel University). Students were allowed to attend workshops at their own discretion at any time one was available. Thus membership of any cohort would, in most cases, quickly become spread out over the course making peer support very difficult.

Each cohort was allocated an administrator whose task was to monitor the progress of all members of the cohort and to proactively support and encourage each student.

#### 9.5.2. The Tailored (or Company) Programme.

To meet the growing demand for MBA programmes from corporate sponsors the concept of a Tailored MBA by distance learning was devised. The concept was that a company would nominate sufficient applicants to create a self-contained cohort. These students would then study together as a discrete group

for a scheduled three years, working through the standard distance learning package (or possibly with some company defined variants - although this was not the case in the groups involved in this study).

Within the cohort students would be encouraged to support each other in the studying and preparation of assignments which would be based upon practical situations within the sponsoring organisation. Workshops were usually held at different company locations or at Henley, and on different days. Students could select which they would like to attend irrespective of the venue. Thus students could be exposed to different company environments. This had the adverse effect that students did not meet with their own cohort members regularly thus reducing the development of group identity and peer support. Workshops would often include some company input to supplement the Henley tutoring and to illustrate practical application of the theory.

To help this process work and to give greater support to the students, the cohort was allocated a cohort tutor whose task was to proactively support and encourage the students both administratively and academically by regular contact by telephone and visit. One cohort tutor would be in attendance at workshops even when not leading the particular session. Additionally each cohort would have a dedicated administrator. These members of Henley staff would have the added important task of being the major link for the student between the sponsoring organisation and the college.

#### 9.5.3. The Inter-Company Programme.

This variant arose out of the Tailored programme to meet the growing demand from potential corporate clients who did not want to sponsor sufficient students to form a separate cohort, or who wanted their students to be exposed to a wider range of business situations and practices. Thus the model was created whereby ideally four or five students from each of four or five organisations were recruited to a single cohort or syndicate. These students were then kept together as a discrete group to work together for the duration of

their programme. The students were divided at the initial workshop into sub-groups of five or six members across their organisational boundaries in order to expose them all to as many organisational varieties as possible by performing group tasks. Within these sub-groups students were also encouraged to help each other with the overall learning process.

Workshops were hosted by the participating organisations in rotation, but each one where possible hosting a subject for which they were ideally suited to provide some practical input to show practical application of the course content. Students were expected to attend all workshops.

Assignments were, in a number of cases, modified from the standard to encourage the students to investigate each others' company circumstances and practices through working within their sub-groups and from the company based workshops.

Each Syndicate was allocated a specific tutor whose role was principally to proactively support and encourage each student by regular telephone contact, by visits where necessary, and by attendance at all workshops. The tutor also actively encouraged the development of Syndicate and sub-group identities by such means as helping to facilitate sub-group meetings and contacts, exchange of information etc.. Each Syndicate also had a specific allocated administrator to help with both the individual student and the Syndicate as a whole with administrative issues.

#### 9.6. The Role of CMC within each Programme.

The fundamental objective of introducing CMC into a distance learning based programme is to improve communications between all parties involved, i.e. students, tutors and administrators. From the student perspective the major objective was to develop the feature of group based learning within the programmes so as to reflect the importance that Henley had always placed on this aspect of delivery of its management programmes. Henley's objectives for group based learning are summarised by Jameson (1991,p.94-97) as follows:

- i. to create peer support groups;
- ii. to generate self facilitating teams;
- iii. to utilise groups as a basis for personal growth;
- iv. to emphasise the element of partnership between  
Henley Management College and the student.

The varying ways in which the development of this, and the broader communication between the three parties concerned, was attempted within each of the three programmes under consideration in this study forms the basis of this investigation.

Historically the Open and Tailored versions of the programme were operating before the HELP system was introduced into Henley. However the Inter-Company version was conceived at the same time as the introduction of the HELP system and thus was designed to incorporate it as far as was possible from the programme's inception. In the case of the Tailored programme the HELP system was incorporated as soon as the system was available, that is at about the same time as the launch of the Inter-Company programme. Whilst the HELP system was made available to students on the Open programme at about the same time, initially less effort was made to integrate it into the programme as a whole.

#### 9.6.1. The HELP System and the Inter-Company Programme.

As has already been said, one of the objectives of the Inter-Company programme was to encourage the development of peer support groups to create mutual support and motivation amongst students, but also to engender a cross-fertilisation of learning and practical application between organisations and individuals.

At the inception of the Inter-Company programme the HELP system was stated by Henley as being compulsory for students. Whilst this was agreed in principle by the sponsoring organisations, this state was never achieved in practice for reasons that will become clear from subsequent survey analysis. Nevertheless its use was actively encouraged and supported by both tutors and administrators and it did play a

significant part within the programme, at least for the early syndicates. The intention was to make students who did not use the system feel as if they were missing out.

Students were introduced to the system at the two day starter workshops attended by all students at the outset of the programme. This included general introduction to the system from a technical perspective, what equipment was needed, how the technical communication could be achieved etc, and how to operate and move around the system itself. This was accompanied by extensive hands on experience including the use of various exercises and introduction to various conferences that were set up for the use of the group as a whole. The syndicate tutor played an active role within this process and subsequently in encouraging activity within the system by the students.

Students were encouraged to set up their own syndicate and sub-group conferences to help with the initial tasks of studying the first study modules and preparing for the assignments. The syndicate tutor played an active part in contributing to these conferences. For most modules a subject conference was set up for each syndicate (sometimes shared with a Tailored cohort that was at the same stage in the programme) in which a subject tutor took a lead and encouraged discussion on topics and issues relevant to the students current studies. This facility was later (from Syndicate 4 onwards) modified to a set of continually running conferences, one for each module, open to all students on all three programmes in which the tutor was no longer proactive in discussion of relevant topics (ie did not attempt to direct the students study) but responded to student queries and problems. Students simply joined in the conference when they started to study the module. As the syndicates progressed further into the course other forms of conference were introduced. Case study based conferences were set up and moderated by tutors where the case study was directly linked to the module currently being studied by students. These were generally only conducted for the first three syndicates. In the case of Syndicate 2 where they had to undertake the Integrated Exam based on a case study, students as a group were lead by a tutor within the context of a

conference to analyse a mock case and then produce answers to exam questions as a preparation for the real exam. In all these exercises that were specific to the Inter-Company programme a major feature was the proactive role of the Syndicate tutor in encouraging and supporting the CMC activities.

Whilst conferencing provided the major element of general interaction E-mail was encouraged, and widely used within the programme, to provide specific communication between individual students, but more specifically between syndicate tutors and students and between administrators and students. Again, particularly with the early syndicates, the administrator maintained a regularly updated information facility of all administrative information relevant to the syndicates. Although not widely used, access to external data bases was available to all syndicates throughout the life of the HELP system although the extent of this facility and its ease of use improved as time passed.

After the first three syndicates the level of Henley staff input to activities on the system was reduced. Whilst syndicate tutors and administrators were always available to respond to e-mail messages, they took less active part in conferences and, other than the subject tutorial conferences available to all programmes, few tutor led conferences were made available.

#### 9.6.2. The HELP System and the Tailored Programme.

The HELP system was introduced into this programme and offered to participating organisations as an option. Two organisations, who had already sponsored two or three previous cohorts on the programme, agreed to adopt it for subsequent cohorts but refused to agree to it being made compulsory for students. A third organisation chose not to adopt the system. However, one of the two organisations did go to great lengths to provide their students access to the HELP system via the company's own computer network to which most of their students would have access from their own desks. Unfortunately this arrangement took some months to



arrange by which time the students were used to the programme without the system.

Other than the aspect of compulsory usage, the system was introduced in much the same way as in the Inter-Company programme and, for the two cohorts included in this study, similar activities and Henley support was given during the first year. After this the level of Henley support dropped to that provided to the Open programme.

#### 9.6.3. The HELP System and the Open Programme.

The HELP system was presented to Open programme students as an option that would allow them to communicate more freely with other students, tutors and administrators. The system was introduced to existing and new students by letter. A brief introduction was given at the one day starter seminars, but no hands-on experience was given and many students did not attend. Very few of the administrative staff or the cohort tutors used the system and, with the exception of the subject tutorial conferences and the occasional conference on a general topic that was available to all users, very little Henley support was given to the use of the facility. Thus students were left to set up their own conferences or communicate with each other by e-mail and to use the general facilities of the system.

#### 9.7. Summary.

This chapter begins the data collection and analysis stage of the study. It consists of two major parts, firstly looking at the HELP system itself and secondly its use within the three variants of the Henley distance learning MBA programme.

Initially the technical structure of the HELP system is described and the means of access by individual students and the system's concepts of operation are explained. The system has six major facilities that are available for the use of students. The nature and operation of each of these are

described and the major uses to which students, tutors and administrators can put them are explained.

The second section begins by describing the form and structure of the distance learning programme before detailing the variations that create the three distinctive versions of the programme. The chapter continues by describing the objectives for the use of the HELP system within the distance learning programme before describing its detailed and differing uses within each of the three variants of the programme.

## CHAPTER 10. THE USER SURVEY.

This chapter sets out the analysis of the main surveys. Initially the system usage data is analysed indicating the different usage patterns and, in particular, identifying Inter-Company syndicates 1-3 as being significantly different from remaining groups. This is followed by an analysis of the pre-use questionnaire and post-use questionnaire data. The chapter is concluded by considering the difference in responses between Inter-Company syndicates 1-3 and other students who are shown to be groups with distinctly different degrees of CMC usage.

### 10.1 The Survey Background.

The HELP system was introduced into Henley in 1988, but it was not until the launch of the Inter-Company MBA programme at the end of 1989 that any effort was made to encourage significant use of the system. This study covers the period from then until the end of 1994 shortly before the HELP system was replaced by Lotus Notes. Over this period, in addition to the Inter-Company MBA programme, the other major users of the HELP system were the Tailored (or Company) MBA programme and the Open Distance Learning MBA programme.

The study concerns the use made by these three programmes of the HELP system. From the Inter-Company programme data was obtained from each of the first eight syndicates. From the Tailored programme two cohorts were chosen. These were Shell 4 and John Brown 3. They began at the start of 1991 and were chosen because they were the first from this programme to seriously adopt the system. From the Open programme the first cohort was selected for specific study. This group also started at about the same time (although the programme had been running for some years without a cohort structure). In order to increase the sample of students from this programme, 22 students who had started a short while before Cohort 1 were selected. These students had been given

similar encouragement to make use of the system as those in Cohort 1.

The main survey consisted of system usage data for all system users that was automatically logged by the host computer, and two questionnaires completed by users. These questionnaires, a pre-use questionnaire and a post-use questionnaire, were distributed to students from each of the three programmes.

The objective of the pre-use questionnaire was to determine users perception of the system and its potential benefits after they had been introduced to it, but before they had had significant experience in using it. The findings from this survey were to be compared with a similar survey, the post-use questionnaire, undertaken (as far as possible with the same students) after they had had the opportunity to use the system extensively for a prolonged period of time. As a means of stratifying the sample of students their record of usage of the system was monitored. In addition to considering the system as a whole, individual aspects of the system and specific uses of the system were investigated to identify the users' perceptions to, and benefits gained from, such aspects and uses.

## 10.2. System Usage Data and Analysis.

### 10.2.1. The Value of System Usage Data.

Care needs to be taken when interpreting system usage data. It is simply a measure of system usage and does not indicate reason or purpose of that use, nor does it measure the value of such usage. However, regular use of the system is a prerequisite to gaining value from the system. It is in that sense, as a qualification for gaining benefit, that this aspect of initial analysis is undertaken. Furthermore, the distinction between actual time logged into the system and the number of times logged into the system does not of itself prove any degree of value achieved by the user, but it can suggest patterns of use that in turn can suggest value gained. What this initial analysis of system usage does

justify is the categorisation of the various groups within subsequent analysis.

#### 10.2.2. The Data Source.

As with most computer mediated communications systems the system itself has capacity for monitoring and recording detailed usage of its facilities.

The following data has been extracted:

- i. Number of accesses and duration by individual users by month.
- ii. Individual conference access and usage by month.
- iii. Text of selected conferences.

#### 10.2.3. Summary of Individual Usage.

Questionnaire data has been obtained from specific groups of students from the three programmes (see chapter 9 for an explanation of the selection of programmes). These are all the Inter-Company syndicates current to the study period ie numbers 1 to 8, John Brown 3 and Shell 4 of the Tailored programme which were the two cohorts in which the HELP system was launched, and Cohort 1 and a selection of other Open programme students who attended two specific workshops. Cohort 1 of the Open programme was the first cohort to be encouraged to use the system. The workshop group was representative of all other Open programme students who were encouraged to use the system. The size of each group and their use of the system over the four years of the study is summarised in the tables 10.1. and 10.2.

|            | No. in<br>Group | No. using<br>System |
|------------|-----------------|---------------------|
| Syn 1.     | 6               | 6                   |
| Syn 2.     | 12              | 12                  |
| Syn 3.     | 26              | 23                  |
| Syn 4.     | 11              | 9                   |
| Syn 5.     | 17              | 9                   |
| Syn 6.     | 18              | 11                  |
| Syn 7.     | 11              | 10                  |
| Syn 8.     | 19              | 10                  |
| John Brown | 4               | 0                   |
| Shell      | 21              | 8                   |
| Cohort 1   | 31              | 9                   |
| Open(w)    | 21              | 5                   |

Table 10.1. Membership of Student Groups.

|            | 1993       |      | 1992       |      | 1991       |      | 1990       |       |
|------------|------------|------|------------|------|------------|------|------------|-------|
|            | Hrs. Login |      | Hrs. Login |      | Hrs. Login |      | Hrs. Login |       |
| Syn 1.     |            |      | 0.8        | 8.7  | 2.3        | 30.7 | 17.0       | 200.0 |
| Syn 2.     | 0.8        | 6.3  | 13.3       | 64.3 | 20.6       | 96.2 | 37.1       | 217.2 |
| Syn 3.     | 6.8        | 32.4 | 7.0        | 32.6 | 15.5       | 62.2 | 22.8       | 109.2 |
| Syn 4.     | 0.2        | 0.8  | 0.5        | 2.7  | 8.6        | 33.2 |            |       |
| Syn 5.     | 0.4        | 2.3  | 0.9        | 4.7  | 1.4        | 9.4  |            |       |
| Syn 6.     | 1.1        | 13.6 | 3.4        | 19.9 |            |      |            |       |
| Syn 7.     | 5.2        | 29.1 | 7.8        | 50.5 |            |      |            |       |
| Syn 8.     | 3.3        | 22.2 | 0.6        | 5.9  |            |      |            |       |
| John Brown | No use     |      |            |      |            |      |            |       |
| Shell      |            |      | 0.6        | 0.1  | 5.8        | 21.7 |            |       |
| Cohort 1   | 0.0        | 0.2  | 1.2        | 7.8  | 5.6        | 25.2 | 1.0        | 4.9   |
| Open(w)    | 0.1        | 0.9  | 1.2        | 9.3  | 2.2        | 12.7 | 0.1        | 0.7   |

NB. Non I/C groups only include users who have used the system.

Table 10.2. Personal Average System Usage Figures Corrected for Non-Use Periods.

Table 10.2 shows the amount of use made of the system by students in each of the student groups. The figures are averaged per student as this gives a more realistic measure of usage than group totals. It should be noted that the figures for the Inter-Company Syndicates are averaged over the total Syndicate membership whereas, because of the much larger proportion of non-users, the figures for the other groups are averaged only over those who have accessed the system.

A clear observation is that, for each student group, usage started at its highest level in the first twelve month period and then decayed. This is as might be expected with an initial novelty factor and also a more intensive usage during a learning phase. After this initial burst each group then settled to a more steady regular level for a further twelve to eighteen months which covered the bulk of the period when the group were studying the core modules and when group working was potentially most active and profitable. In the period beyond that students would be expected to use the facility principally for more specialist activities, eg external databases and communication with individual students or tutors regarding dissertation work etc, or for social contact, eg Coffee Room conference, group conferences and e-mail. Whilst at this time individuals might be expected to use the system intensively for comparatively short periods, average group use might be expected to be lower. The one exception from Table 10.2 relates to Syndicate 8 who started with a very low use quoted for the first year. This is explained by the fact that this period consisted of only two months and, whilst the usage figures in the table are inflated to allow for this, only one student managed to make access to the system in that two month period.

It is significant to note at this point that, in the case of the Inter-Company syndicates, more formalised group work was involved including in most cases group assignments and preparation for group presentations at workshops. It is also interesting to note that this observation shows a similar pattern to the experience with active groupworking in the full-time elements of the Modular MBA programme at Henley. These observations add support to the theory that the

observed decay in use of the HELP system over time is not principally a function of the HELP system itself as a medium, but rather a function of student's perception of the need and value of groupwork over the duration of a course.

Syndicates 1, 2 and 3 of the Inter-Company programme are clearly the major users of the system both in terms of the number of accesses to the system and also the total time connected. Syndicate 7 were the only other group with any significant amount of usage. It is worth noting that this syndicate was the only Inter-Company group outside the first three that had significant syndicate tutor input into CMC although it only had one subject based tutor led conference run for its specific benefit. It is of note that Table 10.3 shows that this syndicate had only two members (18% of group) against 24 (55% of group) from syndicates 1-3 who accessed the system on average more than once a week. This less frequent use of the system would suggest a use of the system in order to keep informed of what might be happening rather than a deliberate effort to contribute and develop interaction. This would add support to the theory that the availability of suitably timed subject-based tutor led conferences are a positive attraction to encourage increased communication via the system.

|            | No. of Students<br>in Group | Number of Users Accessing<br>on Average More Than: |               |
|------------|-----------------------------|----------------------------------------------------|---------------|
|            |                             | Once per Month                                     | Once per Week |
| Syn 1.     | 6                           | 6                                                  | 4             |
| Syn 2.     | 12                          | 12                                                 | 9             |
| Syn 3.     | 26                          | 21                                                 | 11            |
| Syn 4.     | 11                          | 5                                                  | 0             |
| Syn 5.     | 17                          | 1                                                  | 0             |
| Syn 6.     | 18                          | 7                                                  | 1             |
| Syn 7.     | 11                          | 10                                                 | 2             |
| Syn 8.     | 19                          | 7                                                  | 3             |
| John Brown | 11                          | 0                                                  | 0             |
| Shell      | 34                          | 0                                                  | 0             |
| Cohort 1   | 57                          | 3                                                  | 0             |
| Open (w)   | 46                          | 2                                                  | 0             |

Table 10.3. Regular Student Use by Group



This again indicates the extent of use by the first three syndicates of the Inter-Company programme compared to all other groups. Indeed, of the top forty users from all the sample groups measured by total logon hours, 29 are from these three syndicates; and measured by total number of logons, 31 are from these three syndicates.

Considering the proportion of students in each group with significant use, as shown in Table 10.4, also confirms these observations.

|          | Percentage of Users Accessing<br>on Average More Than: |               |
|----------|--------------------------------------------------------|---------------|
|          | Once per Month                                         | Once per Week |
| Syn 1-3  | 89                                                     | 55            |
| Syn 4-8  | 39                                                     | 8             |
| Tailored | 0                                                      | 0             |
| Open     | 5                                                      | 0             |

Table 10.4. Regular Student Use by Group

It is evident from the above that on the basis of system usage there are two distinct groups (i.e. Syndicates 1-3 of the Inter-Company programme, and the rest), with the second group being further sub-divided into remainder of Inter-Company, and non Inter-Company. These groupings will subsequently be used in the analysis of the post-use questionnaire.

### 10.3. Pre-Use Questionnaire.

#### 10.3.1. Background.

The survey was conducted soon after the students had commenced the programme by which time they had had reasonable opportunity to have gained access to the HELP system and to have gained some initial experience in its use. This would have allowed them to have formulated some attitude as to the

system's facilities, its mode of operation and its potential for assisting in the study of the MBA programme. It was expected that a number of those surveyed would not have gained access to the HELP system by the time they were asked to complete the questionnaire. However, even in this case it was hoped that their response would indicate their attitude to the system from what they had heard and also indicate their intention to subsequently make use or not of the system. For those not intending to make use of the system, it was hoped to discover what had led to that decision.

A copy of the questionnaire can be found in Appendix 4.

#### 10.3.2. Population Surveyed.

Three groups of students were surveyed from the three different learning based programmes. These were syndicates 3,4,7 and 8 from the Inter-Company programme (syndicates 1 and 2 were not considered for this survey as they already had significant experience of the system), Shell intake 4 and John Brown intake 3 from the Tailored (or Company) programme, and Cohort 1 from the Open DL MBA programme together with the group of other Open DL MBA students who attended two routine workshops at Henley (nb two of these students subsequently transferred to Syndicate 5 of the Inter-Company programme). These questionnaires were distributed during 1991 and 1992 at the start of the students' programmes at a time when they would have had an opportunity to have gained access to the HELP system, but would have had little experience of its operation or facilities.

|               |              |    |
|---------------|--------------|----|
| Inter-Company | Syndicate 3  | 23 |
|               | Syndicate 4  | 9  |
|               | Syndicate 5  | 2  |
|               | Syndicate 7  | 10 |
|               | Syndicate 8  | 15 |
| Tailored      | Shell 4      | 21 |
|               | John Brown 3 | 4  |
| Open DL MBA   | Cohort 1     | 32 |
|               | Other        | 21 |

Table 10.5. No. of Completed Questionnaires by Programme.

### 10.3.3. Findings from the Survey.

A copy of the questionnaire and the detailed results can be found in Appendix 4. All statistical differences in this analysis have been calculated using the comparison of means test.

#### 10.3.3.1. Personal Computing Experience.

Q4. Of the of students surveyed 71% had their own personal computer at home. Of the remainder a further 7% anticipated acquiring one within 12 months.

| Student Group       | Computer at Home |     |         |
|---------------------|------------------|-----|---------|
|                     | Yes              | No  |         |
| Syndicate 3         | 16               | 2   |         |
| Syndicate 4         | 9                | 5   |         |
| Syndicate 5         | 1                | 1   |         |
| Syndicate 7         | 8                | 2   |         |
| Syndicate 8         | 13               | 2   |         |
| Inter-Company total | 47               | 12  | 80% yes |
| Shell 4             | 14               | 7   |         |
| John Brown 3        | 3                | 1   |         |
| Tailored total      | 17               | 8   | 68% yes |
| Open total          | 32               | 20  | 62% yes |
|                     | ---              | --- |         |
| Total               | 96               | 40  | 71% yes |

Table 10.6. Availability of Computer at Home.

Q5. There is a clear majority of students in each programme who consider the ability to use a personal computer important in their present job. Over the whole programme, 72% consider the ability important with only 17% considering it unimportant.

Q6. The vast majority of all students, 72%, use a computer at least once a day in the course of their normal work. Only 12% use one less than once a week or not at all. This is generally common across all three programmes, although there is a slightly lower usage among Inter-Company students.

Q7. Most students consider they have adequate or better typing skills, 82%, with only 4% having none. The majority have adequate skills in Word Processing (74%) and in Spreadsheets (71%) and in at least one other personal computing application (66%).

The above is clear evidence of a high level of computer usage and literacy across all programmes.

Q8,9. As might be expected from the above findings, the great majority (72%) expect the ability to use personal computers will be important to the future development of their career, but only 57% expect the same ability to be important in the successful completion of their MBA courses.

This would indicate that either Henley do not see the use of computers on the students' part as greatly important in the undertaking of their MBA programme, or that they are not satisfactorily conveying the need.

#### 10.3.3.2. Access to the HELP System.

Q10. Half of the Inter-Company and Tailored students have access available to HELP at work, but only 23% of Open students do so. However, this availability rate changes for access at home. In the Inter-Company programme 63% have such access, whereas for the Tailored programme this figure is 8% and the Open programme is 11%. Of all students only 14% have access available at both home and work, but 59% have access available at one location at least. Again the proportion of Inter-Company is highest with 92% having access available at one location at least, with Tailored 50% and Open only 28%. Of those with no access available in either location when asked how they intended to achieve access, all the remaining Inter-Company students had positive intentions to do so, but

17% of all Tailored students and 42% of all Open students stated that they had no intention of gaining access.

Q11. At the time of responding to the questionnaire, 83% of Inter-Company students, 38% of Tailored students and 23% of Open students had made access to the system. Of these students 51% dialled the host computer via PSTN, 34% used PSS or Dialplus, and 15% used workplace networks. It is noticeable that the majority of those using workplace networks were the Tailored students, many of whom were using the Shell UK network which their organisation had arranged as part of their sponsorship package for the programme. Most students access the system either exclusively at home or exclusively at work. Only 9% use a combination of both. This is not unexpected due to the low level of access at both locations. Of those who do have such access, 72% use both in varying proportions.

Q12. Of the students who have made, or attempted to make, access to the system, 61% experienced problems with telecommunications in connecting to the HELP system. The major problem experienced was that of the direct line to Brainstorm being engaged or not responding. This was claimed by 65% of those experiencing problems. This shows that it is essential to ensure that there are ample lines available to the host computer and that the host computer has adequate capacity to handle peak user demands if users are not to be put off using the system because of frustration and delays in gaining access. It is also noticeable that there was a greater degree of difficulty of access for those accessing via PSTN. This was generally an attractive option for students as it was easier to obtain and, for those in the London area, cheaper to use. This does indicate the need for careful consideration of methods of access provided. Other problems mentioned frequently were those related to line noise and errors in the Instruction Guide relating to required modem settings. A summary of problems quoted is shown in Table 10.7.

| Problems.                                | No. of Times Mentioned |
|------------------------------------------|------------------------|
| Line engaged/not responding              | 26                     |
| Line noise                               | 8                      |
| Guide instructions wrong                 | 8                      |
| System hangs                             | 3                      |
| Modem problems                           | 2                      |
| Password problems                        | 2                      |
| Software, telephone link                 | 1                      |
| Communications software not satisfactory | 1                      |
| Use of internal switchboard              | 1                      |
| Frustration                              | 1                      |

Table 10.7. Problems Experienced in Establishing a Connection.

#### 10.3.3.3. Perception of the HELP System.

Q13,14. The majority of students (58%) were either neutral or positive in their expectation of the value of the HELP system in the successful completion of their course. This positive attitude is greatest among the Inter-Company students (71%). There is a significant difference at 5% level (significant difference in means) between the Inter-Company students and non-Inter-Company students. When considering individual facilities of the system, Inter-Company students clearly felt that E-mail would be a positive help with 84% either neutral or positive benefit as compared to only 33% of other students. This difference is statistically very pronounced at 0.3% level of significance. The Helpline, Conferences and Administrative facilities all produced similar responses with slightly over half being neutral or positive. In each case Inter-company being slightly more positive, although not statistically showing significant difference. In the case of External Databases there was again not a significant difference between the two groups, but in this case more than half the students (58%) were negative.

The more positive attitude of the Inter-Company students may be explained by the fact that more of them had already accessed the system, but this in turn is likely to be due to

a greater desire to do so stemming from the way the HELP system was sold to them as a part of their programme. This supports the theory that student use of CMC is directly proportional to the degree of emphasis placed upon the facility by tutors at the outset of the programme.

Q15. When asked how fully they had explored the currently available conferences on a five point scale from 1 "not at all", to 5 "fully", the Inter-Company students mean response was 2.8 whereas non Inter-Company students mean response was statistically different at only 1.6 thus indicating a much greater initial usage by Inter-Company students than their counterparts and confirming the earlier evidence of greater Inter-Company access at this time. However, among those who had accessed the system there was a similar spread of expertise amongst both groups indicating that once a student had achieved access to the system then degree to which exploration of the system followed was independent of student grouping, ie independent of tutor support.

There were 28 positive responses to suggested additional subjects to be covered by conferences. Of these the overwhelming majority (19) related to current modules and assignments being studied with a number of comments specifically suggesting active and regular tutor support for such conferences. The full list is scheduled in Table 10.8 below.

| Conference Topic                             | No. of Times Suggested |
|----------------------------------------------|------------------------|
| Modules/assignments etc.                     | 19                     |
| General subjects/topical issues              | 4                      |
| Syndicate (Cohort) information               | 3                      |
| Workshop conference run by<br>workshop tutor | 2                      |
| Time management/study methods                | 2                      |
| Reading lists                                | 1                      |
| Research material index                      | 1                      |
| Business simulation                          | 1                      |
| Exam preparation                             | 1                      |
| Case studies                                 | 1                      |

Table 10.8. Suggested Additional Conference Topics.

This provides evidence that student's initial overwhelming desire is for the system to provide support for the specific content and assessment requirements of the initial modules of course work. This would suggest that the more this is seen to be provided at the outset, then the more likely the students are to continue utilising the system.

When asked to identify the changes to the system that they felt would improve the benefits from conferencing, the vast majority of responses related to speed in one form or another. Clearly the slow speed of scrolling from one screen to another was proving to be very frustrating producing the most individual comments. Greater flexibility to move around within a conference and the lack of ability to easily scan a conference was seen as important, as was also faster and easier access to the system itself and the speed of the system once accessed. A complete summary of responses is set out in Table 10.9.

| Suggestions.                                                                          | No. of Times Suggested. |
|---------------------------------------------------------------------------------------|-------------------------|
| Faster scrolling.                                                                     | 12                      |
| More flexibility to move around<br>conference plus conference summaries.              | 11                      |
| Faster/easier access/better PSTN access.                                              | 9                       |
| Speed of system/direct screen access.                                                 | 6                       |
| Uploading/downloading facilities/larger<br>print buffer.                              | 5                       |
| None.                                                                                 | 4                       |
| More text per screen/clearer screen layout.                                           | 4                       |
| Better editing facilities.                                                            | 3                       |
| Better conference management/structure.                                               | 3                       |
| More user-friendly.                                                                   | 3                       |
| Time, date of contributions/quick scan of<br>last login times of students and tutors. | 3                       |
| Clearer instructions.                                                                 | 1                       |
| Personal tuition.                                                                     | 1                       |

Table 10.9. System Changes to Improve Benefits from Conferences.



#### 10.3.3.4. Experience of the HELP System.

Q16. Respondents were asked, if they had accessed the system, to score on a five point scale from Difficult to Easy how easy they had found the system to use. Of the 66 students who had both accessed the system and responded to the question only five found it particularly difficult to use (point 1 on the scale), whilst 20 found it easy (point 5), the median score being 4 indicating that, with a few exceptions, students did not find the system difficult to use once they had managed to access the system.

When asked if they did not find the system easy to use to explain why this was so, 29 students responded. Of these, twelve had in fact scored ease of use neutral or easier. Two major factors dominated responses. The first was slow or cumbersome menus. The second was poor and confusing instructions in the menus or manual. This clearly indicates areas of weakness in instructions provided and in the structure and speed of the system which appears to lead to frustration among users. A summary of the responses is given in Table 10.10.

This finding supports the above finding that a slow speed of the system is the major cause of frustration amongst users and that if early high dropout rates are to be avoided then an efficient, acceptably fast system is required. The frequency with which mention is made of poor instruction indicates the need for good quality instruction both online and in a manual.

| Reasons for System not being<br>easy to use.                               | No. of times stated. |
|----------------------------------------------------------------------------|----------------------|
| Menus slow or cumbersome.                                                  | 18                   |
| Poor, confusing instructions, menus<br>or manual.                          | 10                   |
| Slow scrolling.                                                            | 5                    |
| Unfriendly.                                                                | 4                    |
| Slow response - delays between key<br>depressions and appearing on screen. | 3                    |
| Direct access to screens difficult.                                        | 3                    |
| E-mail system prehistoric.                                                 | 2                    |
| Poor layout.                                                               | 1                    |
| External databases do not work.                                            | 1                    |
| Lack of student use.                                                       | 1                    |
| Data not updated.                                                          | 1                    |

Table 10.10. Reasons for System not being easy to use.

Q17. As would be expected with any system, the HELP system has room for improvement. Students were asked to state what improvements they would like to see to the system, firstly to make it easier to use and secondly to extend its facilities. By far the largest group of responses in respect of the first part of the question related to the speed and ease with which it was possible to move around the system. There was also a large group asking for better instructions. The full summary of response is given in Table 10.11. The response to the second part of the question was less consistent. The greatest frequency of a single comment was for greater tutor and student involvement which relates more to the method of use of the system rather than technical development. The most frequent request for technical improvement was for enhancements to the E-mail facility. The majority of students (61%) had had previous experience of other E-mail systems and generally found the HELP E-mail facility to be greatly inferior in a number of respects eg allowable length of message, inability to use recipients name and difficulty in obtaining his/her user number, inability to scan queue of new or stored mail without accessing each in chronological

order, and poor editing facilities. The full summary of responses is given in Table 10.12.

Again this finding supports the need for a reasonably fast and easy to navigate system, and also the need for good instruction. Compared to many commercially available e-mail systems, the e-mail facility within HELP was well short of state of the art and as such created a disincentive to some.

| Improvements to make System<br>easier to use.          | No. of Times Suggested |
|--------------------------------------------------------|------------------------|
| Faster and easier movement around<br>the system.       | 20                     |
| Better instructions.                                   | 8                      |
| Improved menus and fewer menu levels.                  | 7                      |
| None.                                                  | 4                      |
| Improved downloading/printing.                         | 4                      |
| Better conference summaries, usage<br>information etc. | 3                      |
| Scrap system and replace with<br>proprietary system.   | 2                      |
| Automatic notification of current logons.              | 1                      |
| Standardise communications software.                   | 1                      |
| Make conference text more fluent.                      | 1                      |
| Automatic deletion of old conferences.                 | 1                      |
| Confirmation of E-mail messages read.                  | 1                      |
| Easier access to saved mail.                           | 1                      |
| Easier access to user numbers.                         | 1                      |
| Facility for longer E-mail messages.                   | 1                      |
| Search facilities.                                     | 1                      |

Table 10.11. Improvements to make System Easier to Use.

| Possible Extensions to System<br>Facilities. | No. of Times Suggested |
|----------------------------------------------|------------------------|
|----------------------------------------------|------------------------|

|                                                                  |   |
|------------------------------------------------------------------|---|
| Greater tutor and students.                                      | 8 |
| None.                                                            | 5 |
| Improvements to E-mail.                                          | 5 |
| Course problem areas/course notes/<br>Syndicate information etc. | 4 |
| Electronic Library, searches etc.                                | 3 |
| Faster line speeds/system speed.                                 | 2 |
| Improved conference facility.                                    | 1 |
| Improved editing facility.                                       | 1 |
| Better documentation/instruction.                                | 1 |
| Fax/documents exchange.                                          | 1 |
| Downloading ability.                                             | 1 |
| HELP monthly newsletter.                                         | 1 |

Table 10.12. Extensions to System to make it Easier to Use.

#### 10.3.3.5. Use of Computers.

Q18. Student attitude to computers generally is positive. When asked to rank computers on a five point scale from 'terrible' (1) to 'wonderful' (5), only 2% of individuals scored on the 'terrible' side of neutral, with 85% on the 'wonderful' side, the mean score being 4.2. This proportion was approximately true irrespective of programme.

Despite the growing use of computers in every day business life, there are still managers who have a fear of their use and will avoid having to use one at all costs. This finding indicates that such managers are almost non-existent amongst Henley's distance learning students, and that to the vast majority of these students that prospect of having to use a computer presents no fears.

Q19. When asked to consider whether they were more persuasive with their writing or speaking skills, approximately 20% of members of each programme felt they were more persuasive with the written word. Approximately half the Inter-Company and

Tailored students felt they were more persuasive with the spoken word whilst only about a quarter of Open students did so. The remaining students, some 40% overall, felt they were equally persuasive using either.

Whilst face-to-face meetings require the spoken word to communicate, CMC requires skill in the written word. Thus those individuals who find the written word a more easy tool for communication will potentially find CMC preferable. This finding indicates the majority are either neutral in this respect or favour the written word, and whilst a sizable minority (20%) prefer the spoken word, this personal competence requirement should not of itself be a major hindrance to the successful widespread use of CMC.

Q20. The majority of students (62%) had previous experience of other electronic mail, bulletin boards or conferencing systems. The proportion was highest amongst the Tailored students, where most were from Shell who had their own widely used internal E-mail system, and to a lesser extent the Inter-Company students who were all sponsored by their own organisations many of whom also had their own in-house systems.

This finding indicates that the majority of students have experience, generally in the work situation, of similar forms of technology thus again supporting the supposition that the form of technology will not create a barrier to student use on such a programme.

#### 10.4. Post-Use Questionnaire.

##### 10.4.1. Background.

Students from the same three programmes as were surveyed for the Pre-use Questionnaire were chosen to be surveyed by the Post-use Questionnaire. As far as possible all the groups who had completed a Pre-use Questionnaire were re-surveyed and in addition four more Inter-Company syndicates were surveyed. As so few Open programme students had used the system some additional students who had not completed the

earlier questionnaire but who had experience of using the HELP system were also included.

The intention of the questionnaire was to determine users attitude to the HELP system having had substantial time (ranging from 15 months to four years) during which to have gained practical experience in using it. Additionally it was hoped to be able to use the information gathered in conjunction with that from the Pre-use Questionnaire to identify what changes in attitude to the system result from experience in using it compared to initial reactions. In the event many of those students initially surveyed from the Tailored MBA programme and most of those from the Open DL/MBA programme never subsequently used the HELP system.

This questionnaire was distributed in March 1994 at a time when most of the students surveyed by the initial survey had completed their scheduled period of study and most had either graduated or were nearing the completion of their studies. Of those not previously surveyed, most had completed or substantially completed their studies, and the remainder had been on the programme for at least two years.

Table 10.13 details the composition of the respondents.

|               |              | Responses | System Users |
|---------------|--------------|-----------|--------------|
| Inter-Company | Syndicate 1  | 5         | 5            |
|               | Syndicate 2  | 11        | 11           |
|               | Syndicate 3  | 20        | 20           |
|               | Syndicate 4  | 3         | 3            |
|               | Syndicate 5  | 5         | 5            |
|               | Syndicate 6  | 12        | 8            |
|               | Syndicate 7  | 9         | 9            |
|               | Syndicate 8  | 9         | 9            |
| Tailored      | Shell 4      | 9         | 5            |
|               | John Brown 3 | 0         | 0            |
| Open DL MBA   | Cohort 1     | 13        | 4            |
|               | Others       | 5         | 4            |
| Total         |              | 101       | 83           |

Table 10.13. No. of Completed Questionnaires by Programme.

#### 10.4.2. Findings from the Survey.

A copy of the questionnaire and detailed results can be found in Appendix 5.

##### 10.4.2.1. Use of the HELP System.

Q1. Of the students surveyed 26% used their own home computer to access the system, 28% used a workplace portable and 29% used a workplace desktop computer. The remaining 18% did not access the system at all. Of those who used their own computer in preference to a workplace computer all but one said this was for reasons of convenience. One student who had not accessed the system at all volunteered the information that this was because his employer would not provide access to the system.

|               |              | Own | Work<br>Portable | Work<br>Desk Top | Not<br>Used |
|---------------|--------------|-----|------------------|------------------|-------------|
| Inter-Company | Syndicate 1  | 0   | 3                | 2                | 0           |
|               | Syndicate 2  | 4   | 6                | 1                | 0           |
|               | Syndicate 3  | 10  | 5                | 5                | 0           |
|               | Syndicate 4  | 1   | 0                | 2                | 0           |
|               | Syndicate 5  | 2   | 0                | 3                | 0           |
|               | Syndicate 6  | 0   | 3                | 5                | 4           |
|               | Syndicate 7  | 1   | 5                | 3                | 0           |
|               | Syndicate 8  | 5   | 4                | 0                | 0           |
| Tailored      | Shell 4      | 0   | 0                | 5                | 4           |
|               | John Brown 3 | 0   | 0                | 0                | 0           |
| Open          | Cohort 1     | 2   | 0                | 2                | 9           |
|               | Others       | 1   | 2                | 1                | 1           |

Table 10.14. Use of Computer for Accessing HELP System.

Whilst not conclusive, this does indicate a preference to be able to access the system at home rather than work. If this is so, then it is necessary to consider how students will

acquire not only a computer for use at home but also the necessary communications hardware and software.

Q2. When asked how often they used the system to access various people, of those who used the system at all, most used the system to contact their Syndicate, Coordinating or Cohort tutor (71%); their own student group (73%) and their course administrator (71%). Of all students 37% used the system to contact other Henley tutors, and 56% to contact other students. These last two figures are not surprising as few tutors other than Syndicate, Coordinating or Cohort tutors regularly used the system, and whilst the system allowed cross group interaction, most activities, other than social ones, did not.

Q3. Students were asked about the types of conference they used and their frequency of use as either never, occasionally or often. None of the conference types achieved a high level of responses claiming that it was used often - Student Working Groups achieving the highest rate at 18%, all other types achieving less than 10%. Subject-based tutor supported conferences achieved the overall highest support with 76% of students accessing them at least occasionally. Other types of conference were accessed at least occasionally by the following proportion of students: Student working group 61%, Case study conferences 56%, Coffee Room 50%, and Special subject-based conferences 39%. Students were then asked to score each conference type on a 5 point scale (1, not helpful to 5 very helpful) for how useful they felt it had been to aiding the successful completion of their course. None of the types scored highly, but Case study conferences received a median score of 3 whilst Coffee Room only received a median score of 1. All other types received a score of 2.

It is interesting to note that of all conferences, the Coffee Room was clearly the best supported long running conference. This can be supported from the system log data. However, it would appear that this was due to a comparatively small number of regular users who whilst finding some value, possibly of a social nature, did not generally feel that it enhanced their ability to complete the course successfully. There is evidence to support the need for Subject-based tutor



supported conferences. These had mixed support in terms of contributions which was due to various factors not least of which was the degree and quality of tutor support. Some groups of students realised the potential benefits of the system for regular contact with each other throughout their studies and maintained very active conferences to discuss and encourage each other over their assignments and other aspects of course progression. This would explain why the student working group type of conference received a comparatively high support for frequent use, but a lower support for occasional use.

This evidence again supports the theory that if, in this case, conferences are to be extensively and consistently used then it is essential that considerable effort is made by the provider to convince new students of the potential benefits from such use.

Q4. Having once set up access to the HELP system, the majority of students had relatively few problems in subsequently logging on. 63% were successful in at least 90% of attempts, with a further 26% successful in over 50% of attempts. This leaves 11% successful in less than 50% of attempts. Whilst this level appears low, for the individual each failure is frustrating and time consuming especially when the system is often seen as a marginal benefit and can easily discourage students from trying again. This creates a slippery slope down which potentially committed users can spiral.

Q5. When asked what aspects of connection if any had caused them problems, 75% of all respondents gave a positive response but with no one aspect predominating. Modem set-up and dialling was experienced by 42% of positive responses, Brainstorm modem not responding by 30% and, having successfully connected to Brainstorm's computer, 28% were not able to logon.

It is significant that such a large proportion of students who managed to dial the host computer were still unable to logon. This supports the need previously identified to

ensure that the host computer has sufficient lines to satisfy demand and that the computer is both reliable and has sufficient capacity to enable users to be able to make successful logons in the vast majority of attempts.

Q6,7 and 8. The communications route used by students to access the system could well have an effect on the attitude that users developed to the system as it could reasonably be expected that, because of the technical quality of the medium, direct dialling over PSTN as compared with other methods might be less efficient in terms of both speed and interruptions, and except for those in the London telephone area, more expensive. Of students responding 46% used PSTN as the main route of communication, 44% used PSS or Dialplus and 10% used other routes, principally telecom links from workplace networks. There was an approximately equal usage of the workplace and home for access to HELP with 42% using exclusively their home and 37% using exclusively their workplace. No student was using both to any significant extent, the remaining 21% of students using up to 20% of their connections from their non main location. These results show no major differences from the pre-use questionnaire. Those using PSS or Dialplus would experience local telephone call rates in the vast majority of cases. Of those not using PSS or Dialplus, only 20% were able to make use of local call rates, 7% band 'a' rates, and 44% one of the long distance rates. 7% of respondents were dialling from overseas at international telephone rates. Perhaps surprisingly as many as 76% of actual users considered the cost of telephone calls did not restrict the amount of use they made of the system with only 9% claiming that it did restrict their use. What needs to be born in mind in interpreting this result is that about half of the use by respondents was from office based machines which would mean no personal communication cost and of the other half many were sponsored on the programme by their employers and may have had any such costs reimbursed. In terms of technical quality, students would have been better off if they could have used a data transmission facility rather than PSTN. However, there were many reasons why students chose to use PSTN, not least that PSTN was the simplest to arrange and did

not require any additional authority. PSS/Dialplus needed a separate registration and a fixed rental fee, but did provide usage charges at lower price than PSTN except for calls within the London area.

Q9 and 10. To determine the degree of problem caused by technical and non-technical difficulties in using their workstation students were asked to mark against a checklist aspects with which they identified as causing them problems. The results are shown in Tables 10.15 and 10.16.

|                                                 |    |
|-------------------------------------------------|----|
| Problems with computer or peripherals           | 12 |
| Problems with the telephone system or networks. | 14 |
| Problems with Brainstorm modem or computer      | 14 |
| No problems                                     | 66 |

No. of responses as percentage of system users.

Table 10.15. Serious Technical Difficulties in using Workstation.

|                                                                            |    |
|----------------------------------------------------------------------------|----|
| Due mainly to own nervousness/ psychological resistance                    | 4  |
| Due mainly to competition to use the workstation from members of household | 2  |
| Due to difficulty in finding a quiet/ convenient place to use it           | 10 |
| Due to problems in following instructions                                  | 7  |
| No problems                                                                | 73 |

No. of responses as percentage of system users.

Table 10.16. Non-technical Difficulties in using Workstation.

The evidence does not suggest that difficulties in using workstations caused serious problems to more than a small number of students.

The HELP system contains various facilities that enhance its applications, make it easier to use or make it more efficient in operation or cost to user. Students were asked about their use of various of these facilities to determine the extent of their use and of students' practice in using them.

Q11. Down-loading text of conference or E-mail.

|                   |     |
|-------------------|-----|
| Yes               | 39% |
| Tried, but failed | 16  |
| Did not try       | 45  |

Of those who tried and failed, this was due to:

|                                                      |     |
|------------------------------------------------------|-----|
| Not being able to create<br>the log file             | 45% |
| Not being able to use the<br>communications software | 36  |
| Other reasons                                        | 18  |

Of those who did not try, three gave reasons as follows:

- not needed
- managed with simple screen dumps
- lack of knowledge of process.

These figures suggest that whilst this facility was designed to make life easier for the user, many found it too difficult to manage to use. This would be another reason why users, having gained access and experienced the system, would give up using it.

Q12. The system was capable of accepting text files that had been prepared off line as input to E-mail or conferences. Use of this facility would allow users to spend less time on line accruing telephone costs.

Only 10% of respondents claimed to have ever prepared anything off line and then uploaded it as a file. This is a very low level of use that is probably even an over estimate of actual use as there is some evidence that some respondents did not understand the facility sufficiently to give a valid response.

Q13. When accessing e-mail respondents were asked whether they most frequently read mail and immediately replied on-line, or printed messages and replied later, or some other system eg saving messages on the system and replying later. 94% replied immediately on-line most frequently with the remainder printing messages off and replied later. No respondents used any alternative methods.

Q14. When saving mail students most frequently:

|                                       |     |
|---------------------------------------|-----|
| Save on HELP                          | 71% |
| Down-load and save on<br>own computer | 5   |
| Print and save hard copy              | 19  |
| Other method (not stated)             | 5   |

Q15. When checking conferences for new entries respondents were asked how they set about this:

|                                                    |     |
|----------------------------------------------------|-----|
| Read new entries on-line,<br>reply on-line         | 74% |
| Read new entries on-line,<br>reply off-line        | 2   |
| Download new entries and<br>print them             | 2   |
| Download the whole conference<br>and read off-line | 9   |
| None of these                                      | 1   |

Q16. As can be seen from the above data, relatively little use was made of printing or downloading facilities. When asked how often they used a printer to make hard copies of E-mail or conference entries 43% replied that they never did so, 49% did so occasionally and only 9% did so frequently.

Many of these facilities are intended to make the system easier and more efficient to use. The general lack of use of these indicates one of two things. Either the facilities are not easy to use, or students do not appreciate their value. The indication is that some of the facilities, noticeably uploading of pre-prepared text and to a lesser extent downloading text, are not easy to use. It is also evident that many students do not fully appreciate how to make use of such facilities nor their potential value. This again

indicates the real need for the provider to ensure sufficient introduction to the system and positive support for its use particularly in the student's early days in the programme.

Q17. There are various ways that users can obtain help when they experience difficulties that they could not solve themselves in accessing or using the HELP system. The following are the responses when students were asked to what sources they turned in such circumstances.

Individuals could select as many sources as applied.

|                       |    |
|-----------------------|----|
| Colleague at work     | 33 |
| Fellow students       | 30 |
| Henley staff          | 23 |
| Brainstorm staff      | 23 |
| Tutor                 | 13 |
| On-line help messages | 8  |
| Spouse or partner     | 4  |
| Non-course friend     | 2  |
| Your children         | 1  |
| Other people          | 1  |
| Other sources         | 1  |

Table 10.17. Sources of Help in Using the System.

The fact that this list is headed by work colleagues indicates that there must be a significant number of problems in setting up the system and connecting to the host computer (as colleagues at work would not be aware of the detail of the system itself, only the local computer hardware and the communications aspects). The provider needs to be very aware of this and provide ample support for the potential user. The relative lack of Henley based support, given the observed lack of understanding on use of the system itself, indicates that Henley needs to consider much greater training and support in the system's use.

#### 10.4.2.2. Attitude to the HELP System.

Having had time to experience the HELP system at length students were asked a series of questions to determine their attitude to it and its use.

Q18 and 19. Asked to score on a 5 point scale from 1 being 'Unhelpful' to 5 being 'Helpful' how helpful the system had been to them in enhancing the following respondents gave a median score as follows:

|                                  |   |
|----------------------------------|---|
| Your encouragement to progress   | 3 |
| on the course                    |   |
| Your success                     | 2 |
| Tutor support                    | 2 |
| Administrator support            | 3 |
| How helpful did you find the use | 2 |
| of the HELP system as a whole to |   |
| be in the successful completion  |   |
| of your course                   |   |

Q20. When asked how helpful the following aspects of the HELP system had been in their studies respondents gave the following median scores:

|                             |   |
|-----------------------------|---|
| Electronic mail             | 3 |
| Conferences                 | 3 |
| Administrative information, | 2 |
| bookings etc.               |   |
| External databases          | 1 |

It is noticeable that none of these aspects, neither uses of the system nor its specific facilities gained a more positive response than neutral. Indeed all these results were similar to those from the Pre-use questionnaire. However, subsequent analysis described later in this chapter of the experience of the different groups of students will show some significant variations, and the reasons for these will be considered.

Q21. It is recognised that the system has the potential to help different individuals in different ways. Respondents were asked to state in what three ways the system had helped

them most. A summary of student responses is given in Table 10.18. This gives a very strong support for aspects related to communication with peers as well as tutors and administrative staff despite the fact that for some programmes surveyed tutor support was very weak. Also significant are the maintenance of communication and exchange of ideas in both informal ways as well as in case study based conferences, subject support and examination preparation support. Although only mentioned once, it is interesting to note that one student commented that the system was fun to use. Any tool that provides support and is at the same time fun to use will have an excellent chance of success. As Mason (1988) has put it "this element of fun is, I believe, the real ace in the conferencing pack of cards". What the response to this question does indicate is that the system can, and already does to some extent, provide a facility to develop communication between all parties involved in the learning process and, most significantly, to generate motivation.

|                                                                                                    |    |
|----------------------------------------------------------------------------------------------------|----|
| Motivation/communication with peers/<br>group work/joint assignments                               | 35 |
| Administration support/Henley contact/<br>Feeling part of College/Workshop<br>booking and planning | 24 |
| Maintenance of communication/Exchange of<br>ideas                                                  | 23 |
| Tutor support/access                                                                               | 21 |
| Conferences                                                                                        | 10 |
| Case studies/Strategy exam preparation                                                             | 9  |
| No value - group did not use                                                                       | 9  |
| Understanding computing                                                                            | 6  |
| Subject information/Course support                                                                 | 6  |
| Data bases                                                                                         | 3  |
| Speed of response                                                                                  | 2  |
| Convenience                                                                                        | 1  |
| Fun                                                                                                | 1  |

Table 10.18. Significant Ways in which HELP helped Studies.



Q22. In the same way it is recognised that different students will experience different frustrations in using the system. In order to ascertain the most significant frustrations students were asked to state their three greatest frustrations. A summary of response is shown in table 10.19.

|                                               |   |    |
|-----------------------------------------------|---|----|
| Response time/speed of system etc.            |   | 30 |
| Access difficulties/connect time/login        |   | 22 |
| failures/Brainstorm engaged/lockouts/downtime |   |    |
| No-one else used/limited peer use/limited     |   | 21 |
| tutor and Henley staff participation          |   |    |
| Information out of date, not useful or        |   | 14 |
| relevant/no added value/waste of time         |   |    |
| Specific system weaknesses                    |   | 30 |
| Downloading/uploading                         | 9 |    |
| Menus                                         | 6 |    |
| E-mail                                        | 4 |    |
| Screen structure                              | 3 |    |
| Slow line speed                               | 2 |    |
| Simultaneous conference                       | 1 |    |
| contributions                                 |   |    |
| Lack of hot keys                              | 1 |    |
| Limited conference editing                    | 1 |    |
| Conference scrolling                          | 1 |    |
| Identification of user nos                    | 1 |    |
| No graphics                                   |   |    |
| Poor conference                               | 1 |    |
| organisation                                  |   |    |
| General system weaknesses                     |   | 38 |
| System cumbersome                             | 7 |    |
| Initial setup                                 | 6 |    |
| Unfriendly                                    | 4 |    |
| Unfriendly                                    | 4 |    |
| Limited user interface                        | 4 |    |
| Poor manual/instructions                      | 3 |    |
| Conference reply time                         | 3 |    |
| Lack of technical support/                    | 2 |    |
| after hours service                           |   |    |
| Line noise                                    | 2 |    |
| Unannounced system changes                    | 1 |    |
| System limitations                            | 1 |    |

|                              |   |    |
|------------------------------|---|----|
| No live conferences          | 1 |    |
| Personal problems            |   | 26 |
| Lack of PC/typing skills     | 5 |    |
| Lack of time                 | 5 |    |
| Usage cost                   | 5 |    |
| Lack of own modem/printer    | 2 |    |
| Lack of appreciation of      | 2 |    |
| Difficult when changing PC's | 1 |    |
| Hardware problems            | 1 |    |
| potential use                |   |    |
| Motivation                   | 1 |    |
| Unfamiliarity                | 1 |    |
| Lack of face-to-face contact | 1 |    |
| Did not integrate with       | 1 |    |
| studies                      |   |    |
| Different to in-house        | 1 |    |
| system                       |   |    |

Table 10.19. Significant Ways in which HELP Frustrated Studies.

This presents a very wide range of frustrations, but predominantly these relate to technical weaknesses with the system itself which indicates the significance of having a system that is advanced in its facilities (even if not state of the art), is easy to acquire and set up, but is above all, easy to understand and use. A secondary frustration that received mention from 22% of respondents was lack of participation from both peers and staff. This is a classic chicken and egg situation in which more participants will attract more participants, but it requires the provider to create a way to break into the virtuous circle.

Q23. In order to determine the depth of potential in the system that students saw, even if this had not been realised in practice, students were asked how helpful they feel the system could have been to them in the completion of their studies if Henley had made greater and/or different use of the system. The median response to this was 4. When compared against the median value of 2 quoted above for the actual experience, this shows that despite many examples of dissatisfaction with the system in practice, nevertheless

students do see a very definite potential in the system even in its present form in courses of this type.

Some of the potential changes to the use of the system that students believe would have brought about such improvement were as follows:

|                                                                                                  |   |
|--------------------------------------------------------------------------------------------------|---|
| System Changes/Improvements                                                                      |   |
| More user friendly/easier to use/easier access                                                   | 6 |
| Improved system/interface/greater structure/<br>improved reliability                             | 4 |
| Greater system speed                                                                             | 1 |
| Change to a modern system                                                                        | 1 |
| Additional Applications                                                                          |   |
| Delivery of materials/receipt of assignments/<br>assignment results, feedback/assignment support | 5 |
| Relevant and upto date information                                                               | 3 |
| Subject tutor input/dissertation tutor access                                                    | 3 |
| Greater use of case studies                                                                      | 2 |
| Library access                                                                                   | 1 |
| Different Usage                                                                                  |   |
| Proactive tutors                                                                                 | 4 |
| Encouragement/encourage grater discussion                                                        | 2 |
| More personalised attention                                                                      | 1 |
| Quality college responses                                                                        | 1 |
| Live tutor support sessions                                                                      | 1 |
| Compulsion                                                                                       |   |
| Make more students use/compulsion                                                                | 5 |
| Use for compulsory group work                                                                    | 1 |
| Use system as only medium for admin. support                                                     | 1 |

Table 10.20. Potential Changes to HELP

Q24. One of the keys to making the system more valuable to users (as noted above) is to encourage more users to use the system regularly. One means of achieving this is to in some way make the use of the system compulsory to students. When asked if they felt that such compulsion would have made the system more beneficial to them 55% replied positively. When asked if they would be in favour of Henley making a similar facility to HELP compulsory to all students in the future,

again 55% replied positively. This result is, perhaps, surprising given that some of those respondents in favour of compulsion themselves made little or no use of the system. This supports the theory of a virtuous circle that needs to be broken into.

Q25. A major factor in achieving success with any tool like CMC relates to the potential users perception of the system. Whatever the reality, if the potential user is convinced that it is useless or a waste of time, then he will not give sufficient effort to discover otherwise. Students were asked three pairs of questions, each pair relating to an initial expectation and then a reappraisal after experience. The first question related to how hard (1 on 5 point scale) or easy (5 on 5 point scale) the system was to learn to use. The general population of students expected the system to be relatively easy to learn and this expectation was born out by their experience in practice. In both cases their median score was 4 with no significant difference between them. This would indicate that neither the thought of having to learn to use the system, nor the practice of doing so, was a major barrier to student use.

When asked to rank between Impersonal (1) and Friendly (5), student responses were neutral with median scores of 3 in each case with no significant difference between the means, although in both cases there was a wide spread of individual responses from 1 to 5. This would suggest that for some students the concept of impersonality of a computer mediated system is an issue, whilst for other students it is a non-issue, and use of the system does not significantly change attitude.

The third question related to waste of time (1) against productive use of time (5). In this case there was a general expectation that use of the system would be a productive use of time with a median score of 4. However, the experience was not so favourable with a significant drop of the mean (at 0.3% level) to a median score of 2. This again supports the theory that the system and its applications as provided to students (as opposed to its potential) in general did not provide significant benefit to students. This finding is

confirmed by the response to Q26 where students, when asked how their attitude to HELP had changed as a result of using it, responded with 57% of all students being less positive compared to only 23% being more positive.

Q27. Students were then asked if they now felt confident in using various facilities of the system and, if so, how many times they had to use the system before gaining this confidence. The vast majority of users were confident about using the three basic facilities ie accessing and logging on, sending mail and participating in a conference, and had gained this confidence in no more than five attempts. However, the other three facilities asked about were found to be far less easily mastered. Downloading text from a conference to the user's computer was only attempted by 62% of students and only 39% ultimately felt confident in doing so, although in the main those who did so achieved their confidence in no more than 5 attempts. Uploading pre-prepared files of text from the user's computer proved much more difficult. Only 13% of students claimed to have achieved this, although from personal knowledge of many of the students even this figure appears high. If this is so it is probably accounted for by students less able in the use of the system not even appreciating what this facility is and thus not giving a true answer. The use of external databases was restricted to a small number of students. Unlike the potential for uploading files, this facility would not have had equal benefit for all students as its output is of value for specific tasks only and is also the one facility for which users had to pay extra to their telecoms costs. For some students this extra cost was both unknown in quantity and prohibitive, at least the fear of a high cost made it prohibitive. For this reason many students did not attempt to make use of it. Of those students who did use the facility, none experienced any significant difficulties in its use.

This again supports the concept that many of the facilities of HELP that potentially could make the system attractive to users were too difficult to use for students to succeed in mastering them.

Q28. Students were asked how helpful they found the written guidelines to the system supplied by Henley. These were clearly useful, but not brilliant, 10% found them very helpful, 61% found them quite helpful and 29% found them not helpful. The need for good written instructions is always important and whilst those for the HELP system were acceptable, it is clear that they could have been better which in turn might have improved the successful use by some students.

#### 10.4.2.3. Comparisons.

This section of the questionnaire was concerned with students' attitude to the value of conferencing systems as compared to face-to-face situations. It was also concerned with their current computing usage, particularly in the context of their daily work.

Q29. Firstly students were asked to compare conferencing with face-to-face tutorials in specific situations. The results were as follows:

|                                                                    | Better | As Good | Less Effective |
|--------------------------------------------------------------------|--------|---------|----------------|
| As a means of getting help<br>with course-related<br>difficulties. | 6%     | 22%     | 72%            |
| As a means of socializing.                                         | 0      | 13      | 87             |
| As a medium for<br>intellectual exchange.                          | 9      | 22      | 70             |

Table 10.21. Comparison with Face-to-face Tutorials

This shows that most students do not see conferencing as an equally good alternative to face-to-face with only little over one in four students rating it at least as good as face-to-face for these important aspects of programmes of learning. Nevertheless, given the environment of distance learning where the quantity of face-to-face that is possible by the very nature of the programme, even this low level of positive response can be encouraging as it does indicate that the HELP system was effective in its objectives to over a

quarter of students whilst the remainder were no worse off than without the system. What it does indicate, though, is a need to improve the facility to enable this positive response to increase.

When asked to make a similar comparison, but in terms of time spent, 23% felt it more expensive, 12% about as expensive and 65% less expensive; 33% found it more time consuming, 13% about the same and 54% less time consuming. These results add to the positive approach to the above results in that they highlight some real tangible benefits of conferencing on these programmes in that they are seen by most to be cheaper in terms of both time and money than face-to-face. It is perhaps surprising that in a distance education environment so many students considered it at least as time consuming as face-to-face when they would have had to spend so much time in travelling to meet together.

Q30. One major difficulty for students on a distance learning programme is that of contact with tutors when needed. Students were asked how using the HELP system compared with use of the telephone for tutor contact for two specific reasons. As a means of getting help with course-related difficulties 11% felt that conferencing was better than the telephone, 36% as good as, and 53% felt it less effective. As a source of moral support 7% felt conferencing was better, 27% as good as, and 66% felt it less effective. Again these results appear poor, but for a not insignificant number of students the HELP system is found to be at least as good as the telephone. Given that the telephone will always be an alternative, providing tutors are prepared to spend the necessary time, then the two facilities can run in parallel, both contributing to the overall good. This should not be an excuse for complacency as there is clearly much scope for improvement not least in the extent of practical tutorial support for the system. During the period covered by this investigation there was a very marked difference in the practical support given by different tutors in the CMC medium and this in itself would have influenced many students who had experienced poor tutor responses into giving negative responses to these questions. The greatest problem in this area was the lack, with a couple of notable exceptions, of

active subject-based tutors for students to contact when faced with course related difficulties.

Q31. Students were then asked whether their experience supported or contradicted various statements about computer mediated communication.

i. Individuals can participate more equally in electronic than in face-to-face communications.

44% agreed, 34% disagreed and 23% were uncertain.

ii. Computer communication is depersonalising.

49% agreed, 39% disagreed and 13% were uncertain.

iii. Computer conferencing encourages individual assertiveness.

26% agreed, 43% disagreed and 31% were uncertain.

iv. Personal interaction is more difficult with computer communication because of the lack of contextual and verbal feedback.

71% agreed, 15% disagreed and 14% were uncertain.

The key issue here is that students see computer conferencing as allowing a more equal participation of all students than does face-to-face. This is significant as it allows a greater sharing of understanding and experience among the group than would be the case in face-to-face. Whilst it is unfortunate that the system is seen to be depersonalising, probably exacerbated by the perceived lack of contextual and verbal feedback, it is seen to reduce personal assertiveness which again encourages a wider and more equal individual participation.

#### 10.4.2.4. Use of Computers.

Q32 and 33. Finally students were asked about their own use of personal computers in their normal course of work. When asked to rank on a five point scale (unimportant being 1 and important being 5) the importance of their ability to use a personal computer in their present job, the median score was



5. When asked how often they used a computer in the course of their normal work, 80% did so at least once a day with only 9% doing so less than once a week or not at all.

Q34. Only one individual claimed to have no typing skills, 78% claiming to be adequate or better. 79% claimed to be adequate or better at word processing, 73% at spread sheets and 74% at one or more other personal computing applications. Clearly the student population had a very high level of computer literacy, with only a very small minority being computer illiterate.

Q35 and 36. The majority saw the ability to use personal computers to be very important in the future development of their careers. When asked to rank this on a 5 point scale, 1 being unimportant and 5 being important 54% ranked it 5 and a further 28% ranked it 4. Thus the question as to whether personal computing should be made a compulsory requirement of such a programme would seem to be answered in the affirmative by the students. Even in terms of the need for the ability to use personal computers in successfully undertaking their current course of study on the same ranking scale the students were highly positive, 57% ranking at 4 or 5, with only 23% ranking at 1 or 2. Given the deliberate policy on the college's part of avoiding the need for the use of computers by students, this indicates that regardless of this students are still finding the ability to use computers a valuable tool in their success on the course.

#### 10.4.3. Summary of Differences in Response Between Inter-Company Syndicates 1 to 3 and Other Students.

Unless otherwise explicitly stated, all references in this section of the chapter to "Inter-Company Students" refer to Syndicates 1-3 only. "Other" students include the remaining Inter-Company Syndicates. The reason for this is as set out in section 10.2. above.

#### 10.4.3.1. Use of the HELP System.

Q1. Discounting those who did not use the system, more Inter-Company students used their own home PC (39% against 26%) and more used workplace portables (39% against 30%) allowing home use. Only two students (both non Inter-Company) used their own PC's because they had no other choice ie their employer would not provide access. This indicates a greater ability for Inter-Company students to work at home. This is corroborated by the response to Q6c which indicates that only 18% of Inter-Company students worked totally from work compared with 50% of other students, whilst 52% of Inter-Company students worked totally from home compared with 37% of other students.

This would suggest that those able to work from home will make greater use of the system, probably because of the greater freedom in being able to choose the time at which to study, but also possible because of the pressures at the workplace on time for study.

Q6. More Inter-Company students (67%) used PSS or Dialplus than other students (44%). It was mostly the Open programme students who were not sponsored and thus (presumably not able to reclaim their telecommunications costs) who chose to use PSTN. As has been shown above, this form of access is likely to give a lower quality of service than PSS or Dialplus which would add to the dissatisfaction with the overall system to those students who used this channel of communication.

Q8. The cost of telephone calls had comparatively little effect on either group of students. Approximately two thirds of each group claimed that cost did not restrict their use. This situation would not appear to have been caused by users only having low communications costs as about 50% of users in each group had either long distance or international call rates to pay. Equally, the means of access, PSTN or PSS/Dialplus did not make any difference to usage as a result of cost.

Q9 and Q10. Both groups had similar experience of technical and non-technical problems with workstations with over two thirds of each group experiencing no difficulties.

Q11 to 16. There is no noticeable difference between the two groups in terms of downloading and uploading text between the host and the users computer, nor in the major method of checking e-mail and conference entries. However the Inter-Company students did make more use of the printer to produce hard copy of some e-mail and conference text (some two thirds of Inter-Company students against less than half the other students). This could be a reflection of the greater productive use of the system by this group.

Q17. When having difficulties in using the HELP system, all students make equal use of work colleagues, Brainstorm and Henley system support staff, but Inter-Company students make significantly more use of fellow students and tutors. This would suggest that the non Inter-Company students did not have as ready access to this source of help. This in turn suggests that the philosophy of actively encouraging the working in peer groups supported by proactive syndicate and other tutors helped ease this potential barrier to system use.

Q5. Both groups had problems with connection to the HELP system. The most common problem being with modem set-up and dialling. However, about a third of students experienced no answer from Brainstorm's modem and a similar number experienced Brainstorm's computer failing to logon once their modem had answered. Whilst this was common to both groups, it inevitably detracted from motivation to use the system. This highlights the need for good quality, reliable communications and computer equipment at the host installation.

Q4. The overall student success rate in connecting to HELP was not good. One in eight students achieved a successful logon on less than every other attempt, with less than two thirds achieving success on at least nine out of ten attempts. There is evidence that Inter-Company students had marginally less success, but this does not appear to have

been sufficient disincentive to significantly reduce their use of the system.

Q2. Inter-Company students used the system significantly more than other students to contact all other groups of users. Of Inter-Company students, 97% contacted their syndicate tutor compared to 50% for other students, 92% contacted their own student group compared to only 55% for other students. This supports the concept of encouraging group working and active tutor support on-line. The course administrator was the most contacted user type by non Inter-Company students, but this was still made by only about 55% of students compared with 78% of Inter-Company students. Again this supports the concept of pro-active use by the administrator. Other Henley tutors (ie non syndicate or cohort tutors) were contacted less frequently, but even here Inter-Company students were more active again supporting the concept of the value of subject tutor involvement eg in response to assignment marking as quicker and additional feedback (one tutor did provide this service to many of the Inter-Company students, and this action prompted unsolicited and very positive feedback in the form of e-mail messages to both the tutor and Syndicate tutor). Access to students beyond their immediate group was also significant from Inter-Company students (72%) compared with other students (39%). This reflects a greater interaction between the various Inter-Company syndicates than with or between other students. It also suggests that there is an increasing value to students when they become active beyond the initial perceived value through such interaction with a much broader spectrum of students.

Q3. Inter-Company students are again significantly more active in all but one conference type. The exception is the Coffee Room. This is the most active area for non Inter-Company students and the least active for Inter-Company students with just under half of each group active. This is an interesting observation as the Coffee Room is the conference with probably the least academic value in that it is simply a social chat forum, but does provide contact with a wide spectrum of users across all types including Henley and Brainstorm staff. This could indicate an attempt on the non Inter-Company students' part (due to poor peer

participation) to broaden their contacts on the system, but unfortunately in a way that does not provide significant value to their academic exercise. Of the other conference types, over 80% of Inter-Company students made use of subject-based tutor conferences, case study conferences and student working group conferences. The fact that other students made much less use (26% in the case of Case Study conferences) reflects the lack of practical opportunity provided by Henley, and the comparatively low use of Student Working Group conferences (41%) again reflects the lack of facility setup and active involvement by tutors.

The overall conclusion here is that students are unlikely to setup and run conferences on their own volition, but given a degree of proactive tutor input in creating and actively supporting these conferences, then the students will make beneficial use of them.

#### 10.4.3.2. Attitude to the HELP System.

Q18. This question sought students' attitude to the help that the HELP system had been to them in four aspects of their studies. In the first three cases there is significant difference at the 0.3% level (significant difference in means, independent samples) between the response of Inter-Company students and other students. In the case of administrator support there is no significant difference. In all cases the mean Inter-Company response is positive whilst the mean response of other students is negative.

Q19 and Q23. Inter-Company students are again more positive (56% either positive or neutral) than other students (23% either positive or neutral) in their assessment of the value of the system as a whole in their successful completion of the course with significance at the 0.3% level. However, their mean response is slightly negative. When asked how helpful the system could have been as a whole in the completion of their course had Henley made greater and/or different use of the system, the Inter-Company response is now positive indicating that they still see need for improvement in the way the system was used by Henley within

Q31. "Individuals can participate more equally in electronic than in face-to-face communication".

Inter-Company students generally agree with this statement whereas other students are equally divided on the issue. This would suggest that the more profitable the experience of using the system, the more the user sees the equality in participation that is not always so in face-to-face.

"Computer Conferencing is depersonalising".

Inter-Company students disagree with this statement in the ratio of 2 to 1. Other students agree with the statement in the ratio of 2 to 1. This is another indication that their poor experience with the value of the system has influenced their attitude to the facility thus indicating the importance of positive college support for the use of the system at an early stage.

"Computer conferencing encourages individual assertiveness". Both groups disagree with this statement in the ratio of approximately 3 to 2.

"Personal interaction is more difficult with computer communication because of the lack of contextual and verbal feedback".

Both groups of students positively support this statement.

#### 10.4.3.4. Use of Computers.

Q32. Both groups of students felt that the ability to use a PC was important in their present jobs.

Q33. The majority of students from both groups used a PC regularly in the course of their normal work, over 80% of each group using one daily.

Q34. In each of the main competences, i.e. typing, word processing, and spreadsheet, at least two thirds were at least adequate in their ability. In all cases non Inter-Company students were more competent than their Inter-Company counterparts.

These questions (Q32 to Q34) indicate that in Henley's case IT literacy has little bearing on the use made of CMC.

Q35. Both student groups expect the ability to use PC's will be important in the future development of their careers.

Q36. The majority of students from both groups found that the ability to use PC's in successfully undertaking their course of study to be important, both groups median score being 4 on a scale of 1 (unimportant) to 5 (important). Very few identified this as unimportant substantiating the argument that there is a case for making their use compulsory on the programme and thus allowing CMC use to also be made compulsory.

#### 10.5. Summary.

After setting out the background to the survey, this chapter has set out the analysis of the system usage data and the pre-use and post-use questionnaires. The system usage data is analysed to show the use of the system by each of the student groups within each of the three programmes. The major finding from this identifies Syndicates 1 to 3 of the Inter-Company programme as clearly being the major users of the system, with the remainder of the groups being further sub-divided firstly into the remainder of the Inter-Company Syndicates and then the remaining student groups.

The pre-use questionnaire analyses the students' initial perception and use of the system and leads to conclusions relating to the students' attitude to computer use in general and the HELP system in particular as well as the nature of the system itself.

The post-use questionnaire analyses the students' perception and use of the system after having had opportunity for extensive use of the system. This identifies areas where the system is currently successful in supporting students. It also identifies areas where the system itself needs technical improvement, and finally areas where the use and support of the system by the provider in general and the tutors in

particular need improvement. These findings are substantiated and extended in the final section of the chapter where distinction is drawn between the responses to the post-experience questionnaire of two different groups of users who have experienced different levels of provider and tutor support.



## CHAPTER 11. ASSESSMENT OF THE HENLEY HELP SYSTEM.

The method to be adopted for the assessment of the HELP system as used by Henley Management College has been set out in chapter 8. In this chapter this methodology is applied. Firstly the system is assessed against Riel and Levin's criteria, then by Waggoner's process, and finally by Turoff's process.

### 11.1. Assessing Riel and Levin's Five Criteria.

This aspect of the evaluation looks principally at the requirements for the successful application of a CMC system.

11.1.1. Criterion 1: A group of people who work together or share an interest in a task, but who find it difficult to meet at the same location and/or at the same time.

The different student groups conform to the first part of this criterion (working together or sharing an interest in a task) in varying degrees. Given the nature of the students on the Henley MBA programmes, ie typically postgraduate managers in mid career and of an above average ability, it is not unreasonable to assume that having sacrificed a large amount of precious time to undertake the programme that there will be a common desire among all the students in all groups to achieve a good understanding of the subject matter of the course syllabus. However, both from the survey data and from personal experience of working with students on various programmes over a number of years, it can be seen that there is varying commitment to working together on joint tasks and group work as part of the learning and assessment process.

In both the Inter-Company and Tailored cases the students were initially placed in peer groups, ie syndicates or cohorts, within which they would study. Each group was encouraged to work together as a group, interacting with each

other, exchanging ideas and enhancing each others learning process. Clearly there was a group wide interest in a common task, ie the successful completion of the programme, to which each member would subscribe, but the degree to which such working together took place was variable.

All Inter-Company syndicate members were kept in their syndicates and worked together at least in the sense of meeting together at regular face-to-face workshops when part of the activity would be group based tasks. Some syndicates, notably Syndicates 1,2,3 and 7, were given group tasks outside the workshops that related to the study programme. Assessment was only indirectly linked to this work in that the particular tasks aided the learning process that helped prepare the student for the formal assessment process. Some of these tasks were specifically designed and run by Henley tutors through the medium of CMC, but all of these tasks could have been assisted by, or required the medium of CMC in order to be satisfactorily completed.

The Tailored students were also allocated to cohorts and also attended regular workshops, but individual students were allowed to choose between (usually three) workshops on different dates and in different locations which would be attended by students not only from their cohort, but those of two other company cohorts running in parallel. Whilst the nature of these workshops was similar to those attended by the Inter-Company students, any group working would inevitably involve new composition of groups and thus there was no continuity of group membership and hence no long term sense of loyalty to a particular group of students. A number of specific group based exercises using CMC as a medium were run by Henley tutors for the two cohorts under study.

Although some of the Open students included in this survey were allocated to a cohort, other than at their initial workshop they did not ever meet as a group. Each student chose when he attended subsequent workshops which could be attended by any other Open programme students working on the same module at that time. Thus the Open students had far less group identity and no group based tasks outside the regular workshops. Open students were invited to join in

some of the specific CMC based group exercises that were run for the other programmes, but the evidence is that very few did so.

In so far as the second part of this criterion is concerned (difficulty in meeting face-to-face) some students, particularly within the company based programmes, could, and did on occasions, meet face-to-face. However, outside the workshops (generally held not more than once every two months during the first eighteen months and then less frequently) such meetings were infrequent and rarely attended by even the majority of members of any working group.

An issue that arises is whether an initial working together and common interest in the task will be maintained. The majority of students (58%) were either positive or neutral in their expectation of the potential benefit of the HELP system to their studies, but the Inter-Company students (71%) were significantly more positive (see Q13. section 10.3.3.3.). Having gained experience using the system, 56% of Inter-Company Syndicate 1-3 students still remained either positive or neutral whilst other students response dropped to only 23% (see Q19. section 10.4.3.2.). This variation in response is supported by the degree of change in student attitude as a result of using the system where the equivalent figures for 'as positive' or 'more positive' are 71% and 31% (see Q26. section 10.4.3.2.). From this it would seem that providing students are helped to overcome the initial hurdle of using the system, are encouraged in its potential benefits and supported in the use of the system that many will find the system of value in a distance learning environment. This thus supports the proposition that providing proactive input from the provider is present then benefit will be gained by a significant proportion of students which will encourage a common interest and desire to work together via the medium (see 5.6.3).

This is further supported by the findings of the Losehill exercise (see Appendix 1) in which Syndicate 2 students of the Inter-Company programme were asked to consider a case study as part of their marketing module in preparation for a face-to-face workshop. In this the majority of members were

active and tutor supported. The student response to the value of the exercise was marginally positive, but when asked their opinion of the potential of such exercises, if technical problems and particularly problems related to exercise design and tutor input were resolved, the response was unanimously positive. Both the Benetton (Appendix 2) and Stratton Financial PLC (Appendix 3) exercises give similar support.

A further issue that arises relates to the role of CMC within the course. In the Henley case (the subject of this study) the role is of programme long support, and the overall analysis of the value of the system is on that basis. However, it could be the case that CMC could have a positive value at specific times and for specific short term objectives within an overall MBA programme. The examination preparation exercise would be an example of such an exercise, although in this case its membership was of an established and continuing small group. This then leads to the issue of whether within a programme it is better (from the perspective of CMC success) to have long term small working groups, as in the Henley case and especially in the Inter-Company programme, or groups that change with different tasks, as was the case at Lancaster (McConnell, 1994). It is in such situations as this where team membership changes that tutors could make effective use of Belbin's team role theory and Honey and Mumford's learning styles theory to create teams for specific exercises to maximise success for the overall student benefit.

11.1.2. Criterion 2. A well-specified task to be accomplished by the group.

By the very nature of the way the HELP system was introduced to the distance learning programmes, it was in danger of not being seen by students as a medium for undertaking a well-specified task. As we have already seen above, whilst the majority of students were neutral or positive in their initial attitude to the system, a large minority were not. It is interesting to note the significantly higher expectation from Inter-Company students. This follows from

their introduction to the system where they were given the expectation that, in addition to the general facilities including access to tutors and administrators, a series of specific module related CMC exercises would be provided for them. Whilst this was also true of the Tailored cohorts surveyed, it was not so for the Open students. For the Open students it was presented very much as a facility that was available for them to make use of if they wished.

The second aspect of the criterion, the group emphasis, again was more significant in the introduction to Inter-Company students and to a slightly lesser extent to Tailored students, but this aspect was almost totally absent from the introduction to the Open students.

Thus it cannot be said that the system as a whole was presented as a well-specified task to be accomplished by the group. What could more successfully be described as such were some of the more specific exercises that were run for students.

An example of this was the Losehill Case CMC conference (see Appendix 1). This was run for Inter-Company Syndicate 2 where a subject based conference was run to consider a case study in preparation for a face-to-face workshop. In this the task was well understood by the students and set the group realistic objectives, but the timing of the conference to finish almost a fortnight before the workshop was a mistake. The students own decision to continue the conference right up to the workshop indicates this. Additionally most students had studied the case individually prior to the conference. Whilst the students gave the exercise a qualified success rating, they had some criticism. These related to the conference timing which the students felt detracted from the value, and also to the content of contribution (which was tutor led) which it was felt did not expand on the course notes sufficiently. It was generally felt that the exercise took time to get under way as students did not feel the urgency to get involved early (see Gersick 5.3.2.), nor any incentive such as an examination or assignment deadline. This would suggest that the value of the exercise would be increased if the task was linked in

some way to course assessment in addition to forming part of the learning process. Further examples producing generally similar conclusions are the Benetton Case (Appendix 2) and Stratton Financial Plc Case (Appendix 3).

Thus it would seem that the presentation of a well specified task alone is not sufficient to ensure that this criterion is successfully met, but that the task must be reasonably attainable given the constraints of the system and also that some additional form of motivation is required. This finding is supported by the belief held by over half the students that the system would be of greater value if its use was made compulsory (see Q24. section 10.4.2.2.). How this might be done is not clear, but one obvious option is a link to assessment (see, for example, Q5a. Appendix 1.).

#### 11.1.3. Criterion 3. Ease of access to a reliable computer network.

Of the five criteria I would suggest that this is the most obvious and essential in ensuring successful networking. Clearly without a reasonable access to a satisfactory system no student can be expected to gain benefit from that system. Despite efforts by Henley and Brainstorm to satisfy this criterion, many students still felt that this was not achieved to any degree of satisfaction.

At the time of the pre-experience questionnaire 61% of students who had succeeded in gaining access to the system had experienced problems in this respect (see Q12a. section 10.3.3.2.). After experience using the system this reduced to 37% still claimed to be unsuccessful in gaining access to the system in at least one in ten attempts (see Q.4. section 10.4.2.1.) This is clearly an improvement which could be attributable to a combination of two factors. Firstly improvements to the host facilities and also the advice and support given to students by Henley and Brainstorm would improve access success, and secondly as the students become more experienced in using the medium they will learn how to avoid some of the problems of access.

Access to HELP can be considered in three parts. First is the individual student's computing facilities at home or work through which he will gain access. Second is the telecommunications link through which he will connect to the host computer, and third is the host computing installation itself. Of these Henley can advise the student on the first two, can make available access via various telecommunications links (in this case PSTN and PSS/Dialplus), but can only have full control over the host installation.

Many students accessing the system made use of their own computer (31%), but the remainder were able to use a workplace computer of which half used portable machines that they were able to use at home (see Q1. section 10.4.2.1.). For some of the students, like those from Shell, their employer went to some lengths to ensure that access was available from their office desk via the company network. Whilst this is good, it must also ensure that the student also has, or can make, sufficient time in the office to fully utilise the system. Others with portable machines had the greater flexibility which allowed them to access the system at more times that were convenient to the individual. Students, or their sponsors, were responsible for providing the necessary hardware and communications facilities, although Henley did recommend equipment and provided specification requirements. This inevitably led to a great array of different equipment which in turn made it difficult for Henley or Brainstorm to help with problems. This did, indeed, lead to problems (see Q6a. Appendix 1 and Q6b. Appendix 2).

Students had a choice of telecommunications links with which to connect to the host computer. Firstly they could use the PSTN system and dial directly to the host. For much of the time of the survey the number of lines into the host was very limited and many students complained that the lines were regularly engaged thus preventing them making access. More lines were added latterly which did relieve this problem. Another major problem for some users, particularly using this link, was caused by line noise which was often a major problem, on some occasions even causing the line to break up completely. The alternative link was via British Telecoms'

PSS or Dialplus services. This had the advantage of providing a cleaner line with less line noise being designed principally for data transmission. Also the host was set up to prefer incoming calls through this link and, to all practical purposes in this survey, could receive any number of calls simultaneously. The disadvantage to the individual was that this required a rental for the access password although it did then allow local telephone calls from the majority of the country. For many students it was easier to claim telephone calls from their sponsors as expenses than it was to arrange for a PSS registration. Thus less than half the students used this route. Experience showed that the problems with both communication links reduced over the period of the survey. This could be attributable to either or both the improvement in the facility or the increase in experience of the students.

The ease of access and use of the host by students and its reliability is the one aspect of the total system that Henley could control. It has to be said that this was often a problem for students. Just over half the students experienced problems with either the host modem not responding to a call, or the host computer failing to log the user on to the system (see Q5. section 10.4.2.1.). When asked for their greatest frustrations in using the HELP system, the two most common responses were response time or speed of the system, and access difficulties (see Q22. section 10.4.2.2). Many of these students were used to state of the art information technology systems in their place of work and were not happy to find anything less than this provided by Henley. This is supported by the responses that describe the system as cumbersome or unfriendly, and specific comments like "the system needs various technical upgrades before people will persevere" and "the system is too slow and cumbersome". One student summed up the students' perspective when he said "people have to spend so much time studying that they just don't have half an hour to read bits of conferences". The students' time is precious and anything that would appear to them to be a wasting of time will quickly be discarded.



A further issue for consideration is the range and quality of technical facilities available within the system. Because most interactions on the system are conducted asynchronously and also because of the high cost of telephone calls, students need to rely heavily on downloading text to their local PC to study off-line whilst preparing their responses on a local word processor before reconnecting to the host system and uploading their prepared text. This is a facility that is considered by Emms and McConnell (1988) to be essential in such a system. This facility was available, but clearly not in a satisfactory form as can be seen from the number of students having problems downloading text and the very few who even managed to upload text (see Q11. and Q12. section 10.4.2.1.).

11.1.4. Criterion 4. A sense of responsibility to the group or task.

By its very nature, a computer mediated exercise depends on active participation from most if not all the members of the group. In a face-to-face situation different members can fulfil different roles, some non-vocally by contributing through practical skills. In a computer mediated environment such contributions are not available without associated 'verbal' communication. In order, therefore, for the exercise to be a success there needs to be a real sense of responsibility on the part of group members to the group and/or task. Such responsibility will express itself in different ways in different exercises. For instance, in a group exercise conducted via a conference there is a requirement for a commitment by at least most members to participate by positive textual contribution. The practice of reading a conference, but not contributing (referred to as 'lurking') might benefit the individual but will not add anything to the value for the rest of the group members. In the case of e-mail communication the responsibility is on each member to regularly and frequently access the mail facility in order to receive and reply to any waiting mail.

Some student comments relating to the Losehill conference exercise (Appendix 1) explicitly express this issue:-

"needs more active discipline (ie more specific manager direction)".

"everyone must commit to contributing".

"It is easy for some students in CMC to take advantage of the situation, ie to look only briefly for any useful information but not to put in the time and effort to make the conference successful. Others are then less likely to contribute".

These comments show that even within specific conference exercises as conducted in this survey there is scope for improvement in this aspect of conduct, but nevertheless the general conclusion of the exercises described in Appendices 1, 2 and 3 is that providing suitable tutor input is present then the sense of responsibility to the group or task is more easily obtainable. However, if the group task can be seen as of sufficient group benefit, then responsibility to the group can be achieved even without tutor support.

A specific example of this relates to two exercises conducted with Syndicate 2 of the Inter-Company programme. The first exercise was a group analysis of a case study and preparation of answers to set questions that was set up and lead by a tutor as a mock examination in preparation for the real examination. In the real examination, the case is distributed in advance of the day to allow students to prepare an analysis of the case in advance. It is encouraged that this is undertaken collectively. The students, having successfully undertaken the mock case with the tutor, then undertook the analysis of the real case in a similar way with no tutor support. In this case the desire on the part of each individual to be personally prepared for the examination fulfilled Riel and Levin's first criteria, the specific case fulfilled the second criteria, and the acknowledgement of the need of each other's input fulfilled the fourth criteria even without tutor input. This gives evidence to support the theory that if the task is seen as being sufficiently important to the individual's success, then responsibility to

the group and task will follow and the CMC exercise will be successful.

The general student consensus was that, whilst some tasks such as that just described provided sufficient incentive in themselves, there was often a need to provide some greater incentive to individuals to give the required level of commitment than simply a responsibility to the group. One such incentive was seen to be linking the use of CMC to the assessment process which would probably require making the use of CMC compulsory (see Q24. section 10.4.2.2.). This would have the effect of causing a commitment to the task. In contrast to this the Lancaster University Business School experience was to ensure this sense of responsibility to the group by giving tutors and students collectively responsibility for designing activities and assessment (Hardy et al,1991 and McConnell,1994). Such an approach requires a deliberate decision on the part of the programme designer to provide a more open form of learning, at least in terms of assessment, than is currently often the case, and certainly more so than is current in the Henley programmes. Whilst an approach such as Lancaster's would be towards third generation MBA programmes (Carnall,1995), it would be away from one aspect of the concept of industrialisation (see 3.4.2) as it is staff intensive, but nevertheless still moving towards the concept of convergence (see 3.6).

#### 11.1.5. Criterion 5. Strong leadership and final evaluation of the group task.

It follows from the previous criterion that when group activity is mediated by computer it often requires a greater degree of control to help create a sense of responsibility to the group or task. Such control may come from strong leadership either from the students forming the group, from tutorial input, from the programme design, or from a combination of any or all of these sources. Which would depend to some extent on the nature of the task. For example, the mock examination conference described above required significant input and direction from the tutor, partly as this was a form of instruction in learning how to

undertake such an examination preparation and partly as a means of encouraging participation. However, the same group of students subsequently prepared successfully for the real examination by structuring their own conference based on the examination case in the same way. This is an example of how an initial leadership from a tutor can subsequently lead to a successful student leadership.

Student feedback from the Losehill conference (Appendix 1) indicated that students believed that the conference required a much more structured and a tighter control from the tutor and manager. As one student put it "the conference initiator should do more to structure the discussions etc". It was commonly suggested that direction should have been given to individuals or groups to undertake specific tasks, and that a much greater control of group interaction was required. It was acknowledged that this form of tutor input would definitely not be required in a face-to-face situation. In fact all the students from all three programmes, in common with all Henley MBA students attending face-to-face workshops, have frequently and successfully undertaken similar exercises in a face-to-face situation, and required little or no tutorial guidance as to how to proceed. One Syndicate 2 student has said, when commenting on his experience of the Losehill exercise, "the course (ie the MBA) is all about training effective managers and thus we should have been able to organise ourselves without being pushed".

Student feeling generally, supported by the conference text evidence, is that such exercises take a long time to get going. In other words in Tuckman's theory the forming and storming stages are extended and, it may be the case, that groups more often do not progress beyond this stage than would be the case in face-to-face situations (see 5.3.1. and 5.6.2.). The general feeling from students is that because of this extended time duration of conference exercises to get going specific tutorial input is required to speed up the process. One student summed it up as follows, "interaction in live groups forms more quickly. In CMC it takes much longer even though the group members know each other well. The 'getting to know you' time is a waste".

What this may also indicate is that CMC groups tend to function more in line with Gersick's model (see 5.3.2.) than Tuckman's. In Gersick's model there is a long initial period (Phase One) in which the group essentially organises itself for action, but then needs an external stimulus to spur it into serious productive action. This was the case in the Losehill exercise where much discussion, generally of value, took place, but the spur of the approaching workshop was needed to stimulate activity to create the output required for the workshop. In the Benetton cases (Appendix 2) the exercise was more tightly controlled by the tutor who introduced the evaluation stage at a predetermined date. This caused the groups to be more prepared with the required output for the workshop. This suggests that the nature of the task and the degree and nature of tutor leadership will influence the group development process.

It is clearly not the case that the leadership has always to come from a tutor. In many cases it can come from one or more of the students. Another student has commented:

"conference leaders (ie specially selected students) should be established beforehand, rather than a 'now over to you' approach. Perhaps delegating different tasks to different people at the start would encourage more people to get involved. To some extent it is more necessary to delegate on CMC as it is instinctively easier to leave it to someone else than is the case face-to-face."

What this is clearly suggesting is that in a CMC situation the early stages of group development take longer than in face-to-face and thus specific help is needed to reduce the time period for this aspect of group work.

#### 11.1.6. Summary of Riel and Levin's Analysis.

Whilst all the students had a common interest and goal in studying for, and achieving the MBA qualification, whether this was so in relation to use of the HELP system depended firstly on how the system was introduced to them, and secondly how well the system was integrated into the

programme. This required not only relevant activities, but active support and input from tutors for all the major learning activities. Whilst some groups were able to meet regularly, none were able to do so frequently. Thus of the groups covered by this research the early Inter-Company groups could be said to have satisfied this first criterion whilst the remainder of the Inter-Company groups and the Tailored groups did so but to a lesser degree, and the Open groups not at all.

Making the system available to students to use themselves without significant tutor guidance and input would not satisfy the second criteria of a well specified task. It could be argued that the students themselves could define and set their own task specifications, but this does not appear to happen except in a few situations and then only with students who have experienced successful and well specified tasks with significant tutor guidance and input eg the Inter-Company Syndicate 3 work group (which ran successfully and continuously for about four years, until all its members had graduated, as a means of peer support and encouragement) or the Syndicate 2 Integrated Examination preparation conference. The evidence suggests that what is required is a series of specific exercises that the participants see as of direct relevance to their studies. To this extent again only the early Inter-Company Syndicates can be said to fully satisfy this criterion with, as before, the remainder of the Inter-Company and Tailored groups doing so to a lesser degree and the Open groups not at all.

Access to the HELP system is clearly a necessity if the system is to be the medium for a successful networking community. Whilst most of the students in the study did have access, a majority of the Open programme students did not for various reasons but principally, it would appear, because they did not believe that the benefits to be gained were worth either the cost involved in achieving access or the cost and time involved in using it once access was gained. What is arguably more significant in this criterion is the reliability of the system and its access. In this respect there were significant problems expressed by the majority of users from all groups thus for this majority reliability was

not satisfactory. It thus cannot be left to students to have the desire and technical ability to work through such problems of their own volition. For this criterion to be met it is necessary for the majority of users to be satisfied.

A sense of responsibility to the group or task is seen to be something of a chicken and egg situation. As has been shown by Akehurst and Tagg (1993) that at least within the form of use of CMC within this study "a sense of responsibility to the group may not arise of its own accord: it may in fact only be engendered through a primary sense of responsibility to a specified task". They go on to suggest that Riel and Levin's criterion confuses the direction of causality and that it is because a conference is successful that it then generates a sense of group responsibility, rather than the sense of group responsibility generating a successful networking community. This is supported by the findings of this study. Thus it can be said that this criterion is not of major importance as a prerequisite for a successful networking community, but will follow. What is probably true is that if such responsibility does pre-exist the exercise then this will enhance the success of the exercise. In this sense it can be seen from the Inter-Company and Tailored groups that where this sense of responsibility was engendered at starter workshops that it may well compensate for weaknesses in other of the five criteria.

Finally, the question of strong leadership and final evaluation of the group task can be seen in this application of the HELP system to be varied in nature. In many respects the leadership from tutor input can be seen to be strong in many aspects and activities for the early Syndicates of the Inter-Company programme and also in the early stages of the remainder of the Inter-Company and Tailored programmes, but not so in the Open programme. What is also seen is that in some exercises this leadership can be provided from within the student body (eg the preparation for the Integrated exam by Inter-Company Syndicate 2), but that this will only arise once a successful group is operating. It is further suggested that the nature and degree of tutor leadership may well influence the group development process itself. Again the issue of the final evaluation of the group task is seen

to be important. This study has shown the importance of the provision of exercises that are designed to directly assist in the learning process of the course content and to be timed appropriately. Again, with the same exceptions as previously mentioned, this was lacking to a great extent in the Henley system.

The summary of Riel and Levin's criteria as applied in this case is shown in Table 11.1.

| Criterion<br>No. | I/C Syns<br>1-3 | Other I/C<br>& Tailored | Open |
|------------------|-----------------|-------------------------|------|
| 1                | Yes             | ?                       | No   |
| 2                | Yes             | ?                       | No   |
| 3                | ?               | ?                       | ?    |
| 4                | ?               | ?                       | No   |
| 5                | ?               | ?                       | No   |

Table 11.1. Summary of Riel and Levin's Criteria to this Case.

Based upon the specified definition of 'success' as continuous use by the majority of participants throughout the period of intended existence, it would be predicted that the Inter-Company Syndicates 1-3 would stand a reasonable prospect of 'success', the other Inter-Company and Tailored groups would struggle to achieve success, and the Open groups would fail. From the analysis of system usage data above it can be seen that these predictions were shown to be substantially correct.

#### 11.2. Waggoner's Evaluation.

This aspect of the analysis focuses principally on the users of the system and their interaction with it.

##### 11.2.1. The Integration of Technical and Teaching Social Subsystems.



Waggoner assesses this under his description of the five basic elements of a collaborative learning exercise.

#### 11.2.1.1. Positive Interdependence.

In many ways this looks at the same issues as discussed under Riel and Levin's criteria 4 and 5, but goes further than a sense of loyalty to the group and a need for strong leadership. In this evaluation there is the requirement on each individual to accept a responsibility to play an active role within the group and acknowledge a dependence upon the other group members if success is to be achieved. This also implies that success, if it is achieved, will apply to all members of the group. In terms of individual roles within the group this evaluation is looking to see the degree to which individuals fulfil specific roles whether leadership is from within the group or from a tutor.

There is little evidence from the study to indicate, in other than a few specific cases (as previously mentioned) such as one group within Inter-Company Syndicate 3 and students participating in specific short term exercises such as the Integrated Examination preparation exercise, the existence of such interdependence and role filling to any great degree without the presence of strong tutorial guidance.

#### 11.2.1.2. Face-to Face Communication.

Waggoner acknowledges the need for effort on the part of the provider to ensure that in CMC there is a real replacement activity for this element. Such activity will need to consist of regular, frequent and constructive contribution from all members of a group.

The occurrence of this type and degree of activity in the HELP system was only observed in some aspects of the systems activities. It was present in some of the specific activities, but it was also observed in some situations such as E-mail communications between students and also between

students, administrators and syndicate/cohort tutors. The student questionnaire responses support this observation of limited "face-to-face" communication. This is evidenced by the number of times such things as communication, joint action, exchange of ideas etc. are mentioned. Whilst this is without doubt working in some situations, it is an aspect that needs to be enhanced and developed if the system is to achieve its potential.

#### 11.2.1.3. Individual Accountability.

This is linked closely with Waggoner's first element and looks for a responsibility shown by each group member in making regular and constructive contribution which, in the case of CMC, implies written input. Again this can be seen in some groups and in some of the more successful exercises. However, even in successful exercises there is a tendency for the bulk of the work to be undertaken by a core of members with some having a peripheral role whilst a few take little or no constructive part. What cannot be said, however, is how much benefit some of those on the periphery gain from what is done by the rest of the group. This is no different from conventional face-to-face working groups where some play a more active part than others and those who are less able in various ways benefit from the input of their peers.

#### 11.2.1.4. Interpersonal and Small Group Skills.

It is acknowledged that such skills as required in CMC are different from those required in conventional small group situations. Waggoner indicates his belief that these need to be specifically taught. In the HELP system as studied in this case this was not undertaken in any structured way. Indeed for the duration of the study period most of the tutors were, themselves, learning such skills by using the system. Thus it can reasonably be said that such skills were only present to the extent that individuals developed them through experience.

#### 11.2.1.5. Group Processing.

Waggoner links this specifically with the fourth element. As that is very weak, so must group processing be weak. He also emphasises the need for "oversight and timely intervention of the tutor" (Waggoner, 1992). Thus he would see any exercise that is left entirely up to the students to organise and run themselves as being doomed to failure.

In this study such tutor input was not common place as many of the tutors were themselves learning how to use the system, and some exercises were even expected to run without significant tutor input. However, some exercises such as the Inter-Company Syndicate 3 working group conference proved very successful in providing peer support and encouragement to its members even though tutor input was at a minimum. What is interesting here is that this was the only successful conference of its type despite numerous others being started from the same basic starting point and with the same degree of tutor support. This suggests that this particular group of students were able to overcome the initial barriers identified in the previous four elements to achieve a critical level of competence that then enabled the group to function successfully in the medium. This in turn indicates that tutor input is not always essential, although it would appear to be so at least in the short term to help a group find its feet. If tutor input was not required even in the early stages, then one would reasonable expect some other groups also to have succeeded.

#### 11.2.2. Member Participation Analysis.

The detail of this analysis can be seen in section 10.2 above. Its major finding is the significantly greater use of the system over an extended period of time by the members of Inter-Company Syndicates 1 to 3 both in terms of numbers of logons and total connect time. What is even more profound about this finding is that Syndicates 2 and 3 maintained this level of activity for a longer period than most of the other groups were even registered. The majority of the remaining Inter-Company Syndicates and the Shell cohort all began with

a certain degree of activity, although less than that of Syndicates 1 to 3, but all tailed off quickly. The only exception to this being Syndicate 7 where activity, whilst lower than that of Syndicates 1-3, was still higher than that of others. This activity was characterised by comparatively frequent but short logons. This follows from the proactive input from the Syndicate tutor to the group conference and e-mail thus using the system to help maintain regular contact between group members and himself, but not undertaking specific group based tasks to any significant extent. This thus created value, but to a limited extent. The only other significant users were a limited number of individuals from other Inter-Company Syndicates and one Open programme student. These other students who were active were generally so in activities that were not specifically designed for their group but found value in joining with other students from other groups.

Individual student responses to the specific ways in which the system helped in their studies indicates clearly the importance of the ability of contact with peers to maintain motivation through simple communication, but also through group working (see Q21. section 10.4.2.2). This was specifically mentioned by 35% of respondents. Access to the College staff, both administrative and academic, helped to create a feeling of being part of a college environment rather than a single lone student working in isolation (24%). Other such issues as maintenance of communication and the exchange of ideas, both with peers and with tutors, also were specifically mentioned by some 20% of respondents. Given that only 82% of respondents ever used the system and, of those who did, some used it very little, the frequency of these positive attitudes indicates that once users are encouraged to use the system regularly then they will discover a value that either they may not have perceived at the outset, or lost before gaining sufficient system experience. The latter is the more likely as student responses from both the Syndicate 1-3 group and all remaining students when asked about perception of the system in terms of productive use of time was positive. Whereas after experience Syndicate 1-3 students substantially maintained their response whilst that of other students declined

substantially (see Q25. section 10.4.3.2.). Thus it can be concluded that as the system was technically the same for all students as was access, then this difference in attitude to the system must stem from the varying support given to activities on the system by Henley.

These positive attitudes were countered by comments relating to difficulties experienced in gaining benefit from the system. The majority of such comments related to technical problems with either the system itself or with communications, but 21% of all respondents identified lack of peer support for the system or lack of tutor participation as major hindrances to gaining benefit (see Q22. section 10.4.2.2.). This gives added support to the conclusion in the previous paragraph.

#### 11.2.3. Outcome Measures Analysis.

Within the context of this study outcome measures in the sense of comparative student performance in assessment are difficult to evaluate as the only possible quantitative measure would be levels of grade awarded for various parts the MBA programme. In the case of the Inter-Company programme there is no control group as all the Inter-Company programme are involved, and the success of the HELP system within the remaining groups is very limited and would not be expected to show any significant benefits.

Some qualitative data is available in the form of student response to the post-use questionnaire and the individual exercises. In all cases the responses from Syndicates 1-3 of the Inter-Company programme are more favourable than those of the other groups of students.

In terms of the help that the HELP system gave in enhancing various aspects of the study process and in completion of the course as a whole Syndicates 1-3 always gave at least a neutral response. This indicates that there is a perceived value in such aspects as tutor support, administrative support, general encouragement on the course and, above all in helping to achieve personal success. The response of all

other groups was generally negative (see Q18. and Q19. section 10.4.3.2.). This does not indicate that the system is of itself not capable of being of value to students. What it does indicate is that for the majority of students in these groups it did not prove of value in the way in which it was introduced and used, both by students and tutors.

When considering specific aspects of the system electronic mail and conferences were identified as being the most beneficial with administration support not being much less so (see Q20. sections 10.4.2.2. and 10.4.3.2.). External databases were generally seen as of little value. This is a reflection of the lack of use of this facility by most students as most either never tried to access it or did not succeed in doing so. Many did not try to use it because they did not appreciate its potential and because they were unsure as to how much the cost of doing so would be.

Without question the system as it stood would benefit from enhancements both in technical terms and in how it is used by both students and tutors. Students, and particularly the non Syndicate 1-3 students, were positive in their belief that the system has potential but would benefit greatly from improvements (see Q23. sections 10.4.2.2. and 10.4.3.2.). Such suggested improvements included improving the reliability and user friendliness of the system itself, but also additional and improved applications such as delivery of materials, receipt and administration of student assignments and associated tutor feedback, enhanced tutor access, library access and greater course administration conducted via the system. Also mentioned specifically by some students was the need to ensure use of the system by a wider student population. This issue was supported by the positive response of over half the respondents to some form of compulsion of system use (see Q24. section 10.4.2.2.).

#### 11.2.4. Leadership Activity Analysis.

Much of the evidence considered here emanates from the author's personal experience in developing the use of this system within the distance learning programmes. He was

involved in introducing the system to many of the students, acting as syndicate tutor to several syndicates and in leading many of the specific activities available on the system. In addition he was involved in regular discussion with all tutors and administrators involved in the system's use as well as those responsible for the system's administration and maintenance.

The level of tutor input and support for the system and its activities varied considerably from programme to programme, and from activity to activity. In terms of syndicate or cohort support, the Inter-Company Syndicates 1-3 and Syndicate 7 had the greatest regular and long term support. For these Syndicates the tutor was proactive in encouraging the system use for peer support and mutual encouragement and used the system to maintain regular contact with each student via e-mail and general group support conferences. A similar level of support was available initially for the Tailored cohorts, but this reduced after about twelve months. There was a reduced level of support for the remaining Syndicates and no support given to the Open cohorts.

This support was not only provided through the medium of the HELP system, but through attendance at the face-to-face workshops, telephone calls etc.. In other words it was used as one, albeit a major, medium for developing an ongoing relationship with the students in each Syndicate or cohort individually and collectively. In addition to general communication and contact the syndicate and cohort tutors were involved in setting up and running (sometimes with specialist tutor help) various group based exercises and tasks that were designed not only to increase peer interaction, but to specifically help the learning process at a particular point in time. Such activities included case study analysis and preparation, examination preparation, subject tutorial support and specialist topic discussions. The success of the development of this relationship between tutor and student group cannot be verified quantitatively, but is supported by the degree of contact emanating from the individual student and the relationships established as expressed personally by many of the students involved. Such

conclusions are supported by the Lancaster experience (Hardy et al,1991).

Given that these students were not totally remote from each other, did meet face-to-face with either their fellow group members or others at workshops and on other occasions, as well as communicating via HELP, they might be expected to see HELP as an inferior but useful substitute to face-to-face for use in between meetings. However responses indicated about a third of students feel that the medium was at least as good for help with course related difficulties or for intellectual exchange. In terms of help from tutors half of Syndicates 1-3 and over a third of remaining students felt conferencing was at least as good as telephoning (see Q29. and Q30 section 10.4.2.3.). In many ways this should not be a surprise as telephoning peers and, especially tutors, can be a very frustrating experience as individuals are often not available to answer phone calls. In a CMC system, however, where individuals are regularly checking messages and e-mail, replies can often be obtained at least as quickly as by telephone and with much less hassle. Such a response suggests that the students were expecting more from the system than they experienced, which in turn suggests that either it did not have sufficiently high a profile within the programme, or it was not sufficiently well supported by the tutors.

It can be clearly seen from the system usage data that the Syndicates with the greatest use correspond to those with greatest tutor input. However this does not prove cause and effect, but it does suggest at least a positive link.

#### 11.2.5. Summary of Waggoner's Analysis.

This analysis has begun to highlight some of the weaknesses of the HELP system as developed and utilised in this study, but does also indicate some successful aspects and potential for enhancement.

The first stage of the evaluation highlights the need for the students to learn to modify their group working behaviour



from that which would normally operate in a conventional face-to-face environment to that required by the HELP system. At the same time highlighting any modifications in the system itself that will aid such group working.

What is clear from this study is that such working can and has occurred in some situations. It is only observed where a group of students has persevered with the system over a period of time and has been encouraged to do so by proactive tutor input. The medium requires modification of interpersonal and group skills to those required in conventional settings. There has been little guidance given to students in this respect, indeed tutors themselves were needing to learn this by experimentation along with the students. It is clear that this is a major weakness in the use of the HELP system as observed.

Most students on Henley's programmes show themselves to be generally competent at working in groups in conventional face-to-face settings and it is reasonable to assume that the students involved in this study are not an exception in this respect. However, they appear to find it difficult to adapt these skills to this medium. They have difficulty in identifying and fulfilling their personal group role and in developing a sense of interdependence. To a great extent this stems from a lack of regular commitment to the specific task from all members of the group. It seems to be much easier to sit back and do little in this medium than it is when face-to-face with peers, as one student has said, "it is instinctively easier to leave it to someone else than is the case in face-to-face".

What this suggests is that there is a need for specific training for students, not only in the mechanics of the use of the system, but also in the skills of communicating and group functioning within this medium (Harasim, 1987).

The pattern of use of the system together with the observed student reactions again indicates that the system can and does have value. What is seen is that the system can have value in creating general, long term peer support and encouragement as witnessed by the Syndicate 3 sub-group

working conference, and that it can also have added value in terms of additional learning input. In the latter case specific activities need to be carefully planned and timed to link closely with the students' study plan and also need to have close tutor supervision and/or involvement. If this can be achieved then the students will be responsive and will undertake further activity on the system of their own volition as was observed with Syndicate 2 and their Integrated Examination preparation.

Whilst the way in which the system is used needs to be addressed, so does the technical aspects of the system itself. The ease and reliability of communication, whilst not totally within the control of the college, is nevertheless a major concern. Students will not persevere indefinitely as it takes up their valuable time for something that, particularly for novice users, they are as yet unconvinced will give them benefit. Once in the system it needs to be simple and easy to use. There is much evidence from students that this is not seen to be the case. Computing technology is now advancing at such a pace and many students are used to this advanced state in their workplace that many see the technology of HELP as antiquated and off-putting. The indication is, therefore, that a CMC system needs to be a current, state-of-the-art system that is as 'user-friendly' and efficient as other commercial software that most students regularly use. Furthermore, if tutors are going to be more supportive of, and encouraging to, students then they need to be trained in how to communicate in this medium and how to use it in the group learning process. Without this training tutors will be unable to instil enthusiasm in students for the activities which is a prerequisite to greater individual commitment.

### 11.3. Turoff's Evaluation.

This aspect of the evaluation considers the stages of development through which both the providing institution and students have progressed in the development and use of the system as part of the distance learning process.

### 11.3.1. Access to the System.

Clearly no success will be achieved if the various parties to the system are not able to gain access to it. This has been shown to be a genuine problem throughout the duration of this study. From the initial questionnaire 61% of those students who had attempted to access the system had experienced problems (see Q12a section 10.3.3.2.). This situation did not improve with time. The final questionnaire showed 92% had experienced such problems at some time or other (see Q5. section 10.4.2.1.).

Henley in conjunction with Brainstorm Computers provided the system mounted on a host computer at the offices of Brainstorm in London. This was intended to be accessible to users twenty four hours a day and three hundred and sixty five days a year. In the event students experienced difficulty on occasions with system breakdown, either of the modem or of the main computer. Of students who used the system 28% experienced problems with Brainstorm's modem not responding and 25% experienced connection to the Brainstorm computer only for it to refuse to log them onto the system (see Q5. section 10.4.2.1.). Such situations often occurred during the evenings, at night or at weekends. These are the times when the equipment was unmanned and thus action to rectify any problem was not forthcoming, but it was also at these times that the greatest student use might be expected to occur.

Communication for the student was to be via the commercial telephone network. Brainstorm intended the major access to be via British Telecom's PSS or Dialplus facility and provided sufficient connections to, in practice, allow as many students who wished to access the system simultaneously. Initially some 34% (see Q11b. section 10.3.3.2.), and latterly some 44% of students used this route (see Q6. section 10.4.2.1.). It was acknowledged that not all students would be able to make use of this channel of communication and so initially a single PSTN line was also available. This proved another problem with so many students using this channel that many often found the line engaged and

thus were often not able to connect to the system when they wished. The reasons for the choice of PSTN were mixed. For those from the London area the call charges were the same as for PSS, but incurred no standing charge nor the hassle of setting it up. For others who were claiming charges back from sponsors it was often simpler to recharge PSTN costs than those for PSS. For most it was simply less time consuming and less hassle to use PSTN.

The equipment at the student's end was clearly the student's own responsibility. Henley provided guidance as to the specification required and latterly provided a discounted purchase facility. However, most students already had their own personal computer or use of their employer's personal computer. What many did not have was a modem and communication software needed to connect their computer to the telephone network. It was in this aspect of the connection that most problems were encountered. From the pre-experience questionnaire 61% who had attempted to use the system had experienced problems with telecommunications (see Q12a section 10.3.3.2.). This figure eased over the course of the study but still 42% of students in the post-experience questionnaire reported such problems (see Q5 section 10.4.2.1.).

The success of achieving the required level of access is mixed. Whilst many students have acquired access to the system many, particularly from the Open programme, have not. Of those who have acquired access many have done so only with difficulty. Henley have provided access to the system for all students, but what they have not achieved is an easy access for the majority of students, nor have they convinced a significant majority (particularly from the Open programme) of the value in so doing.

### 11.3.2. The Mechanics of the System.

Having mastered the means to access the system the student needs to learn to master the mechanics of the system itself. To this end, the institution needs to provide assistance in

the form of readily available technical assistance and advice.

The first hurdle for the student is to feel comfortable in using a computer. In this case this was not a problem. Many students felt easy with computers, 85% rating computers on the positive side of neutral on a scale of Terrible to Wonderful. Many students had not only good experience with computers, but many (61%) also had experience of e-mail, bulletin boards or other conferencing systems (see Q18. and Q20a. section 10.3.3.3.). By the end of the study 81% of students used a computer at least once a day in the normal course of their work (see Q33. section 10.4.2.4.). Thus learning to use the system should not have been a major concern to students. In the event, learning to use the system, if anything, proved easier than students generally expected. When asked to rank on a five point scale with 1 being Hard to Learn and 5 being Easy to Learn, firstly their expectation as to the difficulty in learning to use HELP, and then their experience in so doing, non Syndicate 1-3 students gave a median ranking of 4 on both counts. Syndicate 1-3 students expected it to be harder to learn with a median ranking of 3, but found it easier than expected with a median ranking of 4 (see Q25. section 10.4.3.2.). This aspect did not appear to change over time as when similarly asked of their experience to date in the pre-experience situation the overall student median ranking had been 4 (see Q16a. section 10.3.3.4.).

However, this does not give the full picture. What it does is to indicate that most students did not have a problem learning to use the basic facilities and to be able to move around within the system. Most students felt comfortable sending mail (96%), or participating in a conference (80%). When considering some of the more detailed, but still important, facilities such as downloading (39%) and uploading text (15%) to and from the student's computer the situation was different. This indicates that the level of technical assistance and advice provided by Henley was not sufficient for the degree of complexity involved. Such assistance came in several forms. Firstly there were written guidelines given to each student when they registered to use the system.

These were seen to be quite helpful by 60% of students, but 30% found them not helpful (see Q27. and Q28. section 10.4.2.2.). Secondly there was telephone assistance available from both Henley and Brainstorm which often proved valuable, particularly in solving major problems. Thirdly were the on screen instructions accessible via the normal menu system.

As has been demonstrated elsewhere, in order to gain full benefit from the system the use of facilities such as downloading and uploading of data are required (Emms and McConnell, 1988). It is facilities of this nature that clearly caused problems for students. Many struggled to achieve downloading, often expressing their frustrations to Henley staff, whilst others did not even try. Many of those who succeeded only did so with the help of specialist work colleagues (see Q17. section 10.4.2.1.). Most did not even attempt to upload. It is in these areas that Henley and Brainstorm found difficulty in advising students. The reason for this was that most of the problems encountered arose as a consequence of the communication between the user's computer and the host which was dependent upon the user's modem and communications and wordprocessing software. If all users had adopted a standard modem and software then Henley and Brainstorm could have provided specific detailed advice and help. As it was students used a wide range of modems and software, most of which were capable of fulfilling the required function, but because of the number of these combinations neither Henley nor Brainstorm were able in most cases to give specific help either in written or verbal form.

As with the first stage of development, success with this stage is also mixed. Whilst most students who have made a serious attempt have managed to master the basics of the system, few have managed to master the more advanced facilities that are needed to gain full benefit from the system. To this end Henley provide technical assistance and advice via the telephone or e-mail to help the student with the basic facilities, but have not solved the problem of helping students to use the more advanced facilities.

### 11.3.3. Learning to Communicate in the System.

It is a commonly held belief that CMC is simply a convenient written replacement for the verbal medium. Whilst it can be treated in this way such communication will be poor, and this is one reason for many people discarding the medium (Mason, 1988). It follows that there is a clear need to learn new skills in communication when using this medium. Turoff (1989) expresses this when he says:

"A successful writing style requires the use of paralinguistic cues to replace non-verbal ones. For people to succeed in relating to others, they must learn to express the social-emotional content of what they are saying. This has been found to be extremely crucial to being able to build a team atmosphere and to aid the ability of groups to reach consensus. This aspect is extremely crucial for geographically dispersed teams working together."

Administrative staff generally do not need to enter into open debate, but are more concerned with discussions on an individual basis using e-mail. This does not require the same degree of new skills. What they do need to learn is how to use the medium to communicate the administration of the programme to advantage and reduce the amount of paperwork that needs to be produced and transmitted via the postal system. This is not working at present in this case study.

Whilst this study has not been able to look in detail at the method of communication and the skills required in the use of the system, it is shown that tutors have given little or no guidance to students in this respect, principally because they have not even identified, let alone mastered, these skills themselves. What is also shown is that most students have not learnt the specific skills required for this form of communication.

#### 11.3.4. The Development of Roles.

This study has not set out to look in detail at the experience of Henley's students in the development of specific roles in group working. It has looked at the attitude of the individual to the group and the success or otherwise of the working of those groups. This has already been considered under Riel and Levin's fourth and fifth criteria.

The general consensus is that whilst such groups of students are more than capable in managing themselves, allocating tasks and roles and producing successful outcomes to tasks when in a face-to-face situation, when confronted with organising themselves in a computer mediated environment then they experience problems. Turoff (1989) suggests that the process:

"is not unlike a group working together in face-to-face meetings, but it often requires much more explicit definition of the resulting roles."

One student expressed it as follows:

"the course (ie the MBA) is all about training effective managers and thus we should have been able to organise ourselves without being pushed. We should have been able to delegate ourselves."

The indication is that this is at least partly caused by the asynchronous nature of the medium leading to a significant time duration for any such organisation to be determined and agreed with the associated temptation on the part of group members to skimp on this aspect of the task. Thus there is a need for greater support from the tutor to help this process to take place. This would require either teaching about the process of group working using this medium and its differences to working in a conventional medium, or a more specific tutor input to help develop the specific roles and organisation of the group.



This begins to indicate the providing institution's possible role in terms of supporting a system such as HELP. If it wishes to encourage group working then it clearly needs to provide a greater tutor support for individual groups and individual exercises than it would for conventional situations. Without this additional input, particularly in the early stages, then the process is likely to take such a long time period that the participants either try to short cut the forming and norming stages of group evolution and jump straight into the storming or performing stage with its associated weakening of the group's effectiveness, or feel that no progress is being made with the preliminaries and give up all together.

In situations where the purpose of the specific exercise is of a tutorial nature such as the module tutorial conferences, then it is vital that the students see this as being something that will provide assistance. Student responses indicate that Inter-Company Syndicates 1-3 had a neutral attitude to the value of this conference type whilst other students had a marginally negative attitude (see Q3. section 10.4.3.1.). Thus it would seem that whilst some individual students found this valuable in helping to solve a specific problem, simply providing access to a tutor in this way is of itself not sufficient to help the majority of students. The indication is that the tutor again needs to be more proactive, possibly attempting to preempt problems rather than help resolve them once they have occurred.

What is shown by this evaluation is that there are often different skills required to successfully develop a networking community within a CMC environment compared to those required in a conventional setting, and that CMC cannot simply be seen as a direct replacement for face-to-face experience. It is evident that it is essential for the providing institution to be aware of this and to determine how it will teach firstly its own tutors and administrators these skills, but secondly how the skills will be conveyed to the students.

This stage of development has not been achieved by many of the students, if indeed by any. Some of the Inter-Company

students have certainly developed their skills in this area to a degree as evidenced by their successful undertaking of various exercises. Henley also has not fully developed its ability to use the system to its full potential to support and tutor distance learning students.

#### 11.3.5. Developing Improvements to the System.

Turoff's final stage of development is reached when users are able to understand the system sufficiently both as individuals and as groups to enable them to make suggestions about possible improvements to the system that would enable them to increase their effective use of the system. Whilst this is a stage of development that will continue to evolve with ongoing use, most students who had made any use of the system and completed either of the questionnaires were able to make positive suggestions of potential improvements.

Such improvements fall into two categories, those of a technical nature relating to the system and its facilities, and those relating to the way in which the system is used and promoted by Henley. Over the course of the study the system evolved and developed as many of the suggestions from students, and others generated by Henley itself, were considered and some were implemented. Some of the technical improvements that were implemented related to improved access facilities, improved conferencing and e-mail facilities, and easier and more efficient interrogation facilities for external databases. Methods of use of the system were also being developed by Henley in conjunction with ongoing student feedback such as the introduction of tutorial based subject conferences for most programme modules and the group based exercises to help students prepare for case study based examinations.

Whilst such developments were often not seen as a total success by users, they were moves in the right direction in developing the system to be of greater benefit to students and of help to Henley in moving its programmes forward.

#### 11.3.6. Summary of Turoff's Evaluation.

This evaluation has shown that whilst progress has been made by both the student and the institution arm of the evaluation, that development at each of the five stages on both arms is limited.

Whilst improvements have been ongoing during the course of the study, much more still needs to be done to refine the system itself to make it more user friendly and more reliable, and student access still needs to be made easier to achieve. If the system is to become a generally used tool then more students need to be prepared to make the effort to acquire access and to learn how to use the system. In order for this to happen the institution needs to convince the general student population that there are potential benefits to the individual student to do so. This raises the issue of compulsory use and how this could be achieved, and associated with this, the degree to which CMC based exercises should be directly linked to course work and assessment.

There is still a learning gap for most students between learning the mechanics of the basic functions of the system and those of the more advanced facilities. Consequently most, if not all, the advanced facilities are rarely used.

Learning to communicate in the medium requires special skills. These are generally learnt by trial and error by both students and staff. If the medium is to be successful then the teaching of these skills needs to be addressed.

Whilst the students involved in this type of programme are generally capable of organising themselves to successfully function in teams, it is clear that in this medium they need assistance particularly during the initial stages which was not generally forthcoming in this study. This is a reflection on the observed role of tutors. Where there was an observed proactive input from the tutor, particularly in the early stages, then greater activity success was observed. Thus the role of the tutor has been shown to be vital to success. The issue this raises is the form that this role should take and how the tutors should be prepared to fulfil this role.

The system has been continually developed during the period of this study, but clearly needs much further development if it is to be of widespread benefit. Students are experienced enough to make many suggestions in this regard which the institution should continue to consider. What the institution needs to determine is the extent of role of such a facility within the delivery of distance learning programmes.

#### 11.4. The HELP System and the Henley MBA Programme.

The proceeding sections of this chapter have attempted to evaluate the use of the HELP system from three different perspectives. To produce an overview of these evaluations and to form a composite summary of them Harasim's (1990) simple five point framework for considering the application of on-line education to postgraduate management education, as set out in section 7.6 will be used.

##### 11.4.1. Facilitates Many-to-Many Communication.

It has been shown in the literature that there is appreciable benefit to individual students from collaborative learning with fellow students and with tutors. This not only assists in the development of competences particularly in terms of application of theory to practice, but also stimulates a broader learning and understanding of knowledge.

This research has shown that CMC has the potential to support such interaction among students and that the HELP system has done so to some degree. The system has proved its potential to create many-to-many communications in some situations:

1. This is most evident when a well-specified task is set for a specific group of students. It needs a clear objective that the students see as of real value to them and where tutor support is proactive particularly in the early stages.

2. It has also been demonstrated that when students have become used to using the system and have experienced successful tutor lead exercises conducted through it, that they may then generate their own activities eg the case study examination exercise and the Syndicate 3 working group conference that ran actively for over three years.
3. Tutor lead academic subject tutorial conferences have been shown to succeed to a limited degree, but this needs regular tutor commitment and a core of active students. The weakness of this was that such activities were generally not focussed on a specific long term group of students but was available for individuals to join for the period that the subject was relevant to them, ie there was no commitment to a group.

The major causes for the limited degree of success are as follows:

1. There was insufficient integration of the CMC into the overall course design. Some individual exercises were successful, but were not fully integrated into an overall course design.
2. The HELP system itself was not sufficiently robust in design with many features, particularly the more advanced, being too difficult to use.
3. The host computer and its peripheral communications hardware was not adequate for reliable and fast system operation and quick and easy access.
4. Initial student training in the technical use of the system, whilst not a major issue, did cause some problems, particularly among students who were unable to attend initial demonstration sessions at Henley.
5. Tutor support was generally sufficient neither in encouraging use and in teaching communication skills in the medium, nor in committed academic support. Tutors

were themselves having to learn how to operate and utilize the system as they went along.

6. Many student groups failed to attract a sufficient quorum of active users to allow on-line activities to succeed. It was beyond the scope of this research to identify what constitutes such a quorum.

#### 11.4.2. Place Independent Communication.

If CMC is to be a means of facilitating collaborative learning in a distance education environment, it needs to provide the user with the means of contributing to and learning from this process from wherever the user geographically happens to be. Subject to the technical weaknesses mentioned above, the HELP system has shown itself capable of meeting this objective. In the case as studied users have mostly used one regular location for accessing the system. For the majority of students this has been their home, but for a sizable minority it has been their workplace. Users have been widely geographically dispersed, mostly around the UK, but with several regular users in continental Europe and some occasional accesses from further afield.

The communication technology has, despite weaknesses, shown itself capable of supporting place independence. Nevertheless the unreliability of this technology as observed has been shown to be a factor in discouraging some users. Some of this unreliability is due to the general level of technological advance, although this is rapidly improving, but much of the observed unreliability was due to the hardware and communications facilities of the host computer at Brainstorm. It is essential that the host facilities are not only able to run the system without overload from the user demand slowing response rates, but that the communication facilities allow as many users who wish to do so to access simultaneously.

#### 11.4.3. Time Independent Communication.

This requirement has been shown from the literature to have two major benefits. Firstly that users can access the system at their own convenience at any time of the day or night or day of the year. This has the added advantage for international use that international time zones become irrelevant. Secondly it allows a more equitable opportunity to all users of equal participation as users have both time to reflect on their responses without fear of the discussion leaving them behind, and also of not being crowded out of a discussion by dominant personalities.

The system as observed has provided the means of freely asynchronous communication. An inspection of the timings of many of the conference contributions and e-mail messages show a wide range of submission times. The heaviest observed user often found it convenient to access the system at four and five o'clock in the morning when most other users would not wish to be awake! Some groups of users did experiment on occasions with synchronous 'meetings'. This had limited success, but did prove useful on occasions to help pull some asynchronous group work to a speedy conclusion.

The research has not been able to investigate to any extent the second benefit, that of equitable opportunity to all participants.

#### 11.4.4. Text-Based Communications.

The restriction of the communication to being only text-based is claimed by some proponents of the system to have a number of cognitive benefits. Harasim (1990) summarises these. This research has not attempted to investigate these.

By its nature the HELP system allows only one string of messages as a continuous file without branching. This has been shown from conference printouts and student responses to avoid some of the confusion to which Harasim refers. It does, however, tend to make conferences very long and difficult to wade through if looking for specific comments

etc.. In some exercises conferences became so long that the tutor closed them down and started a second or third volume with users printing out the closed volumes. In some exercises a form of branching was achieved by separate conferences being created for specific activities e.g. Benetton (Appendix 2) and other case study based exercises. This practice appears to have worked well.

#### 11.4.5. Computer Mediated Learning.

Harasim (1990) sees this aspect as combining the previous four, but also looks to some additional added value in its own right. It combines some of the attributes of other forms of communication e.g. text-based through the distribution of course materials, and audio-based e.g. telephone. The Henley system has not attempted to distribute course material through the HELP system. The technology as it stood would not easily allow the transmission of such amounts of information at reasonable cost and most users would need to print off the text to easily read it. In this form HELP would simply be a surrogate, and a poor one at that, for conventional print and post. However the advance of technology may well change that. This case has shown that CMC can replace telephone usage for such functions as tutor support and inter-user support in similar ways to the telephone, but more significantly by creating many-to-many communication. An additional benefit that has been demonstrated is the automatic generation of accurate transcripts of discussions particularly within such group based exercises as the examination case study preparation exercise and also in the case of subject tutorial conferences where a record of questions and answers is built up for following students to access directly without need of further tutor involvement.



### 11.5. Summary.

Using the frameworks described and developed in chapter 8, this chapter has attempted to evaluate the use of the HELP system as a tool in the delivery and support of Henley Management College's distance learning based MBA programmes.

Initially analysis was undertaken by assessing the use of the system against Riel and Levin's five criteria. This predicted that the Inter-Company programme use (as adopted for Syndicates 1 to 3) could well prove successful, that the Tailored programme use would struggle to succeed, but that the Open programme use would fail. Analysis of system usage data and student attitudinal data generally confirmed these findings. The assessment also highlighted many of the shortcomings that caused the lack of success.

Waggoner's evaluation process was then applied and highlighted some weaknesses which had caused the use of CMC to be less successful than was initially intended. The principle area of weakness identified related to the functioning of the group and the role of the tutors, but also to the technical capabilities of the system itself. Some strengths were also highlighted.

Thirdly the process derived from Turoff was applied. This highlighted the need for a clear policy on the part of the provider of the role that such a system should play within these programmes. It also highlighted the need for much further development in the application of the use of CMC within the Henley programmes, and of the role of the tutors and their training requirements. It did, however, show that there is potential for the system if both it and its methods of application are suitably developed.

Finally a review of these findings was made using Harasim's five point framework as described in section 7.6.

## CHAPTER 12. THE NATURE AND DEGREE OF SUPPORT REQUIRED FOR SUCCESSFUL IMPLEMENTATION OF CMC.

A major conclusion that can be drawn from the Henley case is that the tutor role plays a significant part in the success or failure of the use of CMC to develop group working and support students in such programmes. However, to suggest that this factor alone determines the degree of success would be a major oversimplification of the evidence.

Whilst there has been little, if any, research undertaken and published based upon cases similar to Henley's as undertaken in this research in the sense of introducing the use of CMC into post graduate, post experience distance learning based programmes, there are three other reported cases where similar variables are at play. In this chapter these three cases will be used alongside the findings drawn from the analysis of the Henley case to propose and develop a set of hypotheses describing the variables that affect the degree of tutor support required for successful implementation of CMC within such programmes.

The three cases used are the Lancaster University Management School case (Hardy et al, 1991, and McConnell, 1994), the Birkbeck case (Hartley et al, 1991; Akehurst and Tagg, 1993; and Hartley et al, 1994), and the Open University MBA case (Nixon and Salmon, 1995).

### 12.1. Overview of the Three Additional Cases.

#### 12.1.1. The Lancaster University Case.

The Centre for the Study of Management Learning have run a part-time MA in Management Learning for some years, but from January 1990 it was decided to run a second version replacing some of the face-to-face contact time with CMC (Lancaster used the term Computer Mediated Communication Systems, CMCS). It is the experience of this programme that is utilised here.

The part-time programme is a well established programme of two years duration requiring attendance at six residential workshops and 1-day tutorials about every 4 to 6 weeks. Additionally participants submit five pieces of assessed work. The tutorial groups, together with their tutor, help the individual members select the assignment topic, support them in undertaking the work, and then collectively assess the end product. It was into this environment that CMC was introduced.

"It was believed that by replacing the 1 day tutorial meetings with CMCS the educational principle of encouraging participants to take responsibility for their own and other people's learning could better be supported. For example it was felt CMCS would allow group wide communication to continue in between the workshops as well as supporting tutorial group work" (Hardy et al, 1991).

A full description of this case is set out in the study report (Hardy et al, 1991) and further description and analysis is provided by David McConnell (McConnell, 1994).

#### 12.1.2. The Birkbeck Case.

The Department of Occupational Psychology at Birkbeck College offer Master's degree courses and diploma courses in Occupational Psychology and Organisational Behaviour. The Master's course is a two year part-time course and the diploma a one year part-time course. These courses were first offered in 1989 in a traditional face-to-face mode with attendance on two evenings per week, and in a CMC supported distance learning mode, but in 1992 the option of delivery was extended with the introduction of a conventional unsupported distance learning programme. All three versions have identical syllabi and assessment by examination. Additionally both the part-time and the CMC supported distance learning versions have two assessed essays. All three versions receive the same course materials, but the part-time course receive tutorial support and teaching which the CMC supported programme receive via CMC and via weekend residentials held once a term.

A full description of this case is set out by Hartley (Hartley et al, 1991 and 1994).

#### 12.1.3. The Open University Business School Case.

The Open University has been offering courses supported by CMC for some years, but in 1992 CMC support was introduced to some of the MBA modules. This was undertaken in the belief that "supporting and encouraging networking through computer mediation could widen and supplement this (existing MBA distance learning MBA programme) package and ultimately enhance the learning process" (Nixon and Salmon, 1995). It is experience gained from this MBA programme that is used here in order to provide a valid post graduate, post experience comparison with the other three cases.

By 1995 three courses were using CMC in an explicit and supported way as a thrust of the teaching strategy, whilst eight others were using it as an optional and supplementary part of learning. In this case CMC was seen as a way for a small number of tutors to "teach" potentially large numbers of students by promoting student reflection and interaction and encouraging more independent learning. Specific applications included collaborative team working based assignments (Nixon and Salmon, 1995).

#### 12.2. The Variables Considered.

The evidence from the Henley case suggests the importance of three variables that affect the degree of tutor support required to develop group work and student support:

- i. The background from which the programme is developed.
- ii. The nature of the specific exercise type.
- iii. The degree of integration of the system into the programme.

#### 12.2.1. The Background from which the Programme is Developed.

The evidence from the research undertaken in this thesis into the Henley HELP system indicates that significant leadership is required in supporting student groups in on-line situations. Kerr (1986) supports this view when she says "strong leadership has been shown to be required in this medium if groups are to be successful ..... The lack of adequate leadership is one of the factors sometimes responsible for conference failure; unless a moderator sets an agenda and keeps the group working to its goal, nothing much will occur". This does, however, beg this issue of whether such leadership could come from within the student body rather than from the tutor. McConnell picks up this theme and based upon the Lancaster experience takes the counter view to that of Henley, "our experience to date tells us that leadership of this kind is not necessary in CSCL contexts. If the group has a real purpose for being on-line and has established a sense of collective ownership of the conference, and if issues of power and control within the group are part of the group's focus and agenda, then the concept of leadership will not only be unnecessary, but it will be unhelpful" (McConnell, 1994 p146).

This view is born out of the situation where each student group involved is already an integrated group working closely with a tutor in determining individual assessment, helping each other complete it, and in collectively assessing the output. Such activity is born out of the pre CMC supported part-time programme where such groups already operated, and by the initial and subsequent termly residential workshops that form a vital and integral part of the CMC supported programme. What this is doing is to create firstly what Riel and Levin describe in their forth criteria (see section 8.4.1) as a sense of responsibility to the group and, secondly flowing from that their second criteria, a well-specified task. It is from the part-time face-to-face background that these activities have evolved and lead to a situation where CMC is effectively used to allow previous activities, suitably adapted to utilise CMC's characteristics, to continue in a way which would otherwise not be possible with participants remote from each other.

Birkbeck found that the role played by tutors was crucial in terms of encouraging input by students. It was shown that when tutors were more active and their comments more personalised in their response to students rather than being blanket responses to students' comments, then student activity increased greatly. Not only did this level and nature of tutor involvement generate student response directed to the tutor, but "students themselves also tended to comment far more on one-another's contributions, seemingly as a result of the increased level of tutor-student interaction" (Hartley et al, 1994 p.27).

Birkbeck's approach to the CMC version of their programme is, like Lancaster's, to replace part of the face-to-face content of the programme with CMC based activity. However like Henley, they have found the need to emphasise Riel and Levin's fifth criterion of strong leadership (at least initially from the tutor) in order to generate significant positive and valuable student activity.

The Open University have also realised the importance of tutor involvement in developing successful CMC application in MBA programmes (as well as in others). Their study has led to the development of a model to describe the nature of teaching and learning through interactive computer mediation. In this the tutor's role is seen as paramount, but with carefully defined but changing roles in each of the described five stages of student development that they have observed (Nixon and Salmon, 1995). This ultimately leads to the tutor taking a less proactive role and allowing the students to determine the learning process. Like Henley, the Open University have approached the introduction of CMC from the basis of a distance learning programme.

The initial conclusion that can be drawn from this evidence is that there is no direct link between the background from which the programme derives and the nature and degree of tutor support required. What is shown is the importance to provide significant tutor input in the early stages of student involvement with CMC in order to help students over what is evidently a longer and more difficult process of the

development of group identity and purpose than is the case in face-to-face situations (see 11.3.4). It also suggests that where the programme is built around some face-to-face contact, where a positive and practical introduction with hands-on experience is given especially at the induction into the programme stage, and where peer interaction and group working are expected by the students as the norm, then after the initial stage of high tutor involvement in CMC, that students are more likely to take greater responsibility for CMC activity. These aspects may be described as the initial presence of a positive student attitude to the value of CMC in the learning process. Thus it can be suggested that whilst there is no direct causal relationship between these two variables, that there is a proxy relationship in that these conditions generally are met in programmes that originate from a face-to-face background, but not so in distance learning based programmes.

There is evidence to suggest that the degree of tutorial support required for the successful use of CMC is dependent firstly upon the student expectation of the need for peer interaction and group working as an integral part of the learning process, and secondly upon the degree of practical introduction to the CMC system at the induction stage of the programme. These would appear to be more likely to be present in programmes originating from a face-to-face background as shown diagrammatically in Fig.12.1.

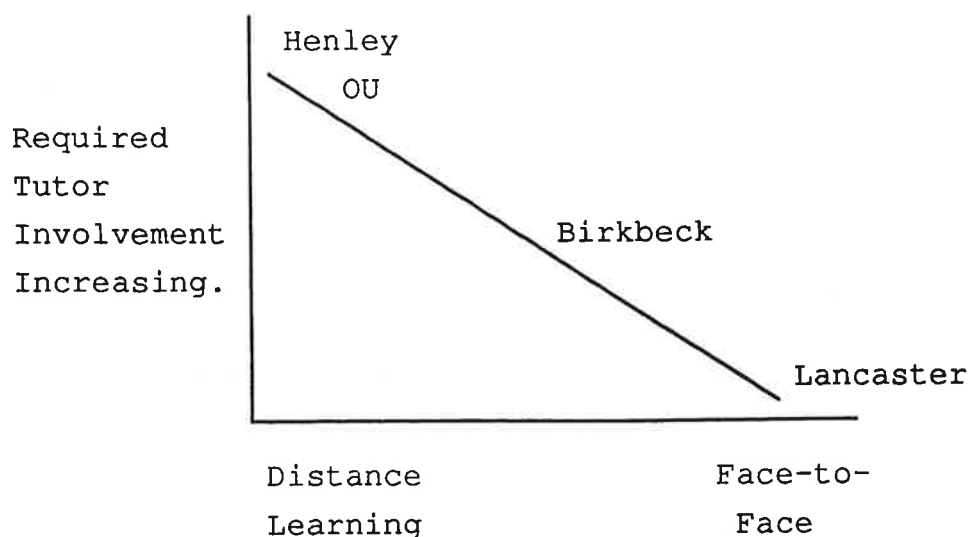


Fig.12.1. Required Tutor Involvement v. Programme Background.

#### 12.2.2. The Nature of the Exercise Type.

It has been a traditionally held belief that CMC applications require strong leadership if groups are to be successful (eg Levin, Kim and Riel, 1990 and Kerr, 1986). Kerr (1986) says that because of the nature of the medium "the absence of pressure to sign on-line and participate, creates the need for strong and active leadership. The lack of leadership is one of the factors sometimes responsible for conference failure; unless a moderator sets an agenda and keeps the group working to its goal, nothing much will occur".

Whilst there is evidence to support Kerr's view, the evidence from this research and the other three cases being considered is that this cannot be supported unreservedly, but rather is valid in varying degrees in different situations. McConnell (1994) says that the Lancaster experience indicates that "if the group has a real purpose for being on-line and has established a sense of collective ownership of the conference, and if issues of power and control within the group are part of the group's focus and agenda, then the concept of leadership will not only be unnecessary, but will be unhelpful". As this situation evolves the reduced level of tutor leadership is probably explained by an increasing level of student leadership.

What this does indicate is the need for varying degrees of leadership by tutors at different stages of the group development and for differing activities on the medium.

The model developed from the Open University experience (Nixon and Salmon, 1995) identifies a continuous process of gradual progression through five discrete stages that are similar in nature to those developed by Johnson and Johnson (1991, and section 5.6.2) from new student to independent learner. This model requires support from tutors in each stage. However, the nature of this support varies from stage to stage as does the degree of support with the greatest concentration required in the early stages as shown in Fig.12.2.



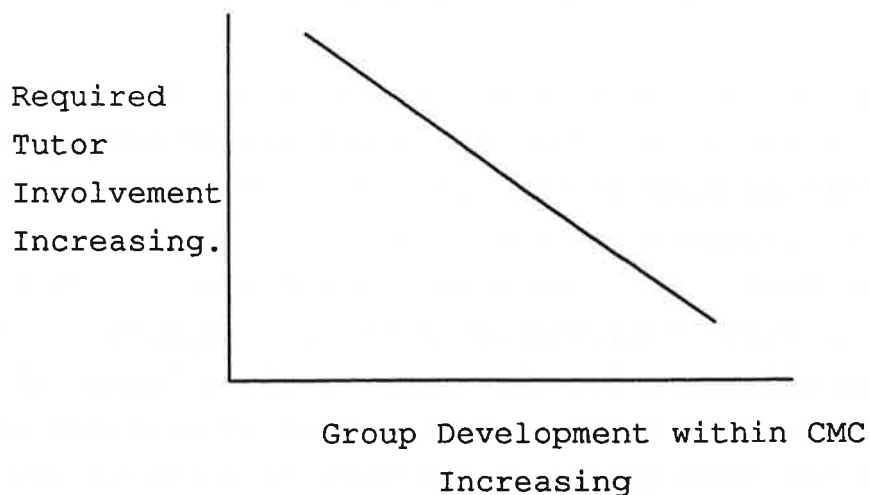


Fig.12.2. Required Tutor Involvement v. Group Development within CMC.

The Birkbeck experience led to the conclusion that "the role played by tutors in moderating teaching conferences also emerged as crucial in terms of encouraging input by students. Tutorial support was found to be higher than previous research suggested. Tutors tended to contribute between 20%-30% of all messages on the conference topics at Birkbeck whilst Harasim (1987) found tutors accounting for between 10-15% of the messages" (Hartley et al, 1994). Whilst this might at first sight seem to support Kerr's statement, it is pertinent to note that Hartley relates this observation to "teaching conferences" and not to all CMC use. She does, however, add that when tutors respond to students' messages on a personal, one-to-one basis that a far higher level of student input is generated. A further observation was that "students themselves tended to comment far more on one-another's contributions, seemingly as a result of the increased level of tutor-student interaction" (Hartley et al, 1994). Such contributions were between four and six times higher when tutor-student interaction was high rather than when it was low.

Within the type of programmes considered in this thesis CMC can be used in a variety of ways. The Henley case used seven different applications (see 9.3.2). The more successful

examples of these different types of application show differing degrees of tutor involvement.

There is no one accepted way of measuring tutor contribution in CMC conferences. The simple measure of number of contributions made is the simplest form to undertake, but makes no allowance for the length or brevity of individual contributions. This could be incorporated by counting the number of words contributed in total. However, even this makes no allowance for the value or significance of contributions in their context. Such an analysis would involve the interaction of a number of separate and complex variables the undertaking of which would require the development of a complex methodology that is outside the scope of this research.

For the purpose here of developing theory, a simple analysis of numbers of contributions made is adopted in preference to word counts as this gives a greater indication of the frequency and regularity of contributions which is an important ingredient in the richness of dialogue.

An analysis of the contributions made by tutors, conference administrators/managers, and by course participants in 25 Henley CMC conferences that were considered to be successful has been undertaken (Appendix 6) to identify the degree of tutor involvement. Using the simple ratio of the number of contributions by course participants to tutors, a difference between the exercise types can be seen as shown in table 12.1.

| Exercise Type                                   | % of Contributions by |        |          |
|-------------------------------------------------|-----------------------|--------|----------|
|                                                 | Tutors                | Admin. | Students |
| Subject Tutorial and<br>Examination Preparation | 27                    | 14     | 59       |
| Case Study                                      | 13                    | 12     | 76       |
| Group Work                                      | 0                     | 0      | 100      |
| Specialist Topic                                | 12                    | 13     | 75       |
| Coffee Room                                     | 7                     | 43     | 50       |
| General Informal Group<br>Mutual Support        | 1                     | 0      | 99       |

Table 12.1. Tutor Contribution by Exercise Type.

As might be expected, the exercise types exhibiting greatest tutor involvement were the Subject Tutorials and the Examination Preparation exercises (these latter being a modified form of subject tutorials but with a specific focus of examination preparation).

The Special Topic exercises varied in nature from student requested and run with only college administrator support, to specifically designed and tutor run exercises. As might be reasonably expected, these do show a range of tutor involvement from 0% in one case where the originating student ran the conference with college administrator support, to 26% in another.

The Case Study exercises (described in detail in Appendices 1 to 3) produced tutor contributions of 13% with administrators providing a little less than 12% of contributions.

The Group Working conferences show the least level of required tutor input. These consist of two types of exercise. The first is for general informal group mutual support exercises in which the objective is primarily to allow a medium of communication through which the students can maintain contact with each other for mutual support and encouragement as well as sorting out specific course details. The second is for the undertaking of specific group tasks.

In these cases group preparation of case study analysis is either in preparation for a face-to-face workshop or for examination. What is important to note with these exercises is that they all involve students from the Inter-Company programme where the groups were originally formed at introductory face-to-face workshops and where the need for group working was introduced along with hands-on introduction to CMC as a means of supporting such group work. Attempts to run similar exercises with other groups of students who did not benefit from such introduction either failed to attract student interest from the start or, after a brief initial flurry of interest supported by intensive tutor input, failed to develop into anything significant and participation dwindled and ceased.

There is also evidence to suggest that when a group of students becomes used to using the medium for such group based work that the group will generate its own applications. In one such example, a group faced with preparing an analysis of a case study in advance of a face-to-face workshop, set up and (in their own perception) very successfully ran their own exercise with no tutor or administrator support. This exercise was subsequently repeated by the same students to produce an analysis of a case issued in advance of an examination. This also adds support to the first hypothesis in that the Inter-Company programme worked much more on the basis of integrating the benefits of face-to-face teaching into a distance learning environment than did other Henley programmes. It also supports the third hypothesis in that the objective of the particular application was seen by the students as an integral part of their preparation for the examination and that CMC was the obvious medium to use.

At first sight the Coffee Room observations appear to suggest that this type of conference requires a high level of support to succeed, indeed higher than any other type. However, if this situation is investigated more closely, it is found that most of this activity is from administrators. An investigation of the text of the conference shows that much of this administrator, and indeed much of the tutor, activity was for social communication between themselves as much as between themselves and students. Thus it cannot be said that

all this staff activity was required to make the conference successful, or indeed even contributed to increasing the success. On the contrary, it may reasonably be assumed that the degree of success of the conference did not require such levels of tutor and administrator input.

The evidence from the Henley case thus indicates that the required tutor input is dependent upon the type of exercise being undertaken as shown diagrammatically in Fig. 12.3. The diagram shows that some exercise types will attract student use with low tutor involvement irrespective of user experience. Other types of exercise may attract experienced, but not inexperienced, users with low levels of tutor input. However, with increased tutor support inexperienced users will also be attracted. A third group of exercise types requires a significant degree of tutor input in order to attract students irrespective of experience. However, it has been noted that this analysis is based predominantly on the evidence of successful conference exercises which have, in many cases, been undertaken by experienced CMC users or at least users who have been introduced to the system in a face-to-face environment.

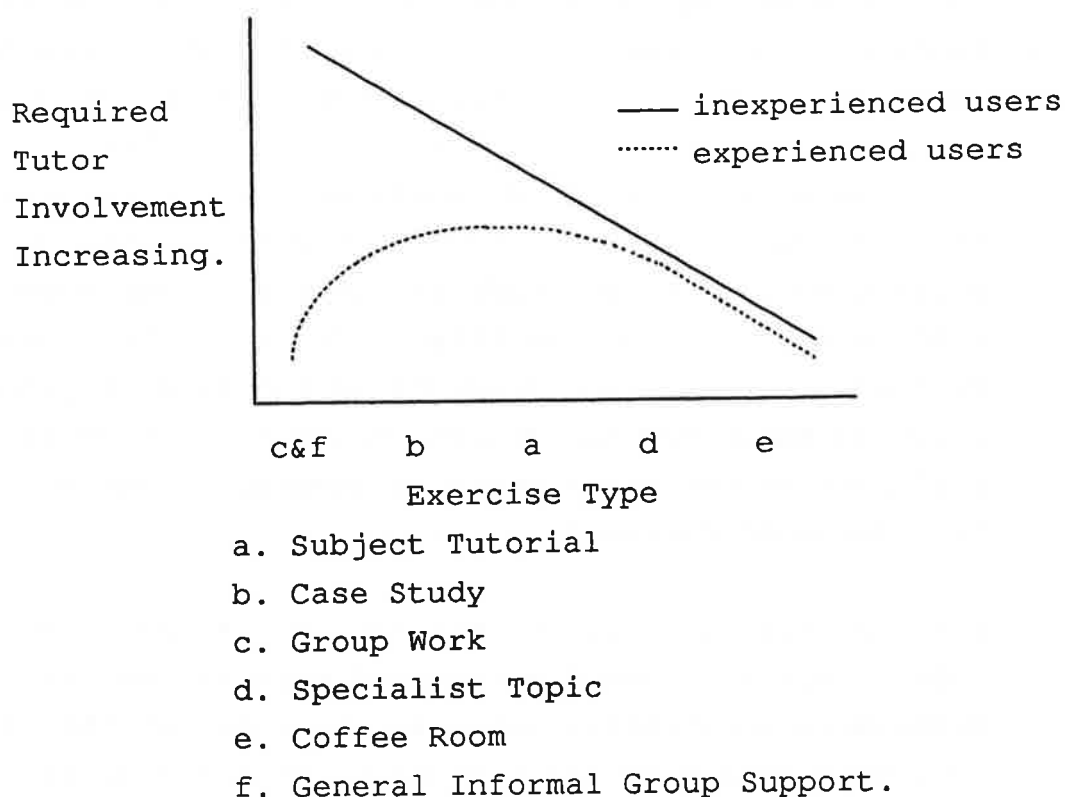


Fig.12.3. Required Tutor Involvement v. Exercise Type. User Experience Level.

In the case of inexperienced users, although the evidence is more tenuous, there is some indication that the relationship propounded by this hypothesis is stratified according to user experience. There were many attempts on the part of tutors to set up and encourage general informal group mutual support conferences with various groups of students from all three student groups observed in this research, but despite much tutor input the vast majority of conferences that developed an ongoing value to the group members were those involving the first three syndicates of the Inter-Company programme who formed the majority of users with significant experience in the use of the system.

Several case study conferences were run in which non Inter-Company students were encouraged to participate, but take up from these students was generally poor (eg see Appendix 3, the Stratton Financial plc case, where the tutor and administrator contributions were over four times those in other case study examples). There were no cases of group work conferences being set up by such students, although one such student did set up and run a successful specialist topic conference on a non-syllabus topic that attracted interest (much of it from Inter-Company students) and produced a worthwhile exercise. However, the subject tutorial conferences that involved significant tutor input did attract some of these students. The other exercise type that did attract more of these students was the Coffee Room. Whilst staff did participate in this conference, their part was much more on a par with the students in the form of general social chatting which had the general value of helping participants feel part of the wider Henley organisation and dispelling the loneliness of distance learning.

One explanation of these observations is that a few non Inter-Company students persevered with the system and discovered a potential value in its use, but then found that they were in a very small minority of their peers and thus did not form a viable minimum number for many exercises to succeed. Thus they migrated to the exercises with wider audiences and tutor involvement:

What this evidence would suggest is that there is a requirement for significant tutor involvement with any group of students in the initial stages of introduction to, and use of, CMC. This is needed in order to help the development of the technical aspects of access and use of the system, in the development of appreciation of potential of the system as one tool in an integrated approach to distance learning, and in the early stages of group development within a CMC environment. However, where there is a lack of user experience then certain exercise types are more likely to be successful in developing that experience than other types. This in turn suggests that programme design incorporating CMC should concentrate certain types of exercise in the early stages of the programme, introducing others only as the group develops and CMC use becomes accepted and used as an integral part of the overall programme. At this point students are more likely to take over leadership roles from the tutor whose role (as shown by Nixon and Salmon, 1995) will need to change.

#### 12.2.3. The Degree of Integration of the System into the Programme.

The nature of MBA programmes has been shown (see chapter 2) to be changing from the teaching of management theory using a teacher centred approach, to the development of management competences in the learner through the adoption of more open learning approaches (see chapter 3). It is within this context that CMC can be seen to have the potential of a valuable role to play. Thus its application needs to be seen more in the support of collaborative learning and less in the delivery of teaching. If this is the case, then CMC needs to be well integrated into the overall programme design. Harasim (1989) suggests that CMC has the potential to encourage collaborative learning, but that it's use does not guarantee it. She states that "careful design of the on-line educational environment is critical to ensure that learners will engage in active and purposeful learning interactions". Without this careful design such student benefits are less likely. Based upon her extensive experience of the use of

CMC in collaborative learning situations Harasim (1989) goes on to suggest that "learning approaches taken from face-to-face designs need to be reformulated or reconceptualised to take into account the unique characteristics of the on-line medium".

There are many instances where CMC has been used simply in an attempt to replicate within a distance learning environment a face-to-face experience that has been shown to be successful, or simply to provide a medium whereby students can interact with each other. There have been instances of this in the Henley case. In most such instances these exercises have had little success unless they have been given additional support or been used with student groups who are already accustomed to the use of CMC being an integral part of their programme. This would suggest that even the limited degree of success that was achieved may not have benefited the students as much as might have been the case if the application had been more fully integrated into the programme. However, where there has been greater integration of the exercise into the overall structure of the programme, eg some case study and groupwork exercises as discussed in 12.3.2, then less tutor involvement has been required. The greater readiness of the students to participate in these circumstances would suggest a greater perception on their part of value.

Of the three categories of programme identified in the Henley case (see section 10.2.3) the first, ie Syndicates 1-3 of the Inter-Company programme, experienced the highest degree of CMC integration into the programme with the other two groups experiencing decreasing degrees of integration. The analysis of the investigation shows that the less integrated into the programme was the CMC activity the less student activity was observed despite similar levels of tutor support. This would suggest therefore that in order to obtain the same level of activity in the less integrated programmes a greater level of tutor support would be required.

The Lancaster experience is an example where CMC has been well integrated into the fabric of a programme, including the assessment process in which the group not only help each other select their individual assignment topics, but then



play a part with the tutor in the assessment of each others work. McConnell (1994) describes the programme as "based on a philosophy of openness rather than expediency. It emphasises considerable social interaction and cooperation between the learners (who we prefer to call 'participants'), and between the participants and the staff running the programme". The tutors' role was seen to be facilitators and supporters of both individuals' and groups' learning (Hardy et al, 1991), with the groups themselves taking greater control as their understanding of the system and experience of using it developed (McConnell, 1994). This suggests that full integration of the use of CMC into a programme is a factor not only in determining the degree of successful use of the facility, but that as the students gain experience of the system then the extent of tutor involvement required is reduced.

Birkbeck have a less integrated use of CMC than Lancaster. They include teaching conferences to cover issues arising out of the written modular material which usually take the form of exercises. Other conferences cover aspects such as course queries, departmental activities, exchange of ideas between students and general social contact. Birkbeck's conclusion, supported by Mason (1989), is that "computer conferencing is best seen as an additional means of communication rather than as a substitute" (Hartley et al, 1991). Such integration is therefore more than a surrogate for face-to-face, but arguably not so integrated as the Lancaster case.

Based on their experience of the Open University case, Nixon and Salmon (1995) suggest that there is a need to allow a shift of the locus of authority and control from tutors to students as students become more competent and confident in using the CMC system. This can only be achieved as the students become familiar with both the nature and potential uses of CMC and also the value of peer interaction. This implies a significant role for CMC within the programme that cannot simply be an addition or bolt on optional extra to the basic programme (Kirkwood et al, 1996). It also implies that as the locus of authority and control moves towards the students group then the role of the tutor both changes and reduces.

The evidence from both the Henley case and the other three cases would thus indicate, as shown diagrammatically in Fig.12.4, that the degree of tutor support required for successful use of CMC is dependent on the degree of integration of CMC into the programme.

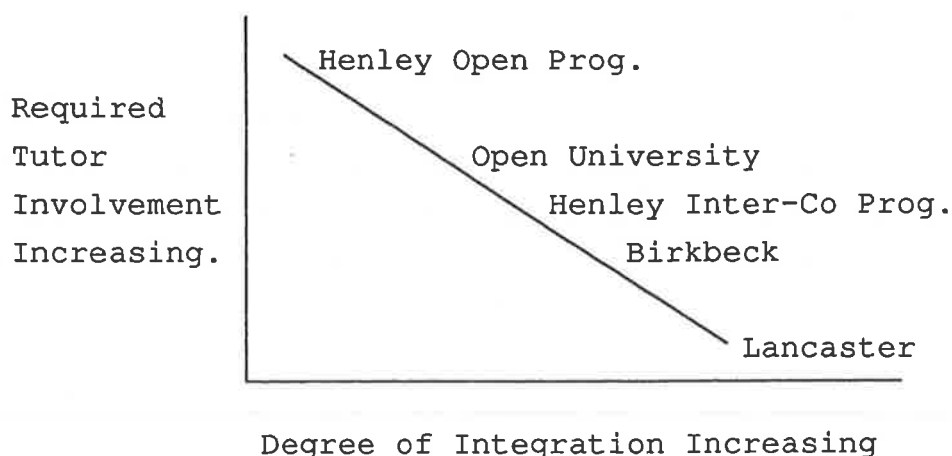


Fig.12.4. Required Tutor Involvement v. Programme Background (Revised).

### 12.3. Review of Hypotheses.

There is always going to be a problem in generalising theory relating to the use of CMC in different programmes run by different providers in that there is such a wide variety of means of use and types of exercise undertaken. This analysis has shown that there is need for a great variation in tutor support depending on the degree of familiarisation of students with the system and its use, and with the type of exercise being undertaken. Thus there is a need for greatest direct tutor involvement in the early stages of a programme and at this stage certain exercise types are more appropriate than others. What may also be true is that, given the differing characteristics of the different CMC systems, some systems may be more appropriate for some types of exercises than others. In other words, the system itself may well be a factor in determining how CMC should be used to best advantage.

In the light of the outcome of this research analysis the initially stated hypotheses need to be modified as follows:

The nature and degree of tutorial support required in any programme to develop successful implementation of CMC is dependent on a variable that relates to the position on the spectrum (ie distance learning to face-to-face) from which the programme originates. The Henley and Open University cases both come from the distance learning end, the Lancaster case from the face-to-face end, and the Birkbeck case comes from both).

However, this variable alone cannot be expected to give sufficient explanation, and the evidence suggests two further variables:

i. The characteristics of the differing exercise types within the programme, eg subject tutorial, case study, group work exercise, specialist topic, coffee room, technical support etc., and the degree of student familiarity with CMC require differing levels of tutorial input. However, greater tutorial support is required in the early stages of group development within a CMC environment which in turn will dictate the timing of different types of exercise within the overall programme.

ii. The more CMC is integrated into the programme the less tutor support is required as less coaxing of students to participate is required and as students more readily take over some of the leadership responsibility. As the required tutor support reduces, so its nature changes.

#### 12.4. Summary.

Based upon the analysis and findings of the Henley case study a set of hypotheses were propounded. These were then considered further and modified in the light, not only of the Henley experience, but also of three other cases of the use of CMC within post graduate, post experience distance learning based programmes.

## CHAPTER 13. REVIEW OF THESIS.

This chapter will review the work of this thesis and in focusing on the study propositions and questions asked draw conclusions concerning the value of the observed use of CMC specifically within the Henley distance learning MBA programmes, but also how it may be developed to greater benefit more broadly within these and other similar programmes. In doing this comments will be made concerning the methodology adopted in this research and suggestions made for further research.

### 13.1. Thesis Overview.

This thesis concerns the value of the use of Computer Mediated Communication within Henley Management College's distance learning based MBA programmes as a tool in their delivery.

It commences in chapter 2 by considering MBA education, how it has evolved over recent years and is still changing in response to market demand. It is shown how the move is away from teacher centred to student centred learning, from purely knowledge based teaching to competence development and practical application in an increasingly rapidly changing business environment. Associated with this is a decline in demand for the full-time programme and a rapid increase in demand for the part-time and distance learning programmes together with a requirement for greater freedom for the individual student to determine not only when and how he learns but also what he learns coupled with the need to interact with tutors and also with peers in order to learn from each others experience and from practical application in the workplace.

To understand the need for distance learning based programmes and how CMC may be used to help in their delivery, the nature

of distance learning is then considered in chapter 3. There are many descriptions of distance learning and the major ones are discussed. Distance learning is shown to be one of two subsets of distance education, the other element being distance teaching. Attempting to define distance education is rather like attempting to pick up a jelly - it is almost impossible to get your hands all round it - and you finish up only holding part of it. Most attempts at a definition are not contradictory, rather focussing on different aspects of its nature. The most appropriate general definition for this study is therefore, not surprisingly, concluded to be that coined by Holmberg which covers the generalities of distance learning without attempting to be too detailed. Confusion over the definition has been compounded in recent years by the emergence of a further term, 'open learning' (or education). Whilst in its truest sense this may well have differences from distance education in a number of respects, notably in the tendency towards student centred learning and open access and away from teacher centred learning, in the context of this thesis it was considered to be a subset of distance education.

To consider delivery of Henley's distance learning programmes in particular, it is necessary to develop a framework to consider their function and operation. Chapter 3 continues by considering three such frameworks, each approaching the issue from a different perspective; Independence and Autonomy from the student's perspective, Industrialisation from the providers perspective, and Interaction and Communication from the perspective of the communication between these two. In the rapidly changing demand for the form of delivery not only is there a growing demand for distance learning, but each of the modes of delivery themselves are evolving. Chapter 3 concludes by considering Convergence theory which states that this evolution is bringing the different forms of delivery closer together as providers of both forms of delivery attempt to include the benefits of the other form into their programmes. This may ultimately lead to the point where the two become one and the same product. If it is used in both forms of delivery in the right way and not simply as a poor replacement for face-to-face activities, CMC could be a tool to help bring such a process to fruition.

In the changing delivery environment it is important to consider how the success of delivery may be effected by the way people learn. Consideration is given in chapter 4 to the various theories of learning. This culminates in Honey and Mumford's (1986) work which is particularly relevant to this thesis as it particularly relates to business managers who form the vast majority of Henley's students. The chapter concludes that MBA programmes require learning of Marton's (Marton and Saljo, 1976) deep active form which in turn requires interaction with others and experience of all phases of Honey and Mumford's learning cycle.

The interaction between students in the form of group and collaborative working (a traditional aspect of Henley's delivery) is now common with many MBA programmes. Thus there is a need to consider how groups function and what makes them effective, particularly within a learning environment, so that the part that groups may play in the development of these programmes may be determined. Chapter 5 investigates the theory of groups and group working. Group development theories can be categorised into one of two types. Sequential Stage theories, of which Tuckman's (1977) is probably the best known, suggest that groups progress through discrete stages of development. Recurring-phase theories suggest that the various stages of development that groups pass through are often repeated, groups being influenced not only by their membership but also by their external environment. The conclusion is that neither theory is totally adequate, but that reality being complex lies in a combination of the two. What is clear is that, whilst in a face-to-face environment groups often struggle to become established, in a CMC environment such struggle is greater and more frequent. In order to reduce this struggle and lessen the likelihood of failure there is a need for significant tutorial input at least in the early stages of development as is indicated by the theory developed in chapter 12. For this to be satisfactorily achieved, tutors need to be aware of the aspects of working in this medium that are different from face-to-face. As this is not always the case, effort needs to be made to train the tutors.

The focus for this research is the single case study of Henley's HELP system as used within their MBA programme. Thus in order to consider the background within which this is set chapter 6 describes the programme and its various forms and evaluates them against the frameworks set out in chapter 3. It is concluded that CMC can enhance peer support and hence personal morale. It can be a means of further developing group working and can help in the move towards convergence and in the provision of the third generation MBA. CMC and its potential is considered in chapter 7 where its benefits and shortcomings are considered. The major conclusion is that whilst CMC could be, and indeed may sometimes be, simply an electronic surrogate for face-to-face, then it is unlikely to be successful. What is needed is a fundamental rethink of the delivery process and a need to fully integrate this new medium into any programme (see chapter 12).

### 13.2. Study Conclusions and The Issues Raised.

The study set out to answer the following questions:

1. How, in this case (Henley's MBA programmes), is CMC used to develop and encourage peer support and shared learning? If it does not, why not?
2. In what other ways could HELP be utilised to improve this phenomenon?
3. How might these uses be developed/modified/improved to increase the benefits of this phenomenon?

To indicate the degree of success of CMC within the Henley MBA programmes the evaluations of section 6.3 will be briefly reviewed in the light of the study findings:

#### i. Independence and Autonomy.

Whilst the desirability for complete individual independence in MBA programmes has been questioned, what is accepted is the desirability for collaborative learning and the provision of independence to the individual and group within this. This study has shown that, whilst CMC has only been partially successful in this case study, it has the potential to significantly enhance such learning within a distance education environment if it is seen as a novel medium and not simply a replacement for face-to-face methods of delivery.

#### ii. Industrialisation.

The basis of Peters' (Keegan, 1990) theory is the delivery of programmes to a mass market by standardising content and delivery and allowing tutors to support greater numbers of students. The outcome of this study is to question whether such an objective, without balancing with other factors such as the desirability of collaborative learning, is desirable. What this research does indicate is that if CMC is to be successful in MBA distance education, then significant tutor input is required in supporting student groups in on-line situations.

#### iii. Interaction and Communication.

It is in this aspect that CMC has been shown to have its greatest potential impact in supporting many-to-many communication involving students, tutors and administrators. Not only does this include the conventional grouping within such programmes, but it opens the opportunity for such groups to be widely geographically dispersed. Not only does this allow student groups to be drawn from such wide areas, but it also allows for tutor and other expert input worldwide. Thus it can greatly enhance the third generation MBA objective of internationalisation.



#### iv. Convergence.

Whilst third generation MBA objectives are towards the provision of bespoke programmes for individual clients and thus away from standardisation, it does also imply a moving away from the polarisation of face-to-face and distance programmes and the use of aspects of both within one programme. Whilst in this case study CMC has only had limited success in this respect, it has demonstrated its potential in facilitating such programme design by allowing some of the best of the face-to-face extreme to be conducted at a distance, and some of the best of the distance extreme to be enhanced by collaborative learning.

At a more specific level the evidence from the evaluation of the system does show that the HELP system has in some instances helped develop and encouraged peer support, although it is important to say that it is not the system itself that has generated this effect, but rather the way in which students have been encouraged to use it by tutors. The most successful use of the system, both from the perspective of the amount of use made of the system, and from the perspective of the students' post-use reactions to it, has occurred with the first three Syndicates of the Inter-Company programme. It is with these groups that the greatest tutor input and support existed and for whom most exercises that were specifically designed were made available. Probably the most successful individual exercise observed was the examination preparation case exercise that was tutor supported and which subsequently led to the same group of students setting up for themselves and using a similar process to help each other collectively prepare for the actual examination. Having experienced successful use of the system such as this, several groups of students then used the medium as an ongoing and regular means of communication with each other which formed a process, not only for helping to keep in touch with each others progress, but which acted as a real source of mutual encouragement.

Tutor led subject tutorial conferences (in which a tutor was regularly participating to answer specific questions relating

to course material) were also successful in some cases. These indicate the need to think fundamentally about designing applications. Such a facility does not have the immediacy of a telephone conversation, (but then neither is the tutor always available on the telephone), but should provide an answer within 24 or 48 hours. The answer is then recorded and is available instantly for any other student at any time. It also provides for students to help each other and also to supplement the tutor's response with the benefit of their own experience. This is a simple example of additional benefit over and above a face-to-face replacement and which both students and tutors are slow to realise. However, such facilities would seem to require a minimum threshold of activity in order to become valuable. This highlights the issue as to how this circle can be broken. How can students in particular be encouraged to utilise such a facility until it has acquired a viable level of activity, but how is such a level of activity to be gained without a critical mass of students prepared to make the initial input to create that viable level of activity?

Despite some positive results, many students either did not maintain their use of the system, or did not make enough effort to make it work for them even if they got as far as logging in to the system. This indicates five major issues.

Firstly the need for the students to be positively introduced to the system at an early stage in their induction into the programme as a whole. This needs to be not simply how to access the system and how to move around it, but how to use it to enhance the benefits of the programme and ease the inevitable pressures that such a programme creates. Students also need to be convinced at this stage that the system is an integral and vital implement in their tool kit for successful completion of the programme. One means of helping to achieve this is to integrate the use of CMC into the assessment process, but this should not be seen as sufficient motivation of itself.

Secondly the requirement that the facility must be fully integrated into the programme and not simply used as a poor replacement for face-to-face interaction or an optional extra

that may help a few students communicate with each other. CMC, at least in its current state of technical development, is not an ideal medium for the delivery of large quantities of course material. It is, however, potentially good at allowing tutorial support and guidance not only on a one to one basis, but also on a one to group basis in which the group members also positively interact with each other. What is different from the face-to-face situation is that it is asynchronous and takes place continually over time thus allowing greater consideration of ideas before contribution and also input at any time during the learning process. It also has value in that it can be a means of including expert input from anywhere in the world without the expert leaving his/her desk. It has been shown to have value in specific group activities, but these need to be linked directly to the current learning activities of the group of students. Other general interest activities appear to have a value, but are likely to be of added value rather than prime value.

Thirdly the system needs to be easy to access, easy to move around - to use a hackneyed phrase, needs to be user-friendly - and needs to be reliable. All the facilities of the system need to be easy to understand and to use. MBA students are busy people with many demands on their time of which studying is only one. As such they will not afford time attempting to use a system that they perceive to be unreliable and slow to use or which takes a lot of time to learn sufficiently before any real benefit can be gained. This leads to a perception that time can be better spent in other ways. To this end well designed windows based systems may well reduce the perceived learning curve.

Fourthly the need to teach users (including tutors) how to communicate in this medium. It requires different skills and a different approach to face-to-face communication. There are no visible or audible components, and interactive written communication is not always easy to learn to use to maximum advantage. Such skills need to be taught to both students and staff.

Fifthly is the importance to realise that on-line groups need different support from face-to-face groups, particularly in

the early stages of formation and development when group development appears to be more difficult and slow. The indication is that on-line groups are more likely to fail at this stage. There is also evidence to suggest that on-line groups tend to follow a development pattern more akin to Gersick's model and need additional spurs to encourage their progress.

In considering this list of issues it is perhaps encouraging to compare them with the list of requirements for such applications that Emms and McConnell (1988) produced some years ago. In essence the issues raised here reflect those raised by Emms and McConnell, but have taken them further in both detail and implication. This can only be an encouragement that progress is being made in the greater understanding of this subject.

The results of this research show many indications of failure of the use of HELP to live up to expectations. Some of the reasons for this have already been discussed. However, if Turoff (1989) is correct with his theory relating to the implementation of CMC into a programme then it would be unreasonable to hope to introduce a fully fledged system into a programme in one step, rather perhaps it should be introduced progressively. This is not necessarily to say that a group of students embarking on a programme with such a full integration of CMC would not be a success, but more that the provider needs the progression of learning to integrate something less than full CMC as a means of moving progressively along a learning curve.

The evidence suggests that CMC can be comparatively easily used to support current methods of delivery (ie teacher centred), but needs to be integrated carefully in a student centred approach, partly because providers still need to learn how to use what is to many of them a novel medium, and partly because students (and many teachers) still expect a teacher centred approach. It has been said that the MBA is moving into its third generation, that of project based action learning with increased international input (Carnall, 1995)). This is the objective at Henley. To this end CMC has the potential to significantly aid this process in that

its use can encourage, if not compel, active learning; can provide the medium for group working and interaction; is not restricted by geographic location or national boundaries; and can open up opportunities for leading exponents worldwide to participate with little effort.

### 13.3. Research Limitations and Further Research.

This research set out to be a case study of a relatively little researched phenomenon. That is the use of CMC within a postgraduate, post experience MBA programme where the participants are mature business managers in mid-career often with very clear ideas of what they want from the programme (which is not principally the degree certificate) and have high levels of expectation and demands of it. Most major previous work has been carried out with college students (eg the Virtual Classroom) or undergraduates (much of the Open University experience). Exceptions are the Lancaster work with their MA in Management Learning programme, the Birkbeck work with their MSc in Occupational Psychology and Organizational Behaviour, and the Open University with their MBA programme. These have been used alongside the Henley case in chapter 12 in the development of theory relating to the nature and degree of tutor support required to encourage successful group work and student support in CMC.

The major weakness of this research is that its original objective had too broad a scope and attempted to cover too wide a range of CMC activities which has caused less depth to be achieved than was initially intended. What this does highlight is the complexity of successfully introducing CMC into such programmes and the degree of effort that will be required to do so.

It was unfortunate that the major group of users included only Syndicates 1-3 of the Inter-Company programme as this meant that there was not the degree of commonality between respondents of both questionnaires that had been anticipated. To that end less analysis has been possible of a longitudinal nature than had been intended. In retrospect, more insight into the role and use of learning styles could have been

achieved if individual students learning styles had been measured.

As a single case study the research does not attempt to test theory or hypotheses. What it does attempt to do is to create insight on the use of a phenomenon that is being increasingly seen as a potential new tool in the delivery of distance learning MBA programmes. It is shown to have the potential, if correctly used, to help bring about a convergence of the face-to-face and distance learning forms of delivery of these programmes, particularly those of the third generation, and provide assistance to practitioners in implementing such systems. In this respect the author believes that this research adds to the general body of knowledge within this field. By comparing this case with three others of similar applications further theory has been developed.

This particular study has looked at the use of CMC with three groups of students on programmes that are only now beginning to move into the third generation. It does not look in depth at such things as the nature of communication or of intra-group interactions within the medium of CMC, nor does it look at the detail of programme design or the changing nature of the programmes themselves. These are aspects that warrant further research.

This study has also raised other questions that further research may well address:

1. To what extent do individuals' learning styles affect their attitude to using CMC.
2. Is there any significant difference to the success of application in the different system architectures available, or do different architectures lend themselves to different emphasis of use?
3. Are the implications for programme design different if CMC is to be applied to traditionally delivered programmes compared to distance learning based programmes?

4. In order for CMC to be successful it is important for most students to be regularly active within it. It is suggested that one means of achieving this would be to make its use compulsory, possibly by requiring its use within the assessment process. What, if any, are the advantages of this and do they outweigh any disadvantages?

5. This research has shown that CMC based groups are more vulnerable to failure in their early stages of development. In what other ways are group dynamics different in this medium?

6. It has been shown that there are strengths and weaknesses in asynchronous communication. This requires more in depth investigation.

7. It has been indicated that CMC as a medium provides more equitable opportunity for all users. This needs to be confirmed.

8. Given that if CMC is to fulfil its potential it needs to be seen as a novel tool in its own right and not simply a surrogate for face-to-face methods, more research is needed into identifying a theoretical basis for the design of its detailed applications.

9. Methods and techniques of communications in CMC are different from those in face-to-face situations. These differences need to be further identified and methods evolved to teach them to both students and tutors.

10. The theory developed in chapter 12 relating to the varying nature and degree of tutorial support required in the successful use of CMC in such programmes needs further substantiation.

#### 13.4. Conclusions.

The study had two propositions that followed from the three questions initially posed and considered above. These were as follows:

1. The provision and facilitating of certain CMC activities provides a medium that students will use to enhance the learning process through greater interaction with each other, with tutors and with the course administrators.

2. The nature and degree of support of the provider's facilitation and support will influence the degree of benefit to students.

This study has, I believe, shown these propositions to be true in this case and suggests that they will hold true in a wider context. However, further work will be required to substantiate this in the wider context.

As a final conclusion, I believe that this research supports the view of Feenberg (1993) when he says:

"CMC can create a new kind of planetary classroom in which students and teachers from all over the world will be able to meet and exchange ideas. Distance education need no longer languish in the shadow of conventional college teaching. Given imagination and support, the learning society will emerge as a global computer network."



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APPENDIX 1.

The Losehill Case Study.

## THE LOSEHILL CASE STUDY.

### CMC CONFERENCE UNDERTAKEN BY SYNDICATE 2.

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## 1. Introduction.

The Losehill Case Study CMC conference was run for Syndicate 2 of the Inter-Company MBA Programme. It was designed as an experiment to test the value of running a conference whose subject matter directly related to the course materials, in this instance Managing Markets, that students were currently studying.

## 2. The Conference.

The conference was designed around the Losehill case study as set out in the course materials for Managing Markets and was timed to culminate at the workshop at which all Syndicate 2 students were expected to attend. It was the intention that the conference should be designed such that participation would enhance the benefits of the workshop and that non-participation would reduce the benefits of the workshop. This was to be achieved by setting the students the task of using the conference as the medium for conducting a discussion leading to the preparation of a presentation to be made at the workshop.

The Losehill case is based on an outdoor activity centre in the Peak District National Park. The business is not currently successful and the task set in the conference is to prepare a business plan to put the business onto a more sound footing as defined by certain prescribed parameters. The prepared business plan is then to be presented at the subsequent workshop.

## 3. Management of Conference.

Students were given advance warning of the conference and its timing at a previous workshop. The conference was planned to run for four weeks from the 12th August until the 6th September. The workshop being scheduled for the 19th September. In the event the conference ran on until the 18th September. The conference was supervised by two members of

staff, one acting as the Conference Manager and the second as Conference Tutor.

### 3.1. The Conference Manager.

The Conference Manager's task was to oversee the administration of the conference in terms of ensuring the correct technical operation of the conference. The various activities were as follows:-

1. Agree the conference plan and timetable with the Conference Tutor and the programme manager for the students.
2. Ensure that the conference was set up and easily accessible to all participating students on, but not significantly before, the advertised start date.
3. Notify all students in advance of the conference, its timing, how it would operate, an outline of what is expected from the students and the conference's relationship with the subsequent workshop. This was achieved by E-mail.
4. Enter an introductory contribution to the conference. This was to include details of the conference's operation, timing etc. and to introduce the Conference Tutor. NB the Conference Manager was already well known to all the students, so did not need introduction.
5. Support and assist the Conference Tutor in the technical aspects of using the conference facility.
6. Maintain the on-going administration of the conference including the encouragement and support of the students. This required regular monitoring of the conference progress and the input of support, advice and encouragement by means of conference contributions as required.

7. Ensure that the conference contributions remained on the required theme, or themes and be prepared if necessary to create sub-conferences for side issues.

8. Finally, ensure that the conference was drawn to a satisfactory conclusion and close it down.

### 3.2. The Conference Tutor.

The Conference tutor's task was to coordinate with the Conference manager and to provide all the academic direction to the conference. The various activities were as follows:-

1. To devise the subject matter for the conference. In this case to adopt the Losehill Case Study from the study pack so as to make it suitable for use via a CMC conference that would culminate in an exercise at the subsequent workshop.

2. To introduce the exercise to the students in an initial conference contribution in a clear and concise way.

3. To encourage the development of the academic progress of the exercise throughout the duration of the conference by regular contributions aimed at supporting and adding to the discussion and at stimulating new thought and direction.

4. To endeavour to ensure that the conference produced its prescribed output for the following workshop.

5. To supervise the conclusion of the overall exercise at the subsequent workshop.

#### 4. The Task Set.

The Conference Manager, in her introductory contribution to the conference, explained to the students that they would need to have read the Losehill Hall Case Study and have watched the video, both of which were to be found in the Managing Markets course materials.

The Conference Tutor set the conference underway by introducing the case and focussing attention on an aspect of service sector marketing relating to the case. Five days later, she summarised the discussion to date.

At two weeks into the conference the Tutor set out the details of the group task to be completed using the conference as the medium, and the brief for the presentation that the group was required to make at the workshop. The text of this contribution was as follows:-

The following exercise must be completed as a group task.... so listen carefully and I'll begin.....

\*\*\*\*\*

Your team of marketing consultants (specialising in small businesses in the service sector) has been asked to advise Losehill Hall on their future plans.....

..... You are required to prepare an outline marketing plan for the next twelve months.....

You must present your findings (20 mins) at the marketing workshop to be held on 19-9-91 in Henley.

\*\*\*\*\*

In order to discuss these issues you are advised to create a new conference which will be the forum for your discussion.

It is over to you to take the lead now ..... but of course Amy and I will support you in your efforts.

## 5. Evaluation of Student Performance and Attitude.

The students who participated were each asked to complete a post conference questionnaire to determine their problems in participating in the conference and their attitudes to its conduct and to ways in which the system could be enhanced to enable the benefits of such conferences to be improved. A sample questionnaire is included in Appendix 1b. Each completed questionnaire was followed up by a telephone interview.

### 5.1. Student Problems in Participating.

#### Question 1: Serious Accessing Problems.

Of the six students who were active in the conference, five regularly accessed the system via Dialplus and of these five only one reported any access problems. This related to a five day period when he could not get into the system. The sixth student accessed the system via PSTN and had no problems until the last week of the conference when he was unable to access it at all. A seventh student accessing via PSTN, whilst able to get into the HELP system, was never able to get into the conference.

#### Question 3: Absence due to holidays etc.

The conference ran from the 9th August culminating on the 19th September at the workshop held at Henley. This was clearly a peak holiday period and kept some students out of the conference for periods when they were away from home. Table A1.1 indicates the extent of this factor.

|        |                                              |
|--------|----------------------------------------------|
| Duncan | none                                         |
| Bob    | 25%                                          |
| Peter  | approximately 3 weeks                        |
| Jane   | 2 weeks                                      |
| Steven | 16 days in August and 9 days in<br>September |
| Beth   | none                                         |
| Jenny  | none                                         |

Table A1.1 Periods away from home preventing participation by student.

Question 2: Downloading of text files.

There are many factors that affect the efficiency of use of the conference facility by users. Of these, one is the ability to download the text of a conference from the host computer to the user's personal computer. This allows the user to print the text or to read it on the screen as continuous text without the user instructions on conference control, that are permanently on the conference screens in the HELP system, interspersing the text and making reading less easy. It also allows the user the freedom to browse without incurring communications charges.

There was little success among the students in respect of downloading text files. Only one succeeded, two tried unsuccessfully and three did not even try. Of the two who tried and failed, both acknowledge that they should have succeeded, but were lacking in computer skills and did not persist. The three who did not try all maintain that the instructions given by Henley are not sufficient. One also suggested that he did not have time to learn.

## 5.2. Student Attitudes to the Form and Conduct of the Conference.

Question 4: Do you feel that this exercise was of value to your studying of the Managing Markets module?

Two students felt that it was, three felt it was of limited value and one felt it was not particularly valuable. The major reasons given for lack of value related to the timing of the conference relative to the time schedule for studying the module. Students were scheduled to study the Marketing module from the beginning of June until the workshop on the 19th September. The Losehill Case came in the early stages of the course materials, thus by the time the CMC exercise started the students had already worked through the case on an individual basis. Thus the CMC exercise became a review/revision exercise rather than being a current issue.

One student commented that the contributions in the conference did not expand a great deal on the course notes, and another that there was not sufficient learning material contributed and that the subject tackled was too broad. However, two students suggested that this was because of the subject matter of the conference, dealing with service marketing and not product marketing. This they found especially helpful saying that it provided a good overview of this subject area.

There was generally agreement that the conference took time to get underway, partly because students did not see the urgency to get involved early, nor did they sense any spur like an examination or assessment deadline. One student suggested that it was for this reason that the conference content never reached an advanced stage.

One student complained that there was limited interaction due to time delays between contributions and that this would be improved by greater control being maintained by the conference manager and tutor. Contributions need to be kept to the point and the structure of discussion needs to be controlled more tightly to prevent fragmented discussions, ie

several different discussions being conducted simultaneously within the conference, thus making confusing reading.

It was suggested by one student that participants are often sub-consciously afraid to commit their ideas to a permanent record, as in a computer conference. He suggests that there would not be such reserve in a verbal discussion in a syndicate environment where no such permanent record exists.

One issue that was directly addressed by one student, but which was referred to by all the students, is that for such a conference exercise to be a success it is essential that there is a total commitment from all the participants to regularly contribute.

Question 5a: Given that technical problems could be resolved, do you feel that there is a value in the concept of running CMC conferences of this kind based upon course material such as Losehill?

All the students replied in the affirmative. The issue relating to the timing of the conference in relation to the subject study programme was again raised.

One issue that was directly addressed by two students, but which was referred to by all the students, was that for such a conference exercise to be a success it is essential that there is a total commitment from all the participants to regularly contribute.

"needs more active discipline and more active participants."

"everyone must commit to contributing."

As a means of encouraging such commitment most students agreed that some form of formal assessment relating to participation in the conference would be a good thing as it would give a greater incentive to commitment to the exercise. It was suggested that such reward should reflect both the regularity of contribution and its quality. One student,



whilst agreeing to this concept, expressed a concern that such a system could lead to contributions being geared to gaining marks rather than to originality, ie contributions could be coloured and not spontaneous. A further specific suggestion was made to beneficially include CMC within the assessment process. This was that assignments (either individually or group submitted) should be prepared by team working and that teams would, where possible, meet regularly but would be linked through the on-going medium of CMC conferencing.

One student, whilst seeing a value in this form of use of conferencing, felt that sitting down with a group is far more constructive than conferencing. He would chose to spend two hours driving in order to have an hour's meeting rather than spend time on CMC. He commented that the medium of CMC had its limitations, one of which was that it was not a direct replacement for face to face meetings and that, if these were recognised, then there was value in the medium. He said he felt that CMC tended to be limited to an exchange of information rather than discussion. In the case of this particular conference, he felt that the exercise was too ambitious. The process could have been improved by the conference manager/tutor splitting the group at the outset into sub-groups with designated tasks. As it was, he felt that for him the benefits from this particular conference did not justify the amount of his time invested. However, he did acknowledge that others did appear to have achieved far greater benefit. He suggested that this is probably a reflection of the effort that he put into the conference.

Question 5b: Please explain any ways in which you feel the design and management of the conference could be improved.

All the students expressed the view that the conference required much more structure and a tighter control from the tutor and manager, as one student put it "the conference initiator should do more to structure discussions etc". It was commonly suggested that direction should have been given to individuals or groups to undertake specific tasks, and that a much greater control of group interaction was

required. It was acknowledged that this form of tutor input would definitely not be required in a face to face situation. In fact, this group of students have frequently and successfully undertaken similar exercises to this in a face to face situation, and have required no tutorial guidance as to how to proceed.

One felt that such direction should not have been necessary. He said:

"the course (ie the MBA) is all about training effective managers and thus we should have been able to organise ourselves without being pushed. We should have been able to delegate ourselves".

The general feeling is that because of the time duration for the conference to get going such tutorial input is required to speed up the process.

One student expressed it as follows:

"interaction in live groups forms more quickly. In CMC it takes much longer even though the group members know each other well. The 'getting to know you' time is a waste."

A second stated:

"conference 'leaders' (ie specially selected students) should be established beforehand, rather than a 'now over to you' approach, as was the case in the second part of the conference. Perhaps delegating different tasks to different people at the start would encourage more people to get involved. To some extent it is more necessary to delegate on CMC as it is instinctively easier to leave it to someone else than is the case face to face."

A third comment expressed a variation on this same idea:

"assign people to work in pairs on prescribed tasks within the overall framework. Discussions could be in E-

mail and then go into the conference with conclusions or findings."

A variation on this idea was expressed in which groups of no more than four students were assigned specific objectives to achieve within a conference. This would imply several simultaneous conferences. The tutor would then be responsible for directing the drawing together of these conferences to achieve the overall objectives.

Two of the students talked about the benefits of 'live' conferencing. 'Live' conferencing is the term that has been given by users of the HELP System to the phenomenon when two or more users are involved in a conference simultaneously. The system is not designed for this form of use and thus has some inherent weaknesses when used this way. Nevertheless, there are occasions when such practice can have benefit to the users. Comments were as follows:-

"live conferencing would be of value for two or three people to discuss a specific point, but this would probably need a manager to 'chair' the conference session."

"live conferencing would have been helpful eg bring more life and speed to the process, would reduce the disjointed conversations in normal CMC conferences."

This student admitted that he was often guilty of creating the disjointed conversation in a conference by only occasionally entering a conference and then making comments on several points that had been raised since his last contribution.

"the conference becomes a lot more interesting when points are discussed as a 'live' conference, most enjoyable when two or more participants are discussing certain points."

The negative aspects of 'live' conferencing were expressed by two students:-

"'live' conferencing is not too effective. Too many people in at once lead to confusion of contributions because of the speed of the system response. It would need strict regimenting which could lead to you being frustrated in not being able to make a comment immediately, but finding the topic changed before you have the opportunity to make your point."

Reference here is to the system characteristics relating in part to the speed of the system to accept an individual's contribution and reflect it to other users, and in part to the fact that if two or more contributors are simultaneously entering text then it is not uncommon for their individual contributions to be entwined with each other rather than forming discrete entries.

"Organising a meeting time could be difficult. It can be frustrating if too many people are in at the same time. It could be of value with two or three participating."

### 5.3. Student Attitudes to System Problems and Possible Enhancements.

Question 6a. Technical Improvements. Please state your perception of the three main items of improvement to the CMC.

Not all students gave three items. Those given fall into six basic aspects:-

i. Conference scrolling. All six students identified this facility. The text of a conference appears as a continuous text file, but is subdivided into discrete blocks, each fitting onto a screen. To read a conference the user has to move from screen to screen by using commands. Due to the way the software is written, there is a delay of some seconds between making the command and the screen being changed. This causes considerable frustration to the user who wishes to scan a significant amount of text. All five students wanted to see this facility improved and one also asked that

the facility for entering conference text should have increased speed.

ii. Conference screen design. This aspect is closely linked to that of screen scrolling. The way the screen is currently designed does not maximise the quantity of text that is displayed on a single screen. This is often frustrating to users. Three students identified this as a required improvement. Between the end of the conference and the interviews, some minor amendments to the screen layout were implemented which removed some surplus labelling from the screen but did not increase the amount of text although it did have the effect of making the text clearer to read. This was commented on by one student who acknowledged that this was a marginal improvement.

iii. Downloading conference text to disk file. As has already been seen, the success at downloading conference text to disk file was very poor. Four students identified this as a major area for improvement. One student was able to achieve this on a computer at work because a computer specialist had set up a batch file for the purpose, but he was unable to work out how to achieve this on his computer at home. Since this conference more detailed instructions have been issued to this group of students and one more of these students is now able to be to perform this function. One student suggests that the problem might not necessarily be one of technical difficulty, but of understanding. Clearly this is at least partly true as the facility is not self-contained within the HELP software, but also requires the user to instruct his communication software. As users can have a wide range of very different communications software and different computers it is only possible to give generalised instructions, except where a 'standard' combination of software and computer is used.

iv. Speed of access to system. One students identified the length of time taken from switching on his computer to actually being connected to HELP as being a major deterrent to its use. As with downloading of files, this process is dependent on the user's own computer and software. What is ideally required is a batch file to automate the process, but

this has to be specific to each combination of users' equipment. It thus requires the user to be sufficiently computer literate to create his own batch file, or have a colleague or friend to do it for him.

v. Speed of conference access. This relates to the time to actually enter a particular conference from the time the user is logged into the HELP system. This is partly due to the number of menus that it is necessary to pass through to reach the conference, and partly to the length of time the system takes to scroll from one menu to the next. The first aspect can be overcome by the user using command instructions rather than menus, but this requires greater understanding of the system than possessed by most users. This facility was mentioned by two students.

vi. E-Mail. One student asked for greater user control over personal E-Mail. For example, he would like to see a list of all queued messages indicating who they are from, what their subject matter is, and have the ability to respond to them in a user chosen order.

Question 6b. What do you perceive as the three major weaknesses of the CMC system?

A range of answers were given which fall into three categories:-

i. System related.

a. The speed of the system was again raised by four students. They talked again about the system as a whole and about the conference facility itself. The following are specific comments:-

- "too slow, cumbersome"
- "conferences too laborious to read"
- "whole process too slow, cannot pop in for ten minutes"

- "people have to spend so much time studying that they just don't have half an hour to read bits of conferences"

b. Poor screen design leading to poor access to conference text.

c. Downloading conference text to file too complicated.

d. Too few users in system.

## ii. System Characteristics.

a. "it limits the natural flow of discussion that is the essence of interaction at workshops/meetings."

b. "it is not personal, I miss the human interaction."

"no face-to-face contact, therefore it takes far too long to organise things."

c. "difficult to structure discussions - entwined discussions cause distraction."

"conference contributions go off the subject".

d. Typing experience is needed.

## iii. Design aspects of this specific conference.

a. "conference too long. 'I can do it tomorrow' syndrome."  
This comment is linked to those that highlight the fact that the conference took a long time to develop any real momentum. See also the responses to question 9.

## b. Conference managership.

"need a student manager/reviewer, currently expect Amy (the conference manager) to fulfil this role. Federal Express

(a subsequent student initiated and managed case study conference) was managed very successfully in this way."

"no face-to-face contact, therefore it takes far too long to organise things. Tutorial appointment of a chairman etc is important in CMC as due to time lag too much time would be taken up sorting out this sort of issue. It is human nature to take the easy way out and opt out. In CMC this is much easier than in face-to-face. Many will take the back-seat and hide in CMC. Federal Express was set up in face-to-face (including detailed structure, eg Marketing input on Tuesday and Wednesday etc), and has gone much better."

#### c.Live conferencing.

"live conferencing would have been helpful eg bring more life and speed to process, would reduce disjointed conversation common in 'normal' CMC conference." This student admits that he accessed the conference relatively rarely, but then read the whole conference and made comments on past as well as current issues, thus creating 'disjointed' conversation.

#### 5.4. Student Attitude to Tutor/Manager Roles.

##### Question 7. Did you find the tutor input constructive?

All students responded positively, but clearly most felt that greater, or different, tutor input would have improved the conference.

"The tutor put in some useful comments."

"The tutor tried hard to get the conference to work."



"The tutor worked hard to get/keep it going and to give the conference direction. However, clearer delegation of duties needed."

Question 8. Did you find the manager input constructive?

There was general consent that the manager input was not effective. The major aspect again being the delegation of specific tasks to individuals and groups.

"expected manager to coordinate/review more."

"The manager must do more to direct/structure the discussion. Students are unlikely to split into teams, elect leaders etc spontaneously."

"The manager tried unsuccessfully to guide the conference back to its base, but nobody listened."

Question 9. Was the duration of the conference too little/enough/too much time?

Five students agreed that the time was about right, but one felt that two or three weeks would have been sufficient. There is a feeling that a shorter timescale might have encouraged more concentrated activity. Also, it was said that it is essential to have a deadline date to which to work, ie workshop or examination etc.

Question 10. Any other comments.

There were a number of comments, but most did not add to the answers of previous questions. The following are worthy of note:-

"The system needs various upgrades before people will persevere."

"Every medium of communication has its limitations. Case work is much better done by teams of people meeting and working face to face."

"It is easy for some students in CMC to take advantage of the situation, ie to look in only briefly for any useful information but not put in the time and effort to make the conference successful. Others are then less likely to contribute."

#### 6. Contribution Performance of Students, Tutor and Manager.

The Syndicate consisted of twelve students. Of these one was not expected to participate due to his preparing for an early sitting of the Integrated Exam, and two had computer problems that prevented their access to CMC. One of these students did have some input to the overall exercise by telephone communication with the rest of the group.

Of the remaining nine students, seven accessed the conference, although one read only and made no contribution. Table A1.2 sets out access and contribution usage.

|         | No. of<br>Accesses | Total Time<br>Hr.min.sec. | No. of<br>Contributions | Lines of<br>Contribution |
|---------|--------------------|---------------------------|-------------------------|--------------------------|
| Bob     | 9                  | 2-22-26                   | 8                       | 105                      |
| Peter   | 7                  | 1-37-02                   | 7                       | 51                       |
| Jane    | 10                 | 3-35-04                   | 10                      | 142                      |
| Steven  | 8                  | 31-58                     | 7                       | 15                       |
| Duncan  | 46                 | 5-27-19                   | 45                      | 284                      |
| Beth    | 12                 | 2-20-29                   | 12                      | 116                      |
| Jenny   | 1                  | 1-11                      | 0                       | 0                        |
| Student |                    |                           |                         |                          |
| Average | 13                 | 2-16-30                   | 13                      | 102                      |
| Tutor   | 29                 | 6-53-12                   | 28                      | 212                      |
| Manager | 20                 | 1-51-56                   | 19                      | 96                       |

Table A1.2 Access and Contribution Usage.

In terms of the amount of textual contributions, the students contributed 68% of the conference, the bulk of this coming from four students. Clearly the amount of text contributed is not a direct indication of the value of an individual's contribution to the success of the exercise, but it is an indication of interest and activity in the exercise. In a classroom group working situation the amount of verbal contribution is equally not a direct measure of the value of an individual's contribution to the success of the exercise.

The length of individual contributions varied considerably. There were three major contributions of some note and length. The first set out working proposals and the subsequent two built directly on these proposals. These contributions were interspersed by other contributions of varying lengths adding individual ideas or suggestions. This process is as might be expected with key individuals taking leading roles and with others playing supporting roles.

There is also within this conference an example of a situation that creates a string of short contributions with a significant proportion of light-heartedness. This arises when two or more students are logged in to the conference at the same time and have an interchange of conversation with each other. This exchange contains 22 contributions with an average length of only two lines, but within this there are several important exchanges.

Within the body of the text there is some light-hearted text (about 4%) which is not directly related to the topic. This is not surprising as in any similar classroom situation group work there would also be significant light-hearted conversation interspersing the more serious conversation. Such conversation helps to cement relationships, build team spirit and lead to a better final output. It can reasonably be expected to have the same effect within a CMC conference.

The Conference Tutor and Manager contributed regularly during the first four weeks that the conference was originally intended to run. After that, although they occasionally

looked to see what was happening, there was only one further brief contribution from the Manager near the end. However, during the first four weeks both made significant regular contributions in keeping with their roles. It was unfortunate that the student activity started slowly when staff input was greatest, and built up towards the end of the conference period when staff input was less.

## 7. Notication/Reminder Programme.

Initial notification of the conference was given to students at a previous workshop on the 11th July at which its timing, objectives and mode of operation were explained. This was followed up with an E-mail message reminder from the Conference Manager to each student about ten days before the start of the conference. Nine days into the conference a second E-mail message was sent to all students as a reminder and encouragement. After three weeks one of the students, deciding that activity was too slow, sent an E-mail message to all the group supporting the Conference Tutor, and pointing out to those students not participating that they at least owed the tutor an explanation of their non-participation if they did not intend to participate. This message was supported by a following message from the Programme Manager.

| Days into Conference | 10 | 24 | 26 | 39 |
|----------------------|----|----|----|----|
| Bob                  | 4  | 3  | 1  | 2  |
| Jenny                | 1  | -  | -  | -  |
| Peter                | 1  | -  | -  | 13 |
| Jane                 | 3  | 1  | -  | 4  |
| Steven               | 1  | 1  | -  | 1  |
| Duncan               | 10 | 5  | 1  | 24 |
| Beth                 | 3  | 4  | -  | 9  |

Table A1.3 Number of Student Contributions by Time Period.

|                                              |     |    |    |     |
|----------------------------------------------|-----|----|----|-----|
| Days into Conference                         | 10  | 24 | 26 | 39  |
| -----                                        |     |    |    |     |
| No. of student lines<br>of text contributed. | 213 | 88 | 4  | 407 |
| No. of student lines<br>per day.             | 21  | 6  | 2  | 31  |

Table A1.4 Amount of Student Contribution by Time Period.

Tables A1.3 and A1.4 show the timings of contributions by the students relative to the three reminder E-mail messages. Table A1.3 clearly shows that none of the reminders coaxed any extra students to participate. However, it can be clearly seen that activity in the two weeks up to the student's E-mail message had decreased considerably and then subsequently increased to the highest rate of activity of the whole conference period.

There is no evidence to show that this increased activity is directly related to the E-mail messages. Another probable factor was the increasing time pressure to have some form of presentation ready for the workshop.

## 8. Conclusions.

A significant amount of work was completed towards the preparation of a marketing plan although there was no preparation of a presentation. In the event at the workshop the students conducted a brainstorming session, drawing upon their conference experience, to pull the marketing plan together.

The first mistake in managing the conference was to schedule its completion almost a fortnight before the workshop. What was lacking throughout the conference, and became more acute after the Conference Tutor had ceased active support, was the lack of clear leadership within the group. Several times students made proposals as to how to undertake the task, but

there was no consensus and hence no action. What would have been helpful to the creation of a presentation was some tutorial input to encourage the take up of some of these student proposals, even possibly the suggested appointment of certain individuals to key roles.

There is evidence that both Tutor and students were expecting the conference to operate more like a classroom exercise than an asynchronous CMC conference. The main aspect being the expectation that the conference should move much faster than was the case, with the expectation that participants should be contributing almost daily. Whilst this is possible, it is not reasonable to expect this given students other commitments, and also the necessity for students to read previous contributions, possibly by downloading the text to their PC, assessing the present situation and compiling their response before adding their contribution. One student has expressed the view that more "live" conferencing (ie when two or more participants are in a conference together and can exchange short contributions forming a synchronous conversation) would have been of value. There may be some value in this but the major method of use needs to be asynchronous as this allows greater thought to be given to, and more substance in, contributions. This is part of the process, quoted above from one student, that the system does have benefits, but it's limitations need to be recognised and taken into account when designing activities to utilise this tool.

APPENDIX 1b.

The Losehill Questionnaire.





**Inter-Company MBA**

**COMPUTER BASED WORKSHOP  
EVALUATION FORM**

The purpose of this questionnaire is to give us the benefit of your opinion regarding the Workshop in which you participated. The information you provide will assist us in producing interesting and varied Computer Based Workshops in the future.

**Subject of Workshop: Losehill Case Study**

**Tutor: Sue Foreman**

**Manager: Amy Jameson**

It would be appreciated if you could give as much detail as possible when completing the following questions. If you need more space to answer any question, please add a separate sheet of paper:

1. Did you have any serious problems accessing the conference? If so, please describe:
  
  
  
  
  
  
  
  
  
  
2. Did you manage to download the conference to your local PC successfully? If not, did you try? If you did try please describe your experiences:
  
  
  
  
  
  
  
  
  
  
3. How much time during the course of the conference were you on holiday or not able to access the system because you were away from home/work?

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4. Do you feel that this exercise was of value to your studying of the Managing Markets module? Please explain your answer
  
  
  
  
  
  
  
  
  
  
- 5a. Given that technical problems could be resolved, do you feel that there is a value in the concept of running CMC conferences of this kind based upon course material such as Losehill?
  
  
  
  
  
  
  
  
  
  
- 5b. Please explain any ways in which you feel the design and management of the conference could be improved?
  
  
  
  
  
  
  
  
  
  
6. Technical improvements:
  - a. Please state your perception of the three main items for improvement to the CMC. Please give your reasons:
  
  
  
  
  
  
  
  
  
  
  - b. What do you perceive as the three major weaknesses of the CMC system? Please give your reasons:

/3

7. Did you find the tutor input constructive? Please give your comments.
8. Did you find the manager input constructive? Please give your comments.
9. Was the duration of the conference too little/enough/too much time?

Any other Comments:

APPENDIX 2.

The Benetton Case Studies.

## BENETTON CASE STUDY EXERCISES.

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## 1. Introduction.

This particular exercise was run on two separate occasions, firstly for syndicates 1 and 2 (1992 group), and then for syndicate 3 (1993 group) of the Inter-Company MBA Programme. It was designed as a practice exercise for the Managing Strategy examination. This examination was based around a case study which students were given under examination conditions in the morning of the examination prior to the written examination in the afternoon.

## 2. The Conference.

The conference exercise was designed around a previous examination case and used the previous examination questions. The case used related to the Benetton company. The exercise was timed so that students would be able to work through a real examination case and collectively compose answers to real examination questions prior to attending a one-day face-to-face preparation workshop for the examination at which the students' answers to the questions would be presented and discussed.

## 3. Management of the Conference.

The first conference ran for about six weeks. The first three weeks consisted of review of the case (as in the morning of the examination), with the whole group of six students considering each of three questions for a week each. The second conference ran for four weeks. Again all the students (in this case seventeen) spent the first three weeks analysing the case, and then the fourth week consisted of two sub-groups each preparing a collective answer to an examination question. In both cases the prepared answers were presented and discussed at a one-day face-to-face examination preparation workshop at the close of the conference.

The conferences were managed by a conference manager, in both these cases the syndicate tutor; and a conference tutor, the

academic specialist, who subsequently lead the face-to-face workshop. The responsibilities of these two functions was similar to the roles undertaken in the Losehill exercise (see Appendix 1).

#### 4. The Task Set.

In both cases the students were given advance verbal notice of the exercise and its general objectives and content. In the first case the students were sent the details of the exercise plus the case about four weeks before the CMC exercise was due to start. Interest was such that the students set up their own preliminary conference to start discussing the case before the official conference was started. In the second case students were sent a letter about a month before the commencement of the exercise confirming its taking place, but the case and other details were only sent a few days before the scheduled start.

#### 5. Evaluation of Student Performance and Attitude.

The students who participated in each exercise were asked to complete a post conference questionnaire to determine their attitude to the value of the exercise, their problems in participating in the conference, their attitudes to its conduct and to ways in which the system could be enhanced to enable the benefits of such exercises to be improved. A sample questionnaire is included in Appendix 2b.

The 1992 group consisted of 17 students in total of which 6 participated and completed questionnaires.

The 1993 group consisted of 18 students in total of which 17 participated and 15 completed questionnaires.

### 5.1. Student problems in Participation.

Question 1a. Did you have any serious problems accessing the conference?

1992 Group. Three students experienced difficulties in this respect each experiencing being logged off the system whilst in the process of using it. Two experienced problems with the host being engaged.

1993 Group. Only one students experienced more than an occasional problem. This was regular non-accessibility during peak periods.

Question 1b. If you did not contribute to the conference, what were your reasons?

This question was only asked of the 1993 group. Only four students failed to contribute to the conference at all (two of these did access but read only). One of these did not contribute because he was still studying the course materials. Of those who only contributed occasionally, access problems were a contributory factor as was availability of time associated with a 'long-winded process of access'. One student mentioned lack of tutor feedback early on in the exercise, and a tendency towards 'group think'.

Question 2. Did you manage to download the conference text to your local PC successfully?

1992 Group. All had problems initially, and three did not succeed.

1993 Group. Eight respondents had no problems downloading. The remaining seven either tried unsuccessfully, or did not even attempt it. One respondent screen printed key screens as needed, one did not have a printer, one received copies from other participants and the remainder managed on-line.



Question 3. How much time during the conference were you unable to access the system?

1992 Group. Other than one weekend when PSS was not available, the only problems for non-access were personal ones of being away on business trips or socially at weekends.

1993 Group. One student was not able to access the second half of the exercise due to his own hardware problems. Most experienced short periods of non-access as with the 1992 group.

## 5.2. Student Attitudes to the Form and Conduct of the Conference.

Question 4. Do you feel that this exercise was of any value in studying the Managing Strategy module and preparing for the exam?

1992 Group. All respondents replied in the affirmative. The following specific comments were given:

"the CMC case was an excellent way to practice."

"the conference tutor gave guidance to exam questions I set myself."

"the interactive nature of the conference was very beneficial, rather than doing it in isolation."

"good way to gain a greater understanding of case studies."

1993 Group. All respondents agreed that the exercise was of value, although four acknowledged limited value. Five specifically mentioned interaction as being of value. The following specific comments were given:

"of some value, particularly the international input perspective." (N.B. one student was Austrian and accessed the exercise from Vienna.)

"limited, would have liked greater tutor feedback earlier".

"moderate, need to contribute regularly."

"a separate conference on exam technique would have been helpful."

"consolidated course learning and understanding of subject."

"more tutor feedback would have been helpful."

"considerable; interaction, motivation, kept on track."

"although I did not actively participate, I found the discussions very helpful."

"helped to give comprehensive cover."

Question 5a. Given that any technical problems relating to the HELP system could be resolved, what do you think are the major benefits in the concept of running CMC conferences linked directly with course modules?

All respondents were positive in their response to this question. Specific comments were as follows:

1992 Group.

"Run one at least every three months to aid learning."

"I am certainly very positive about it."

"beware of having more than about six participants."

"for case based modules it is necessary to do theory separately and ensure that everyone is at the same stage."

"why not link with assessment?"

1993 Group.

"widen discussion and application of materials."

"to develop communications."

"discussion in groups with tutor input."

"interchange of ideas and tutor feedback."

"allows you to check other people's views."

"good preparation for workshop and exam."

"enables seminar sessions to be approximated as much as is possible on a distance learning course."

"being reminded that there are numerous ways to look at any issue/situation."

"prefer tutor, structured approach."

"better answers developed by teamwork approach, shared understanding."

"it reduces distance learning isolation."

"constant contact with Henley takes some of the distance out of distance learning."

Question 5b. Would you like to see part of the module assessment being based on a CMC exercise such as this? (This question was only asked of the 1993 group.)

There were eight negative responses. Nevertheless, most of them wanted to see greater integration of CMC into the course. Several were opposed because some students did not have access. Compulsory use of computers and, in particular CMC, on the programme would remove this objection. Three negative and one reserved response were because the system was not yet technically good enough.

Question 5c. In what ways do you feel the design and management of the system could be improved?

The most frequent comment related to the desire for greater subject tutor input. Most other comments related to technical aspects of the system.

1992 Group.

"more academic tutor input"

"tutor to contribute every day." (This was mentioned by three respondents).

"wider student input and 'live' sessions." (nb 'live' sessions are pre-arranged synchronous sessions).

1993 Group.

"limit to six students plus tutor - conferences can get too long and unwieldy."

"more tutor input." (This was mentioned by five respondents).

"avoid interleaved contributions."

This refers to the characteristic of the system where if two contributors are making lengthy contributions simultaneously then their contributions can become split by part of the other contribution.

"allow two weeks per question, need more time for students participation."

"tighter structure."

"improved technical reliability."

"quicker access."

### 5.3. Student Attitudes to System Problems and Possible Enhancements.

Question 6a. Please state your perceptions of the three main items for technical improvement to the HELP system.

1992 Group.

- larger text area on screen.
- concept chains. nb all contributions appear in chronological order, thus comments are not necessarily spatially related to others to which they relate.
- larger space for creating contribution text. nb once a certain amount of text is created that will be entered into the conference before the remainder of the contribution is composed. Once entered into the conference it cannot be edited.
- greater access options, eg access at point last left. nb whilst this specific option was not available, various others were which students never or rarely used because they were not aware of their existence.
- faster system.

1993 Group.

- upload and downloading facilities improved and simplified. Partial downloading facility eg downloading only those

contributions since last access. This was mentioned by four respondents.

- graphics capability.
- easier 'live' conferencing.
- faster access, mentioned by four respondents.
- concept chains, mentioned by two respondents.
- faster system, this was mentioned by four respondents.
- better text editing.
- system out of date!

Question 6b. What do you perceive as the three major weaknesses of the HELP system?

1992 Group.

- need for regular use, mentioned by two respondents.
- greater emphasis on CMC within course as a whole.
- insufficient system training.
- people do not study in phase with each other.
- indifference of users.
- system speed.
- no weekend or evening helpline when users are most active.
- standard communications software should be used to allow better support to be provided.

1993 Group.

- cost, mentioned by four respondents.

- slow/difficult conference scanning.
- corruption of input data. nb at some times some error correction facilities did not operate satisfactorily and input was often corrupted by line noise.
- faster, simpler access, mentioned by two respondents.
- takes too much time, especially if not used to keyboards.
- system speed, mentioned by six respondents.
- insufficient system training, no handbook, mentioned by three respondents.
- poor text editing.
- not user-friendly, mentioned by two respondents.
- printout not easy.
- splitting of some contributions, mentioned by two respondents.
- system out of date, mentioned by two respondents.
- "why don't you use better system and rent out standard kit as part of course fees?"

#### 5.4. Student Attitudes to Tutor/Manager Roles.

Question 7. Did you find the tutor input constructive?  
This question was generally answered positively.

1992 Group.

All respondents were positive, but three added riders as follows:

"expected more guidance or comment on our input especially to provoke thought."

"anticipated greater tutor lead."

"a bit patchy, but useful."

1993 Group.

There were twelve positive and two negative responses, again with three riders as follows:

"disappointed at lack of tutor interaction throughout the conference."

"could have been more guidance".

"not frequent enough". (mentioned by two respondents).

Question 8. Did you find the Manager input constructive?

This question was generally answered positively. All six 1992 group respondents answered positively as did seven 1993 group respondents. One 1993 group respondent was negative and one was not clear what the role should have been.

Question 9. Was the duration of the conference too little/enough/too much time?

All six 1992 group response were "enough"  
1993 group were predominantly agreed that it was "enough"  
(ten responses), with two "too little" and one "too much."

Any other comments.

1992 Group.

"more conferences earlier in the course, particularly on each module".



1993 Group.

"one of the most exciting, interesting and intriguing aspects of the course."

"MBA programmes should aim to produce, inter alia, computer friendly users."

"some of the module/course conferences set up by various tutors are useful."

"improve technical imperfections and CMC will be more acceptable."

"more training in use, many students have been put off using it as it has been too much of an effort to learn."

"standardising equipment/compulsory usage etc."

"would have benefited from a more structured, tutor led approach throughout the course."

"idea of CMC is great, but it is really long-winded."

#### 6. Contribution Performance of Students, Tutor and Manager.

The 1992 group consisted of 16 students in total of which eight participated in the exercise and six completed questionnaires. The 1993 group consisted of 18 students of which 17 participated and 15 completed questionnaires. Tables A2.1 and A2.2 set out the usage and accesses of the participants.

|           | Total Connect Time<br>(hr.min.sec.) | Access (Occasions) |
|-----------|-------------------------------------|--------------------|
| Student 1 | 4.34.37                             | 35                 |
| 2         | 10.24.40                            | 67                 |
| 3         | 19.42                               | 2                  |
| 4         | 1.26.42                             | 15                 |
| 5         | 15.23.10                            | 122                |
| 6         | 12.59.57                            | 71                 |
| 7         | 2.26.54                             | 33                 |
| 8         | 1.25                                | 1                  |
| Tutor     | 11.06.50                            | 49                 |
| Manager   | 2.37.46                             | 22                 |

Table A2.1 1992 Group Activity.

|           | Total Connect Time<br>(hr.min.sec.) | Access (Occasions) |
|-----------|-------------------------------------|--------------------|
| Student 1 | 4.11                                | 1                  |
| 2         | 26.39                               | 4                  |
| 3         | 21.49                               | 6                  |
| 4         | 1.19                                | 1                  |
| 5         | 3.49.27                             | 17                 |
| 6         | 1.24.53                             | 14                 |
| 7         | 6.08                                | 2                  |
| 8         | 5.43.18                             | 12                 |
| 9         | 2.53.04                             | 14                 |
| 10        | 1.14.52                             | 10                 |
| 11        | 2.32.26                             | 30                 |
| 12        | 3.05.17                             | 26                 |
| 13        | 1.05.33                             | 16                 |
| 14        | 1.50.29                             | 10                 |
| 15        | 1.38.07                             | 15                 |
| 16        | 3.48.53                             | 22                 |
| 17        | 1.54.36                             | 17                 |
| Tutor     | 1.59.30                             | 15                 |
| Manager   | 2.38.01                             | 33                 |

Table A2.2 1993 Group Activity.

The amount of time connected by students is not a direct indication of their contribution nor of the value of the exercise to the student, but it does indicate the degree of their contribution to the exercise. The 1992 group was smaller and had much more individual activity over a longer period of time (4.5 weeks against 9 weeks). Allowing for this time difference the intensity of individual activity was similar. Both groups with very few exceptions had regular contributions from the majority of students participating. The 1992 group's figures are increased due to their setting

up their own preliminary conference to start work before the official start of the exercise.

The tutor's contributions were greater in the 1992 exercise, averaging about an access per day compared to about once every two days in 1993. The manager's contributions were also lower but not to the same degree.

## 7. Conclusions.

All the respondents felt that the exercises were of value to them in helping to study the module and prepare for the examination, although four respondents from the 1993 group were qualified in their response. There was some indication from both groups that they would have liked greater, or more specific, tutor input and guidance. The major complaint did not relate to the exercise itself, but to the reliability and lack of ease of use of the system itself.

APPENDIX 2b.

The Benetton Questionnaires.

**Inter-Company MBA**

**COMPUTER BASED WORKSHOP  
EVALUATION FORM**

The purpose of this questionnaire is to give us the benefit of your opinion regarding the Workshop in which you participated. The information you provide will assist us in producing interesting and varied Computer Based Workshops in the future.

**Subject of Workshop: Benetton Case Study 1992**

**Tutor: Steve Downing**

**Manager: Edmund Akehurst/Fenella Galpin**

It would be appreciated if you could give as much detail as possible when completing the following questions. If you need more space to answer any question, please add a separate sheet of paper:

1. Did you have any serious problems accessing the conference? If so, please describe:
  
  
  
  
  
  
  
  
  
  
2. Did you manage to download the conference to your local PC successfully? If not, did you try? If you did try please describe your experiences:
  
  
  
  
  
  
  
  
  
  
3. How much time during the course of the conference were you unable to access the system? Please state reasons, e.g. on course or holiday, technical problems, etc.

/2

4. Do you feel that this exercise was of value to your preparing for the Managing Strategy exam? Please explain your answer
  
- 5a. Given that any technical problems relating to the HELP system could be resolved, do you feel that there is a value in the concept of running CMC conferences of this kind linked to course modules?
  
- 5b. Please explain any ways in which you feel the design and management of the conference could be improved?
  
6. Technical improvements:
  - a. Please state your perception of the three main items for improvement to the CMC. Please give your reasons:
  
  - b. What do you perceive as the three major weaknesses of the CMC system? Please give your reasons:

/3

7. Did you find the tutor input constructive? Please give your comments.
8. Did you find the manager input sufficient? Please give your comments.
9. Was the duration of the conference too little/enough/too much time?

Any other Comments:

**CORPORATE QUALIFICATIONS PROGRAMMES**

**Inter-Company MBA**

**COMPUTER BASED WORKSHOP**

**EVALUATION FORM**

The purpose of this questionnaire is to give us the benefit of your opinion regarding the Workshop in which you participated. The information you provide will assist us in producing interesting and varied Computer Based Workshops in the future.

**Subject of Workshop: Benetton Case Study 1993**

**Tutor: Steve Downing**

**Manager: Edmund Akehurst**

It would be appreciated if you could give as much detail as possible when completing the following questions. If you need more space to answer any question, please add a separate sheet of paper:

- 1a. Did you have any serious problems accessing the conference? If so, please describe:
- 1b. If you did not contribute to the conference, what were the reasons for this?
2. Did you manage to download the conference text to your local PC successfully? If not, did you try? If you did try please describe your experiences:
3. How much time during the course of the conference were you unable to access the system? Please state reasons, eg. on a course or holiday, technical problems, etc.



/2

4. Do you feel that this exercise was of value to your studying of the Managing Strategy module and preparing for the exam? Please explain your answer
  
- 5a. Given that any technical problems relating to the HELP system could be resolved, what do you feel are the major benefits in the concept of running CMC conferences linked directly with course modules?
  
- 5b. Would you like to see part of the module assessment being based on a CMC exercise such as this? Please give your reasons.
  
- 5c. In what ways do you feel the design and management of the conference could be improved?
  
6. Technical improvements:
  - a. Please state your perception of the three main items for improvement to the HELP system. Please give your reasons:
  
  - b. What do you perceive as the three major weaknesses of the HELP system? Please give your reasons:

/3

7. Did you find the tutor input constructive? Please give your comments.
8. Did you find the manager input constructive? Please give your comments.
9. Was the duration of the conference too little/enough/too much time?

Any other Comments:

## APPENDIX 3.

### The Stratton Financial Plc Case Studies.

## STRATTON FINANCIAL PLC CASE STUDY EXERCISES.

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## 1. Introduction.

This case study exercise was conducted twice. The first time was in January/February 1991 with Syndicate 3 of the Inter-Company programme and a group of students from the Open D/L MBA programme. The second exercise was in May/June 1991 with Syndicate 4 of the Inter-Company programme and Shell 4 of the Tailored programme. Both exercises ran for a period of six weeks.

The case was an integral part of the course module for Managing People and as such was work that the students were required to undertake as part of their studies although there was no formal assessment directly related to the case.

## 2. The Exercise.

Both exercises were conducted in a similar manner. Two separate conferences were opened and managed by the conference manager, one a common room which was designed for general discussion about the exercise and for general socialising, the second for discussion about and analysis of the case. Both of these ran for the duration of the exercises. For the second half of the exercise the students were allocated to small groups (seven in the first exercise and two in the second) each with its own conference in which specific detailed aspects allocated by the tutor were considered. The intention being that each group would summarise their findings and report them back to the main group in the main case conference.

### 3. Management of the Exercise.

The Inter-Company syndicates and the Tailored cohort were all given advance warning of the exercise and encouraged to take part. They were told that as the case was an integral part of their studies that it would be of help to them in studying the module and thus they would be expected to take part. As most Open programme students did not have access to HELP, these students were advised of the exercise and its purpose and invited to participate. In the event the first exercise ran for six weeks and attracted 27 Inter-Company students and 9 Open programme students. The second exercise also ran for six weeks and attracted 9 Inter-Company students and 9 Tailored programme students.

The roles of the conference manager and tutor were similar to those for the Losehill exercise (see Appendix 1).

### 4. Evaluation of Student Performance and Attitude.

The students who participated were each asked to complete a post conference questionnaire to determine their problems in participating in the conference and their attitudes to its conduct and to ways in which the system could be enhanced to enable the benefits of such conferences to be improved. A sample questionnaire is included in Appendix 3a.

Question 1. How often did you log into the workshop?

The actual system recorded information giving the actual duration of time spent in the system is shown in Tables A3.1 and A3.2. Both exercises included some participants who accessed the conferences and read the text but never made any contributions (known as 'lurkers'). In both exercises there were two such participants. Of the contributing students in exercise 1 accesses varied from four times in total to every other day. In exercise two the range was again from four times in total to once or twice a week. In both cases the majority of students were accessing about once a week.

Question 2. Did you have any problems linking into the computer network?

Exercise 1: 10 respondents did not, 4 did. In all four cases the problems related to line noise interference and lack of modem lines into the host computer.

Exercise 2: 3 respondents did not, 3 did. These were due to lack of modem lines to the host computer, user's hardware problems, and lack of guidance from Henley in terms of technical help.

Question 3. Did you find this method of using a Case Study beneficial?

Exercise 1: The general response was favourable, 9 yes and 4 no. Specific comments were as follows:

"(the system) needs to be easier and more user friendly."

"medium is insufficient at present."

"system is too cumbersome."

"main conference too large and unwieldy."

"was helpful to see the views of other people and learn from them."

"I wasted a lot of time going backwards and forwards reading conference material."

"It involved a lot of time to follow and contribute."

"CMC precipitated me into IT to an extent that I would not have otherwise enjoyed."

Exercise 2: Again the general response was favourable, 4 yes and 2 no. Specific comments were as follows:

"system technically too weak".

"lack of input from others."

"needed more time."

"gives focus to discussion."

"enjoyed interface with other students."

Question 4. Do you feel that this Case Study was suitable for study using the CMC medium?

Exercise 1: The general consensus was positive, 11 yes and 3 no. Specific comments were as follows:

"needed more development of argument."

"small screen and slowness of response."

"don't think CMC is very well set up for it."

"too many people involved, system too slow."

"gives everyone an opportunity to participate."

"CMC system is too cumbersome when time is short."

Exercise 2: The general consensus was again positive, 5 yes and 1 no. Specific comments were as follows:

"hard to cope with slow speed."

"improve the HELP system - time consuming and cumbersome."

Most of the negative comments related not to the concept of using CMC for such exercises, but with the weaknesses of the HELP system itself. The general impression thus is that given technical improvements to the system itself then such



exercises would be seen to be more beneficial by most respondents.

Question 5. Did you find the tutor input constructive?

Despite the fact that the tutor did not actually contribute in the sub-group conferences in the first exercise, all respondents from both exercises were positive to this question. Specific comments were as follows:

"tutor will need to take a more pro-active part."

"I thought the comments were interesting and relevant."

"yes, helped to add some impetus when we ran out of ideas."

"it was particularly useful to allocate different topics to different groups."

"helps bring things into perspective."

"tutor contribution to kicking off the discussion was essential."

Question 6. Did you find the facilitator (manager) input constructive?

The manager had a much greater input than the tutor in the first exercise which resulted in some confusion as to the distinction between the two roles. All respondents from both groups were positive. Specific comments were as follows:

"wasn't conscious of any difference between tutor and facilitator."

This was expressed by two separate respondents.

"at the outset, yes."

"sometimes."

"yes, especially in syndicate work."

Question 7. Did you benefit from working with the other MBA group?

There was equal positive and negative response from the exercise 1 group whilst the exercise 2 group were mostly negative. The specific comments were as follows:

Exercise 1.

"doesn't matter about group as long as they are distance learners."

"new ideas are always welcome and helpful."

"added some interest, otherwise more overload on the conference."

"I found their enthusiasm and comments helpful."

"Yes, got a wide range of views."

"it encouraged us to communicate with each other."

Exercise 2.

"a little."

"yes, useful to bounce ideas around, but group size tended to be small."

Question 8. Did you find the syndicate group work productive?

There was mixed response to this question. Examination of the records of the syndicate groups shows that some groups were not very productive with little activity. In the first exercise where there were 32 active participants the groups

were smaller, averaging less than seven students in each of which on average less than five were active participants. This led to some groups not being viable, whilst others were very active. One group had only one student making a contribution. In the second exercise involving less students (14 active participants) there were only two syndicate groups. Even here one group only had 3 active student contributors. It was noticeable that most of the groups had non-contributing participants. By the nature of this medium unlike a face-to-face situation, the contributors are not aware of these 'lurkers'. This situation indicates the need for very careful planning of small group makeup if groups are to be created that will all work well. Probably such group composition needs to wait until experience with an opening group wide conference gives some indication as to who the active participants will subsequently be.

A further issue raised here relates to the degree of input required from the tutor particularly in syndicate group conferences. In the first exercise the tutor deliberately did not participate in the syndicate groups on the premise that such students in a face-to-face situation not only do not need a tutor in attendance, but can often be hindered by such presence. The experience here suggests that a much more positive action is required from the tutor in this medium.

Specific respondents' comments were as follows:

#### Exercise 1.

"initially, yes, but as with the 'case' conference it quickly turned into unstructured chat."

"syndicate group discussion too slow."

"no - only two of us contributed!."

"no - lack of group members using the system regularly."

"yes, I welcome every opportunity to work in the group, as it gets us to know each other better and develop teamwork."

"no - as others did not contribute."

"I think we tended to consider the case study as a whole rather than concentrate on our set task of identifying the questions."

#### Exercise 2.

"didn't join."

"with the number of people involved in the conference I'm not convinced breaking into syndicates added much."

"no - too many casual members in CMC anyway."

"did not participate."

Question 9. Was the six week duration too little, enough, or too much?

The majority of respondents believed that the duration of six weeks was about right. The responses from exercise 1 were, 'too little' (1), 'enough' (8), 'too much' (4), and from exercise 2 were, 'too little' (2), 'enough' (3), 'too much' (0).

Question 10. Did you find the 'Common Room' area useful?

This produced a strongly negative response from the first exercise despite the fact that in both exercises the common room conference generated significant activity. The first exercise produced the following response, 'yes' (1), 'no' (11) and 'did not use' (2). The second exercise produced a positive response, but from a smaller number of respondents. This response was 'yes' (4), 'no' (2) and 'did not use' (1). This must raise the question as to the desirability of using such a conference within an exercise of this nature. It could be of value in an exercise where none of the participants know each other before the exercise commences. In this case, however, the Inter-Company students in each

exercise knew each other well beforehand as did the Shell students.

Specific comments were as follows:

"it's a time distraction."

"a useful distraction."

"useful to see other students' moans and problems."

Question 11. How well did this workshop meet your personal objectives?

There was a mixed response to this question with a slight bias towards the negative. The first exercise produced four positive and six negative responses, and the second exercise produced one positive and two negative responses. Given the variable success particularly of the syndicate groups, this response is not to be surprised at.

Specific responses were as follows:

"I found it frustrating, but some useful ideas."

"I don't think it can totally replace the face-to-face contact but it did stimulate thought and understanding."

"I found it useful seeing the other points of view, how other organisations approached the same problem."

"thought provoking, practical, good exchange of ideas."

"enthusiastic at first."

"pretty well - really needed dialogue with others to keep my own motivation up".

Question 12. Was your time well spent on this workshop?

As might have been expected from the responses to the previous questions, reaction was split equally between positive and negative from both exercises.

General Comments.

These comments fell into two general groups, firstly relating to the system's technical capability (or lack of it), and secondly relating to encouraging more students to use the system.

Specific comments were as follows:

"improve system facilities."

"get more participation."

"need more training in system use - upload/download."

"(the system is) very slow and cumbersome."

"needs more tutor control and guidance etc.."

"need Dialplus."

"more training in uploading/downloading."

"more directions and encouragement is needed for students to bring them into CMC."

##### 5. Contribution Performance of Students, Tutor and Manager.

The first exercise consisted of 35 participating students of which 27 were from Syndicate 3 of the Inter-Company programme, and 8 from the Open D/L MBA programme. Of the 35 participating students only two did not make contributions. Table A3.1 set out the total connect time in the whole exercise for each participant in exercise 1, and Table A3.2 for those in exercise 2.

|               |    | Total Connect Time<br>(hr. min. sec) | No<br>Contributions |
|---------------|----|--------------------------------------|---------------------|
| Inter-Company |    |                                      |                     |
| Student       | 1  | 2.33                                 | x                   |
|               | 2  | 10.10                                |                     |
|               | 3  | 28.04                                |                     |
|               | 4  | 2.50.18                              |                     |
|               | 5  | 1.01.52                              |                     |
|               | 6  | 31.24                                |                     |
|               | 7  | 26.09                                |                     |
|               | 8  | 37.38                                |                     |
|               | 9  | 47.40                                |                     |
|               | 10 | 47.15                                |                     |
|               | 11 | 1.35.33                              |                     |
|               | 12 | 3.56.20                              |                     |
|               | 13 | 58.05                                |                     |
|               | 14 | 1.06.57                              |                     |
|               | 15 | 8.55.52                              |                     |
|               | 16 | 1.29.24                              |                     |
|               | 17 | 11.11                                |                     |
|               | 18 | 3.31.58                              |                     |
|               | 19 | 4.07.56                              |                     |
|               | 20 | 2.38.59                              |                     |
|               | 21 | 2.12.27                              |                     |
|               | 22 | 1.29.52                              |                     |
|               | 23 | 25.20                                |                     |
|               | 24 | 3.55.58                              |                     |
|               | 25 | 1.14.37                              |                     |
|               | 26 | 1.18.19                              |                     |
|               | 27 | 5.25                                 |                     |
| Open D/L MBA  |    |                                      |                     |
| Student       | 1  | 3.11.38                              |                     |
|               | 2  | 28.39                                |                     |
|               | 3  | 58.21                                |                     |
|               | 4  | 1.48.31                              |                     |
|               | 5  | 2.10.46                              |                     |
|               | 6  | 2.42.50                              |                     |
|               | 7  | 11.40                                | x                   |
|               | 8  | 25.50                                |                     |
| Tutor         |    | 2.31.10                              |                     |
| Manager       |    | 7.00.55                              |                     |

Table A3.1. Connect Time to System for Exercise 1.

|               |   | Total Connect Time<br>(hr. min. sec) | No<br>Contributions |
|---------------|---|--------------------------------------|---------------------|
| Inter-Company |   |                                      |                     |
| Student       | 1 | 1.00.52                              |                     |
|               | 2 | 1.37.51                              |                     |
|               | 3 | 3.09.45                              |                     |
|               | 4 | 44.19                                |                     |
|               | 5 | 26.37                                |                     |
|               | 6 | 31.35                                |                     |
|               | 7 | 6.21                                 | x                   |
|               | 8 | 49.06                                |                     |
|               | 9 | 1.06.41                              |                     |
| Tailored      |   |                                      |                     |
| Student       | 1 | 3.58.38                              |                     |
|               | 2 | 28.56                                | x                   |
|               | 3 | 3.22.59                              |                     |
|               | 4 | 41.03                                |                     |
|               | 5 | 1.18.43                              |                     |
| Tutor         |   | 3.08.36                              |                     |
| Manager       |   | 2.50.20                              |                     |

Table A3.2. Connect Time to System for Exercise 2.

## 6. Conclusions.

Several specific issues have been raised by these exercises concerning the operation of such exercises to facilitate group work on case study exercises. Firstly CMC cannot be used as a direct replacement for face-to-face. The process has of necessity to take a long period of time, six weeks in this exercise proved to be reasonable, whereas in a face-to-face situation the duration would be measured in hours. Secondly, there is a need to create groups and sub-groups such that they contain at least a sufficient nucleus of active participants to enable the group to function successfully. Thirdly, the indication is that the tutor needs to be more proactive than would be the case in face-to-face and be prepared to give greater guidance and advice, and also become involved in situations where in face-to-face he/she would leave students to work without a tutor present.



APPENDIX 3b.

The Stratton Financial Plc Questionnaire.

**Inter-Company MBA**

**COMPUTER BASED WORKSHOP  
EVALUATION FORM**

The purpose of this questionnaire is to give us the benefit of your opinion regarding the Workshop in which you participated. The information you provide will assist us in producing interesting and varied Computer Based Workshops in the future.

**Subject of Workshop: Stratton Financial plc Case Study**

**Tutor: Gill Lane**

**Manager: Amy Jameson**

It would be appreciated if you could give as much detail as possible when completing the following questions. If you need more space to answer any question, please add a separate sheet of paper:

1. How often did you log into the Workshop?
2. Did you have any problems linking into the computer network?  
If so, what were they?
3. Did you find this method of using a Case Study beneficial?  
If your answer is no, please give details
4. Do you feel that this Case Study was suitable for study using the CMC medium? Please give your reasons.

/2

5. Did you find the Tutor input constructive?
6. Did you find the Manager input constructive?
7. Did you benefit from working with the Tailored Programmes MBA group?  
If not, please give reasons.
8. Did you find the syndicate group work productive?
9. Was the six week duration too little/enough/too much time?
10. Did you find the 'Common Room' area useful?
11. How well did this Workshop meet your personal objectives?
12. Was your time well spent on this Workshop?

Any other Comments:

APPENDIX 4.

The Pre-use Questionnaire Survey Data.

PRE-USE SURVEY QUESTIONNAIRE DATA.

PRE-USE SURVEY DATA.

|                              |     |
|------------------------------|-----|
| Total Valid Questionnaires   | 137 |
| Inter-Company Questionnaires | 60  |
| Tailored Questionnaires      | 24  |
| Open Questionnaires          | 53  |

In this appendix "IC" indicates all Inter-Company Syndicates, "T" indicates both Tailored Cohorts, and "Open" indicates all surveyed Open programme students.

Personal Computing Experience.

|      |          |         |          |  |
|------|----------|---------|----------|--|
| Q.4. |          |         |          |  |
| a.   | Yes (96) | No (40) | N/A ( 1) |  |
| b.   | Yes (10) | No (31) | N/A (96) |  |

|      |       |       |       |          |       |          |         |
|------|-------|-------|-------|----------|-------|----------|---------|
| Q.5. | Total | 1(13) | 2(10) | 3(15)    | 4(35) | 5(64)    | N/A( 0) |
|      | mean  | 3.927 |       | median 4 |       | sd 1.315 |         |

|      |                       |    |
|------|-----------------------|----|
| Q.6. | At least once a day   | 98 |
|      | At least once a week  | 22 |
|      | Less than once a week | 11 |
|      | Never                 | 5  |
|      | N/A                   | 2  |

|      |    |      |              |          |        |     |
|------|----|------|--------------|----------|--------|-----|
| Q.7. |    | None | Hit and Miss | Adequate | Expert | N/A |
| a.   | 5  | 20   | 99           | 13       | 0      |     |
| b.   | 14 | 21   | 75           | 27       | 0      |     |
| c.   | 16 | 24   | 64           | 33       | 0      |     |
| d.   | 33 | 11   | 60           | 25       | 8      |     |

|      |       |       |       |          |       |          |         |
|------|-------|-------|-------|----------|-------|----------|---------|
| Q.8. | Total | 1( 8) | 2(20) | 3(31)    | 4(49) | 5(29)    | N/A( 0) |
|      | mean  | 3.518 |       | median 4 |       | sd 1.151 |         |

# Access to the HELP System.

Q.10.

|    |          |         |
|----|----------|---------|
| a. | Yes (54) | No (83) |
| b. | Yes (46) | No (91) |

| Access at: | Work |    | Home |    | Both | One Only |
|------------|------|----|------|----|------|----------|
|            | Yes  | No | Yes  | No |      |          |
| IC         | 30   | 29 | 38   | 21 | 14   | 40       |
| T          | 12   | 13 | 2    | 23 | 2    | 10       |
| Other      | 12   | 41 | 6    | 47 | 3    | 12       |

Q.11a.

|      |     |    |
|------|-----|----|
|      | Yes | No |
| IC   | 50  | 10 |
| T    | 9   | 15 |
| Open | 12  | 41 |

Q.11bi.

|              |    |
|--------------|----|
| Direct dial  | 35 |
| PSS/Dialplus | 23 |
| Other        | 10 |
| N/A          | 69 |

Q.11biii.

|       |        |         |         |         |         |          |
|-------|--------|---------|---------|---------|---------|----------|
| Total | 0 (26) | 10 ( 2) | 20 ( 3) | 60 ( 3) | 80 (5 ) | 100 (29) |
|       |        |         |         |         |         | N/A (69) |

Q.12a.

|                        |    |
|------------------------|----|
| Have not tried         | 63 |
| Tried with problems    | 42 |
| Tried without problems | 27 |
| N/A                    | 5  |

# Perception of the HELP System.

Q.13.

|        |            |        |          |        |          |          |
|--------|------------|--------|----------|--------|----------|----------|
| Total  | 1 (22)     | 2 (30) | 3 (51)   | 4 (14) | 5 ( 6)   | N/A (14) |
|        | mean 2.610 |        | median 3 |        | sd 1.064 |          |
| IC     | 1 ( 6)     | 2 (11) | 3 (31)   | 4 ( 9) | 5 ( 2)   | N/A ( 1) |
|        | mean 2.831 |        | median 3 |        | sd 0.931 |          |
| Non IC | 1 (16)     | 2 (19) | 3 (20)   | 4 ( 5) | 5 ( 4)   | N/A (13) |
|        | mean 2.406 |        | median 2 |        | sd 1.137 |          |

Q.14i.

|        |            |        |          |        |          |          |
|--------|------------|--------|----------|--------|----------|----------|
| Total  | 1 (25)     | 2 (24) | 3 (26)   | 4 (22) | 5 (21)   | N/A (19) |
|        | mean 2.915 |        | median 3 |        | sd 1.399 |          |
| IC     | 1 ( 1)     | 2 ( 8) | 3 (16)   | 4 (15) | 5 (18)   | N/A ( 2) |
|        | mean 3.707 |        | median 4 |        | sd 1.108 |          |
| Non IC | 1 (24)     | 2 (16) | 3 (10)   | 4 ( 7) | 5 ( 3)   | N/A (17) |
|        | mean 2.150 |        | median 2 |        | sd 1.219 |          |

Q.14ii.

|        |            |        |          |        |          |          |
|--------|------------|--------|----------|--------|----------|----------|
| Total  | 1 (26)     | 2 (20) | 3 (36)   | 4 (24) | 5 ( 8)   | N/A (23) |
|        | mean 2.719 |        | median 3 |        | sd 1.230 |          |
| IC     | 1 (11)     | 2 ( 9) | 3 (19)   | 4 (15) | 5 ( 3)   | N/A ( 3) |
|        | mean 2.825 |        | median 3 |        | sd 1.182 |          |
| Non IC | 1 (13)     | 2 (11) | 3 (17)   | 4 ( 9) | 5 ( 5)   | N/A (20) |
|        | mean 2.614 |        | median 3 |        | sd 1.278 |          |

Q.14iii.

|        |            |       |          |       |          |         |
|--------|------------|-------|----------|-------|----------|---------|
| Total  | 1(26)      | 2(23) | 3(32)    | 4(27) | 5( 9)    | N/A(20) |
|        | mean 2.744 |       | median 3 |       | sd 1.254 |         |
| IC     | 1(11)      | 2(10) | 3(19)    | 4(18) | 5( 0)    | N/A( 2) |
|        | mean 2.759 |       | median 3 |       | sd 1.097 |         |
| Non IC | 1(15)      | 2(13) | 3(13)    | 4( 9) | 5( 9)    | N/A(18) |
|        | mean 2.729 |       | median 3 |       | sd 1.140 |         |

Q.14iv.

|        |            |       |          |       |          |         |
|--------|------------|-------|----------|-------|----------|---------|
| Total  | 1(29)      | 2(30) | 3(16)    | 4(32) | 5( 9)    | N/A(21) |
|        | mean 2.672 |       | median 2 |       | sd 1.324 |         |
| IC     | 1(11)      | 2(14) | 3(10)    | 4(17) | 5( 5)    | N/A( 3) |
|        | mean 2.842 |       | median 3 |       | sd 1.293 |         |
| Non IC | 1(18)      | 2(16) | 3( 6)    | 4(15) | 5( 9)    | N/A(18) |
|        | mean 2.568 |       | median 2 |       | sd 1.344 |         |

Q.14v.

|        |            |       |          |       |          |         |
|--------|------------|-------|----------|-------|----------|---------|
| Total  | 1(37)      | 2(28) | 3(22)    | 4(15) | 5(11)    | N/A(24) |
|        | mean 2.425 |       | median 2 |       | sd 1.328 |         |
| IC     | 1(18)      | 2(15) | 3(13)    | 4( 7) | 5( 2)    | N/A( 5) |
|        | mean 2.273 |       | median 2 |       | sd 1.162 |         |
| Non IC | 1(19)      | 2(13) | 3( 9)    | 4( 8) | 5( 9)    | N/A(19) |
|        | mean 2.569 |       | median 2 |       | sd 1.464 |         |

Q.15b.

|        |            |       |          |       |          |         |
|--------|------------|-------|----------|-------|----------|---------|
| Total  | 1(73)      | 2(13) | 3(24)    | 4(15) | 5(10)    | N/A( 2) |
|        | mean 2.081 |       | median 1 |       | sd 1.355 |         |
| IC     | 1(13)      | 2(11) | 3(18)    | 4( 8) | 5( 8)    | N/A( 1) |
|        | mean 2.776 |       | median 3 |       | sd 1.325 |         |
| Non IC | 1(60)      | 2( 2) | 3( 6)    | 4( 7) | 5( 2)    | N/A( 1) |
|        | mean 1.558 |       | median 1 |       | sd 1.130 |         |

The HELP System

Q.16a.

|        |            |       |          |       |          |         |
|--------|------------|-------|----------|-------|----------|---------|
| Total  | 1( 5)      | 2(13) | 3(11)    | 4(17) | 5(20)    | N/A(71) |
|        | mean 3.515 |       | median 4 |       | sd 1.315 |         |
| IC     | 1( 2)      | 2(11) | 3( 9)    | 4(14) | 5(14)    | N/A( 9) |
|        | mean 3.540 |       | median 4 |       | sd 1.232 |         |
| Non IC | 1( 3)      | 2( 2) | 3( 2)    | 4( 3) | 5( 6)    | N/A(62) |
|        | mean 3.438 |       | median 4 |       | sd 1.590 |         |

# The Use of Computers.

Q.18.

|       |            |        |          |        |          |          |
|-------|------------|--------|----------|--------|----------|----------|
| Total | 1 ( 1)     | 2 ( 2) | 3 (18)   | 4 (62) | 5 (53)   | N/A ( 0) |
|       | mean 4.206 |        | median 4 |        | sd 0.780 |          |
| IC    | 1 ( 0)     | 2 ( 2) | 3 ( 7)   | 4 (29) | 5 (21)   | N/A ( 0) |
| T     | 1 ( 0)     | 2 ( 0) | 3 ( 5)   | 4 (10) | 5 ( 9)   | N/A ( 1) |
| Open  | 1 ( 1)     | 2 ( 0) | 3 ( 6)   | 4 (23) | 5 (23)   | N/A ( 0) |

Q.19.

|          | Total | IC | T  | Open |
|----------|-------|----|----|------|
| Writing  | 27    | 12 | 3  | 12   |
| Speaking | 53    | 29 | 10 | 14   |
| Equally  | 56    | 18 | 11 | 27   |
| N/A      | 1     | 0  | 1  | 0    |

Q.20a.

|     | Total | IC | T  | Open |
|-----|-------|----|----|------|
| Yes | 83    | 37 | 21 | 25   |
| No  | 52    | 22 | 4  | 26   |
| N/A | 2     | 0  | 0  | 2    |



APPENDIX 4b.

The Pre-use Questionnaire.

# **SURVEY OF COURSE MEMBERS ATTITUDES TO COMPUTING AND THE HELP SYSTEM**

## **PERSONAL DETAILS**

1. Name: .....

2. Which Henley course are you undertaking? .....

3. What is your job title? .....

## **PERSONAL COMPUTING EXPERIENCE**

4a. Do you have your own personal computer at home?

Please circle appropriate answer.

**YES**

**NO**

4b. If 'no', do you anticipate acquiring your own personal computer within the next twelve months?

Please circle the appropriate answer.

**YES**

**NO**

5. How important to you is the ability to use a personal computer in your present job?

Please circle appropriate number.

|             |   |   |   |   |   |           |
|-------------|---|---|---|---|---|-----------|
| Unimportant | 1 | 2 | 3 | 4 | 5 | Important |
|-------------|---|---|---|---|---|-----------|

6. How often do you personally use a computer in the course of your normal work ?

At least once a day

At least once a week

Less than once a week

Never

|  |
|--|
|  |
|  |
|  |
|  |

Please tick one box only

7. How would you describe your skill at the following?

Please circle one response per question

|                                                                                      |      |              |          |        |
|--------------------------------------------------------------------------------------|------|--------------|----------|--------|
| a) Typing skills                                                                     | None | Hit and Miss | Adequate | Expert |
| b) Using Word Processing                                                             | None | Hit and Miss | Adequate | Expert |
| c) Using Spread Sheets                                                               | None | Hit and Miss | Adequate | Expert |
| d) Using other Personal Computing Applications<br>(Please specify main applications) | None | Hit and Miss | Adequate | Expert |

8. How important do you expect the ability to use personal computers will be to the future development of your career?

Please circle appropriate number.

|             |   |   |   |   |   |           |
|-------------|---|---|---|---|---|-----------|
| Unimportant | 1 | 2 | 3 | 4 | 5 | Important |
|-------------|---|---|---|---|---|-----------|

9. How important do you expect the ability to use personal computers will be to you in the successful completion of your course of studies?

Please circle appropriate number.

|             |   |   |   |   |   |           |
|-------------|---|---|---|---|---|-----------|
| Unimportant | 1 | 2 | 3 | 4 | 5 | Important |
|-------------|---|---|---|---|---|-----------|

#### ACCESS TO HELP SYSTEM

10a. Do you have access to the HELP system at work?

Please circle appropriate answer.

|     |    |
|-----|----|
| YES | NO |
|-----|----|

10b. Do you have access to the HELP system at home?

Please circle appropriate answer.

|     |    |
|-----|----|
| YES | NO |
|-----|----|

10c. If you do not currently have access to the HELP system  
either at home or work, how are you intending to gain access?

.....  
.....  
.....

11a. Have you accessed the HELP system yet (other than at a demonstration at Henley)?  
Please circle appropriate answer.

YES

NO

11b. If "Yes",

i. How do you access the HELP system?

Direct dial to host computer

Use PSS/Dial Plus

Other eg. via workplace network  
(Please specify)

|  |
|--|
|  |
|  |
|  |

Please tick appropriate box(es)

.....  
.....

ii. What communication software do you use?

.....

iii. What proportion of your access to the HELP system is made from your place of  
work? Please estimate to the nearest 20%

.....

12a. Have you experienced any telecommunication problems establishing  
a connection with the HELP system?

Please circle one answer.

Have not  
tried

Have tried and  
had problems

Have tried and  
not had problems

12b. If you have had problems in establishing a connection, please describe the  
nature and extent of the problems.

.....  
.....  
.....

**PERCEPTION OF THE HELP SYSTEM**

13. How helpful do you expect the use of the HELP system to be to you in the successful completion of your course?

Please circle appropriate number.

|           |   |   |   |   |   |         |
|-----------|---|---|---|---|---|---------|
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
|-----------|---|---|---|---|---|---------|

14. How helpful do you expect the following aspects of the HELP system to be in your studies?

Please circle the appropriate number for each aspect.

i. Electronic Mail

|           |   |   |   |   |   |         |
|-----------|---|---|---|---|---|---------|
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
|-----------|---|---|---|---|---|---------|

ii. Helpline

|           |   |   |   |   |   |         |
|-----------|---|---|---|---|---|---------|
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
|-----------|---|---|---|---|---|---------|

iii. Conferences

|           |   |   |   |   |   |         |
|-----------|---|---|---|---|---|---------|
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
|-----------|---|---|---|---|---|---------|

iv. Administrative Information  
bookings, etc

|           |   |   |   |   |   |         |
|-----------|---|---|---|---|---|---------|
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
|-----------|---|---|---|---|---|---------|

v. External Databases

|           |   |   |   |   |   |         |
|-----------|---|---|---|---|---|---------|
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
|-----------|---|---|---|---|---|---------|

- 15a. What do you see as the benefits of computer conferences in the context of your course?

.....

.....

.....

- 15b. How fully have you explored the currently available conferences?  
Please circle the appropriate number.

|            |   |   |   |   |   |       |
|------------|---|---|---|---|---|-------|
| Not at all | 1 | 2 | 3 | 4 | 5 | Fully |
|------------|---|---|---|---|---|-------|

- 15c. i. What additional subject(s) would you like to see covered by conferences?

.....

.....

.....

- ii. What changes would you like to see to the system to improve the benefits from conferences?  
Please give reasons.

.....

.....

.....

.....

### THE HELP SYSTEM

If you have not already gained access to the HELP system please go to question 18.

- 16a. Once you have gained access to the HELP system, how easy do you find it to use?  
Please circle the appropriate number.

|           |   |   |   |   |   |      |
|-----------|---|---|---|---|---|------|
| Difficult | 1 | 2 | 3 | 4 | 5 | Easy |
|-----------|---|---|---|---|---|------|

- 16b. If you do not find the system easy to use, please explain why.

.....

.....

.....

17. What improvements would you like to see to the system?

a. to make it easier to use

.....

.....

b. to extend its facilities

.....

.....

### THE USE OF COMPUTERS

18. How would you rate computers?  
Please circle appropriate number

|          |   |   |   |   |   |           |
|----------|---|---|---|---|---|-----------|
| Terrible | 1 | 2 | 3 | 4 | 5 | Wonderful |
|----------|---|---|---|---|---|-----------|

19. Comparing your writing skills with your speaking skills, would you say you are MORE persuasive when you are:

Writing

Speaking

Equally

|                          |
|--------------------------|
| <input type="checkbox"/> |
| <input type="checkbox"/> |
| <input type="checkbox"/> |

Please tick one box only

- 20a. Have you had any previous experience with other electronic mail systems, bulletin boards or conferencing systems?  
Please circle appropriate answer.

YES

NO

- 20b. If "Yes", please state which ones.

-----  
-----  
-----  
-----

21. How do you see the home use of computers developing over the next five years?

-----  
-----  
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22. How do you expect personal computer use and applications in the workplace to develop over the next five years?

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23. How do you expect the use of personal computers within business and management education to change over the next five years?

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## APPENDIX 5.

### The Post-use Questionnaire Survey Data.



# POST-USE SURVEY QUESTIONNAIRE DATA.

## POST-USE SURVEY QUESTIONNAIRE DATA.

|                                    |     |
|------------------------------------|-----|
| Total Valid Questionnaires         | 101 |
| Syndicate 1-3 Valid Questionnaires | 36  |
| Valid Other Questionnaires         | 65  |

In this appendix "IC" indicates Inter-Company Syndicates 1 to 3 only, "Other" indicates all other syndicates and groups.

### Use of the HELP System.

#### Q.1a. Access to HELP:

|                    | IC | Other |
|--------------------|----|-------|
| Home Computer      | 14 | 12    |
| Workplace Portable | 14 | 14    |
| Workplace desk top | 8  | 21    |
| Not Used           | 0  | 18    |

#### Q.1b. If used own computer, Why?

|                   | IC | Other |
|-------------------|----|-------|
| More Convenient   | 15 | 10    |
| No Sponsor Access | 0  | 2     |
| N/A               | 0  | 53    |

#### Q.2. How often used HELP to contact:

|            |       | Never | Occ. | Often | N/A |
|------------|-------|-------|------|-------|-----|
| Syn. Tutor | IC    | 1     | 25   | 10    | 0   |
|            | Other | 24    | 23   | 1     | 17  |
| Own Grp.   | IC    | 3     | 16   | 16    | 1   |
|            | Other | 22    | 23   | 4     | 16  |
| Admin.     | IC    | 8     | 21   | 7     | 0   |
|            | Other | 20    | 24   | 3     | 18  |
| Other Tut. | IC    | 21    | 15   | 0     | 0   |
|            | Other | 34    | 14   | 0     | 17  |
| Other Stu. | IC    | 10    | 21   | 5     | 0   |
|            | Other | 30    | 19   | 0     | 16  |

#### Q.3a. Which conference types have you used?

|            |       | Never | Occ. | Often | N/A |
|------------|-------|-------|------|-------|-----|
| Sub. Based | IC    | 5     | 25   | 6     | 0   |
|            | Other | 19    | 29   | 0     | 17  |
| Case Study | IC    | 5     | 26   | 5     | 19  |
|            | Other | 34    | 12   | 0     | 0   |
| Wkg. Grp.  | IC    | 7     | 20   | 9     | 0   |
|            | Other | 29    | 15   | 5     | 16  |
| Spec. Sub. | IC    | 17    | 17   | 1     | 1   |
|            | Other | 34    | 12   | 0     | 19  |
| Coffee Rm. | IC    | 19    | 16   | 1     | 0   |
|            | Other | 26    | 21   | 2     | 16  |

Q.3b. How useful have the following been:

Sub. Based

|       |            |       |            |       |          |         |
|-------|------------|-------|------------|-------|----------|---------|
| IC    | 1( 3)      | 2( 3) | 3(10)      | 4(15) | 5( 1)    | N/A( 4) |
|       | mean 3.250 |       | median 3.5 |       | sd 1.016 |         |
| Other | 1(14)      | 2(16) | 3( 6)      | 4( 1) | 5( 0)    | N/A(28) |
|       | mean 1.838 |       | median 2   |       | sd 0.016 |         |

Case Study

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 2)      | 2( 3) | 3(12)    | 4( 8) | 5( 6)    | N/A( 5) |
|       | mean 3.419 |       | median 3 |       | sd 1.119 |         |
| Other | 1(15)      | 2( 5) | 3( 2)    | 4( 3) | 5( 0)    | N/A(40) |
|       | mean 1.720 |       | median 1 |       | sd 1.061 |         |

Wkg. Grp.

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 3)      | 2( 8) | 3( 6)    | 4( 9) | 5( 5)    | N/A( 5) |
|       | mean 3.161 |       | median 3 |       | sd 1.267 |         |
| Other | 1(17)      | 2( 4) | 3( 5)    | 4( 4) | 5( 1)    | N/A(34) |
|       | mean 1.968 |       | median 1 |       | sd 1.251 |         |

Spec. Sub.

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 5)      | 2( 1) | 3(12)    | 4( 4) | 5( 1)    | N/A(13) |
|       | mean 2.783 |       | median 3 |       | sd 1.126 |         |
| Other | 1(20)      | 2( 1) | 3( 5)    | 4( 2) | 5( 0)    | N/A(37) |
|       | mean 1.607 |       | median 1 |       | sd 1.031 |         |

Coffee Rm.

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1(18)      | 2( 8) | 3( 1)    | 4( 1) | 5( 0)    | N/A( 8) |
|       | mean 1.464 |       | median 1 |       | sd 0.744 |         |
| Other | 1(24)      | 2( 6) | 3( 3)    | 4( 2) | 5( 0)    | N/A(30) |
|       | mean 1.514 |       | median 1 |       | sd 0.887 |         |

Q.4. Success rate in connecting to HELP:

|      |    |       |
|------|----|-------|
|      | IC | Other |
| <90% | 20 | 32    |
| <50% | 13 | 8     |
| >50% | 3  | 7     |

Q.5. Problems in connecting to HELP:

|               |    |       |
|---------------|----|-------|
|               | IC | Other |
| Own Modem     | 13 | 21    |
| Host Modem    | 12 | 11    |
| Host Computer | 11 | 11    |

Q.6a. Method of connection:

|              |    |       |
|--------------|----|-------|
|              | IC | Other |
| PSTN         | 12 | 25    |
| PSS/Dialplus | 24 | 12    |
| Other        | 0  | 8     |
| N/A          | 0  | 20    |

Q.6b. Proportion of access from place of work:

|       |    |     |     |     |      |     |
|-------|----|-----|-----|-----|------|-----|
|       | 0% | 10% | 20% | 80% | 100% | N/A |
| IC    | 17 | 0   | 5   | 5   | 6    | 3   |
| Other | 17 | 1   | 4   | 1   | 23   | 19  |

Q.7. Technical difficulties with workstation:

|               |    |       |
|---------------|----|-------|
|               | IC | Other |
| Local         | 4  | 4     |
| Other UK      | 13 | 17    |
| International | 1  | 2     |
| N/A           | 18 | 42    |

Q.8. Cost of calls restrictive:

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1(23)      | 2( 4) | 3( 6)    | 4( 2) | 5( 1)    | N/A( 0) |
|       | mean 1.722 |       | median 1 |       | sd 1.111 |         |
| Other | 1(33)      | 2( 2) | 3( 6)    | 4( 3) | 6( 3)    | N/A(18) |
|       | mean 1.745 |       | median 1 |       | sd 1.276 |         |

Q.9. Technical difficulties with workstation:

|                     | IC | Other |
|---------------------|----|-------|
| Own Computer        | 4  | 6     |
| Telecoms network    | 6  | 6     |
| Host modem/computer | 7  | 5     |
| None                | 24 | 32    |
| Other               | 0  | 1     |

Q.10. Non-technical difficulties with workstation:

|                 | IC | Other |
|-----------------|----|-------|
| Own Problems    | 2  | 1     |
| Computer Access | 1  | 1     |
| Location        | 2  | 6     |
| Instructions    | 4  | 2     |
| None            | 25 | 37    |
| Other           | 3  | 2     |

Q.11a. Success in downloading text to own computer:

|             | IC | Other |
|-------------|----|-------|
| Yes         | 13 | 19    |
| Failed      | 7  | 6     |
| Did not try | 16 | 23    |
| N/A         | 0  | 17    |

Q.11b. If tried but failed, reason:

|                      | IC | Other |
|----------------------|----|-------|
| Unable to create log | 4  | 1     |
| Comms software       | 2  | 3     |
| Other                | 0  | 3     |

Q.12. Prepare material off-line:

|                 | IC | Other |
|-----------------|----|-------|
| Always off-line | 1  | 0     |
| >50% off-line   | 0  | 1     |
| <50% off-line   | 3  | 3     |
| Always on-line  | 31 | 41    |
| N/A             | 1  | 20    |

Q.13. Checking e-mail:

|                    | IC | Other |
|--------------------|----|-------|
| On-line            | 33 | 42    |
| Print, reply later | 3  | 2     |
| Neither            | 0  | 0     |
| N/A                | 0  | 21    |

Q.14. Storage of e-mail:

|                | IC | Other |
|----------------|----|-------|
| On HELP        | 28 | 28    |
| On own PC      | 0  | 0     |
| Print and save | 8  | 4     |
| None of these  | 0  | 4     |
| N/A            | 0  | 25    |

|       |                                                                                    |    |       |
|-------|------------------------------------------------------------------------------------|----|-------|
| Q.15. | On entering conferences:                                                           |    |       |
|       |                                                                                    | IC | Other |
|       | Read on-line,                                                                      |    |       |
|       | reply on-line                                                                      | 30 | 34    |
|       | Read on-line,                                                                      |    |       |
|       | reply off-line                                                                     | 0  | 0     |
|       | Print new entries,                                                                 |    |       |
|       | reply later                                                                        | 1  | 1     |
|       | Download whole conf.                                                               | 5  | 3     |
|       | N/A                                                                                | 0  | 24    |
| Q.16. | How often did you use printer to make hard copies of e-mail or conference entries: |    |       |
|       | Never                                                                              | 11 | 25    |
|       | Occasionally                                                                       | 18 | 21    |
|       | Frequently                                                                         | 6  | 1     |
|       | N/A                                                                                | 1  | 18    |
| Q.17. | Help in difficulties:                                                              |    |       |
|       |                                                                                    | IC | Other |
|       | Fellow student                                                                     | 19 | 11    |
|       | Tutor                                                                              | 11 | 2     |
|       | Spouse/partner                                                                     | 3  | 1     |
|       | Children                                                                           | 1  | 0     |
|       | Non-course friend                                                                  | 1  | 1     |
|       | Work Colleague                                                                     | 17 | 17    |
|       | On-line HELP messages                                                              | 2  | 6     |
|       | Henley Staff                                                                       | 12 | 11    |
|       | Brainstorm staff                                                                   | 13 | 10    |
|       | Other people                                                                       | 0  | 1     |
|       | Other Sources                                                                      | 0  | 1     |

#### Attitude to the HELP System.

Q.18. How helpful has HELP been in:

|                                     |            |       |          |       |          |         |
|-------------------------------------|------------|-------|----------|-------|----------|---------|
| Encouragement to Progress on Course |            |       |          |       |          |         |
| IC                                  | 1( 4)      | 2( 7) | 3( 8)    | 4(11) | 5( 6)    | N/A( 0) |
|                                     | mean 3.222 |       | median 3 |       | sd 1.267 |         |
| Other                               | 1(20)      | 2(10) | 3( 9)    | 4( 8) | 5( 0)    | N/A(18) |
|                                     | mean 2.106 |       | median 2 |       | sd 1.147 |         |
| Success                             |            |       |          |       |          |         |
| IC                                  | 1( 6)      | 2( 5) | 3(13)    | 4(12) | 5( 0)    | N/A( 0) |
|                                     | mean 2.861 |       | median 3 |       | sd 1.073 |         |
| Other                               | 1(25)      | 2(10) | 3( 9)    | 4( 2) | 5( 0)    | N/A(19) |
|                                     | mean 1.739 |       | median 3 |       | sd 1.073 |         |
| Tutor Support                       |            |       |          |       |          |         |
| IC                                  | 1( 6)      | 2( 5) | 3( 8)    | 4(14) | 5( 3)    | N/A( 0) |
|                                     | mean 3.083 |       | median 3 |       | sd 1.251 |         |
| Other                               | 1(23)      | 2( 9) | 3( 8)    | 4( 4) | 5( 0)    | N/A(21) |
|                                     | mean 1.841 |       | median 1 |       | sd 1.033 |         |
| Administration Support              |            |       |          |       |          |         |
| IC                                  | 1( 7)      | 2( 3) | 3( 6)    | 4(17) | 5( 3)    | N/A( 0) |
|                                     | mean 3.167 |       | median 4 |       | sd 1.298 |         |
| Other                               | 1(16)      | 2( 4) | 3(13)    | 4(11) | 5( 2)    | N/A(19) |
|                                     | mean 2.543 |       | median 3 |       | sd 1.312 |         |

Q.19. How helpful in successful Completion of Course

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 4)      | 2(12) | 3( 9)    | 4(10) | 5( 1)    | N/A( 0) |
|       | mean 2.778 |       | median 3 |       | sd 1.072 |         |
| Other | 1(27)      | 2( 9) | 3( 9)    | 4( 2) | 5( 0)    | N/A(18) |
|       | mean 1.702 |       | median 1 |       | sd 0.981 |         |

Q.20. How helpful:

Electronic Mail

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 1)      | 2( 4) | 3(11)    | 4(16) | 5( 4)    | N/A( 0) |
|       | mean 3.500 |       | median 4 |       | sd 0.941 |         |
| Other | 1(15)      | 2( 6) | 3(11)    | 4( 9) | 5( 3)    | N/A(21) |
|       | mean 2.523 |       | median 3 |       | sd 1.328 |         |

Conferences

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 4)      | 2( 3) | 3(10)    | 4(15) | 5( 4)    | N/A( 0) |
|       | mean 3.333 |       | median 4 |       | sd 1.146 |         |
| Other | 1(19)      | 2(14) | 3( 7)    | 4( 5) | 5( 0)    | N/A(20) |
|       | mean 1.956 |       | median 2 |       | sd 1.021 |         |

Admin.

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 4)      | 2(11) | 3( 8)    | 4(11) | 5( 2)    | N/A( 0) |
|       | mean 2.889 |       | median 3 |       | sd 1.141 |         |
| Other | 1(21)      | 2( 5) | 3( 7)    | 4(10) | 5( 0)    | N/A(22) |
|       | mean 2.140 |       | median 2 |       | sd 1.265 |         |

External Databases

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1(20)      | 2(11) | 3(4 )    | 4( 0) | 5( 1)    | N/A( 0) |
|       | mean 1.639 |       | median 1 |       | sd 0.899 |         |
| Other | 1(31)      | 2( 6) | 3( 4)    | 4( 1) | 5( 0)    | N/A(23) |
|       | mean 1.405 |       | median 1 |       | sd 0.767 |         |

Q.23. How helpful could HELP have been?

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 2)      | 2( 4) | 3(11)    | 4(12) | 5( 3)    | N/A( 4) |
|       | mean 3.313 |       | median 3 |       | sd 1.030 |         |
| Other | 1( 3)      | 2( 6) | 3(11)    | 4(19) | 5( 6)    | N/A(20) |
|       | mean 3.422 |       | median 4 |       | sd 1.097 |         |

Q.24a. Better if compulsory?

|     |    |       |
|-----|----|-------|
|     | IC | Other |
| Yes | 16 | 32    |
| No  | 17 | 23    |
| N/A | 3  | 10    |

Q.24b. In favour of making compulsory:

|     |    |       |
|-----|----|-------|
|     | IC | Other |
| Yes | 17 | 33    |
| No  | 17 | 22    |
| N/A | 2  | 10    |

Q.25.

How difficult do you expect HELP to be to learn to use?

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 1)      | 2(10) | 3( 7)    | 4(12) | 5( 5)    | N/A( 1) |
|       | mean 3.286 |       | median 3 |       | sd 1.126 |         |
| Other | 1( 3)      | 2( 4) | 3(14)    | 4(10) | 5(19)    | N/A(15) |
|       | mean 3.760 |       | median 4 |       | sd 1.222 |         |

How difficult did you find HELP to be to learn to use?

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 0)      | 2( 3) | 3( 9)    | 4(15) | 5( 8)    | N/A( 1) |
|       | mean 3.800 |       | median 4 |       | sd 0.901 |         |
| Other | 1( 1)      | 2( 5) | 3(15)    | 4(15) | 5(12)    | N/A(17) |
|       | mean 3.667 |       | median 4 |       | sd 1.038 |         |

How impersonal did you expect HELP to be?

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 4)      | 2( 7) | 3(18)    | 4( 4) | 5( 2)    | N/A( 1) |
|       | mean 2.800 |       | median 3 |       | sd 0.994 |         |
| Other | 1( 9)      | 2(15) | 3(11)    | 4(11) | 5( 4)    | N/A(15) |
|       | mean 2.720 |       | median 3 |       | sd 1.230 |         |

How impersonal did you find HELP to be?

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 3)      | 2( 4) | 3(15)    | 4(11) | 5( 2)    | N/A( 1) |
|       | mean 3.134 |       | median 3 |       | sd 1.004 |         |
| Other | 1(13)      | 2(19) | 3( 8)    | 4( 3) | 5( 3)    | N/A(19) |
|       | mean 2.217 |       | median 2 |       | sd 1.134 |         |

How productive a use of time did you expect HELP to be?

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 0)      | 2( 4) | 3(12)    | 4(15) | 5( 4)    | N/A( 1) |
|       | mean 3.543 |       | median 4 |       | sd 0.852 |         |
| Other | 1( 2)      | 2( 6) | 3(13)    | 4(20) | 5( 8)    | N/A(16) |
|       | mean 3.531 |       | median 4 |       | sd 1.043 |         |

How productive a use of time did you find HELP to be?

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 3)      | 2(11) | 3( 9)    | 4( 9) | 5( 3)    | N/A( 1) |
|       | mean 2.943 |       | median 3 |       | sd 1.136 |         |
| Other | 1(19)      | 2(20) | 3( 2)    | 4( 4) | 5( 0)    | N/A(20) |
|       | mean 1.800 |       | median 2 |       | sd 0.894 |         |

Q.26. Change in attitude to HELP:

|               |    |       |
|---------------|----|-------|
|               | IC | Other |
| More positive | 13 | 5     |
| As positive   | 12 | 9     |
| Less positive | 10 | 32    |
| N/A           | 1  | 19    |

Q.27. Comfortable about:

|               |       | Yes | No | Not use | N/A |
|---------------|-------|-----|----|---------|-----|
| Accessing     | IC    | 34  | 1  | 0       | 1   |
|               | Other | 46  | 1  | 5       | 13  |
| Sending mail  | IC    | 35  | 0  | 0       | 1   |
|               | Other | 43  | 3  | 5       | 14  |
| Conferences   | IC    | 30  | 5  | 0       | 1   |
|               | Other | 36  | 6  | 10      | 13  |
| Downloading   | IC    | 13  | 10 | 12      | 1   |
|               | Other | 20  | 9  | 22      | 14  |
| Uploading     | IC    | 2   | 13 | 20      | 1   |
|               | Other | 12  | 11 | 28      | 14  |
| External DB's | IC    | 10  | 9  | 16      | 1   |
|               | Other | 13  | 8  | 30      | 14  |

| Q.27b. If yes, how many times to gain confidence? |       | 1-5 | 6-10 | 11-20 | 21+ | N/A |
|---------------------------------------------------|-------|-----|------|-------|-----|-----|
| Accessing                                         | IC    | 27  | 7    | 0     | 0   | 2   |
|                                                   | Other | 39  | 2    | 1     | 0   | 23  |
| Sending Mail                                      | IC    | 32  | 3    | 0     | 0   | 1   |
|                                                   | Other | 36  | 3    | 0     | 0   | 26  |
| Conferences                                       | IC    | 24  | 7    | 0     | 0   | 5   |
|                                                   | Other | 31  | 1    | 2     | 0   | 31  |
| Downloading                                       | IC    | 9   | 3    | 1     | 0   | 23  |
|                                                   | Other | 12  | 1    | 1     | 2   | 49  |
| Uploading                                         | IC    | 3   | 0    | 0     | 0   | 33  |
|                                                   | Other | 9   | 0    | 0     | 0   | 57  |
| External DB's                                     | IC    | 8   | 0    | 1     | 0   | 27  |
|                                                   | Other | 8   | 0    | 0     | 1   | 56  |

| Q.28. How helpful were written guidelines? |  | IC | Others |
|--------------------------------------------|--|----|--------|
| Very helpful                               |  | 4  | 4      |
| Quite helpful                              |  | 21 | 28     |
| Not helpful                                |  | 10 | 15     |
| N/A                                        |  | 1  | 18     |

#### Comparisons.

| Q.29a. Conferencing versus face-to-face? |        | Better | As Good | Less Effective | Don't Know | N/A |
|------------------------------------------|--------|--------|---------|----------------|------------|-----|
| Help                                     | IC     | 3      | 7       | 24             | 1          | 1   |
|                                          | Others | 2      | 11      | 38             | 4          | 10  |
| Socialising                              | IC     | 0      | 5       | 30             | 0          | 1   |
|                                          | Others | 0      | 5       | 43             | 7          | 10  |
| Intellectual exchange                    | IC     | 2      | 9       | 24             | 0          | 1   |
|                                          | Others | 5      | 10      | 35             | 5          | 10  |

| Q.29b. Conferencing versus face-to-face? |        | More Expensive      | About Same | Less Expensive | Don't Know | N/A |
|------------------------------------------|--------|---------------------|------------|----------------|------------|-----|
| IC                                       |        | 4                   | 3          | 22             | 6          | 1   |
|                                          | Others | 13                  | 6          | 21             | 14         | 11  |
|                                          |        | More Time Consuming | About Same | Less Expensive | Don't Know | N/A |
| IC                                       |        | 6                   | 7          | 18             | 4          | 1   |
|                                          | Others | 18                  | 2          | 19             | 13         | 13  |

| Q.30. Conferencing versus telephoning tutor? |        | Better | As Good | Less Effective | Don't Know | N/A |
|----------------------------------------------|--------|--------|---------|----------------|------------|-----|
| Help                                         | IC     | 3      | 15      | 16             | 1          | 1   |
|                                              | Others | 6      | 13      | 26             | 10         | 10  |
| Support                                      | IC     | 4      | 9       | 19             | 2          | 2   |
|                                              | Others | 2      | 12      | 33             | 9          | 9   |

Q.31. Does experience support or contradict:

|                 |        | Agree | Disagree | Uncertain | N/A |
|-----------------|--------|-------|----------|-----------|-----|
| Participate     | IC     | 14    | 9        | 12        | 1   |
| more equally    | Others | 25    | 25       | 7         | 8   |
| Depersonalising | IC     | 9     | 21       | 5         | 1   |
|                 | Others | 37    | 15       | 5         | 8   |
| Assertiveness   | IC     | 10    | 16       | 9         | 1   |
|                 | Others | 14    | 23       | 20        | 8   |
| Personal        | IC     | 22    | 7        | 6         | 1   |
| interaction     | Others | 43    | 7        | 7         | 8   |

Q.32. Importance of ability to use PC in job:

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 1)      | 2( 3) | 3( 7)    | 4( 6) | 5(18)    | N/A( 1) |
|       | mean 4.057 |       | median 5 |       | sd 1.162 |         |
| Other | 1( 2)      | 2( 1) | 3( 9)    | 4(13) | 5(34)    | N/A( 6) |
|       | mean 4.288 |       | median 5 |       | sd 1.018 |         |

Q.33. Frequency of use of computer in work:

|       | Once<br>a day | Once<br>a week | Less<br>than | Never | N/A |
|-------|---------------|----------------|--------------|-------|-----|
| IC    | 29            | 3              | 2            | 1     | 1   |
| Other | 50            | 6              | 2            | 2     | 5   |

Q.34. How would you describe your skills in:

|             |       | None | Hit and<br>Miss | Adequate | Expert | N/A |
|-------------|-------|------|-----------------|----------|--------|-----|
| Typing      | IC    | 0    | 12              | 22       | 1      | 1   |
|             | Other | 1    | 5               | 46       | 9      | 4   |
| WP          | IC    | 4    | 7               | 19       | 5      | 1   |
|             | Other | 3    | 5               | 34       | 18     | 5   |
| Spreadsheet | IC    |      |                 |          |        |     |
|             | Other | 4    | 6               | 19       | 5      | 2   |
| Other       | IC    | 4    | 6               | 19       | 5      | 2   |
|             | Other | 2    | 10              | 27       | 21     | 5   |

Q.35. Importance of PC's in future career?

|       |            |       |            |       |          |         |
|-------|------------|-------|------------|-------|----------|---------|
| IC    | 1( 0)      | 2( 3) | 3( 3)      | 4( 9) | 5(20)    | N/A( 1) |
|       | mean 4.314 |       | median 5   |       | sd 0.963 |         |
| Other | 1( 3)      | 2( 2) | 3( 5)      | 4(20) | 5(30)    | N/A( 5) |
|       | mean 4.200 |       | median 4.5 |       | sd 1.070 |         |

Q.36. Importance of PC's in undertaking studies?

|       |            |       |          |       |          |         |
|-------|------------|-------|----------|-------|----------|---------|
| IC    | 1( 0)      | 2( 8) | 3( 7)    | 4( 7) | 5(13)    | N/A( 1) |
|       | mean 3.714 |       | median 4 |       | sd 1.202 |         |
| Other | 1( 7)      | 2( 9) | 3(10)    | 4(16) | 5(17)    | N/A( 6) |
|       | mean 3.458 |       | median 4 |       | sd 1.369 |         |



APPENDIX 5b.

The Post-use Questionnaire.

Q11 Have you succeeded in down-loading text files of conference text or E-mail to your local computer?

*Please tick one box only*

Yes

No Tried, but failed

No Did not try

☐  
☐  
☐

If you tried, but failed, was this due to:

*Please tick one box only*

Not being able to create the log file?

Not being able to use the communications software to download the file?

Some other reason? Please specify .....

☐  
☐  
☐

If you did not try, please state why .....

Q13 When you accessed HELP to check your mail, which did you do most frequently:

*Please tick one box only*

Read any messages on-line and then reply immediately on-line?

Print messages and then reply later

Neither of these? Please state your method .....

☐  
☐

Q14 When you needed to keep an E-mail message, did you:

*Please tick one box only*

Save it on HELP?

Down-load it and save it on your own computer?

Print it and save hard copy?

None of these? Please state your method .....

☐  
☐  
☐

Q12 When you used the E-mail or Conferencing facilities, how often did you prepare material off-line on your computer and then upload it to the HELP system?

*Please tick one box only*

Always off-line, never on-line

More than half prepared off-line

Less than half prepared off-line

Never off-line, always on-line

☐  
☐  
☐  
☐

Q15 When you enter HELP to check conferences, which do you do most frequently:

*Please tick one box only*

Read new entries on-line and reply on-line?

Read new entries on-line and reply off-line?

Download new entries and print them?

Download the whole conference and read off-line?

None of these? Please state your method .....

☐  
☐  
☐  
☐

Q16 How often did you use your printer to make hard copies of E-mail or conference entries?

*Please tick one box only*

Never

Occasionally

Frequently

☐ ☐ ☐

Q17 If you had any difficulties accessing or using the HELP system that you could not resolve on your own, did you turn to any of the following for help:

Select as many sources as apply, but please rank in order of most helpful - 1 being most helpful

Fellow student

Tutor

Spouse or partner

Your children

Non-course friend

☐ ☐ ☐ ☐ ☐

Colleague at work

On-line help messages

Henley staff

Brainstorm staff

Other people

Other sources

☐ ☐ ☐ ☐ ☐ ☐

## Attitude to the HELP system

Q18 How helpful do you feel the HELP system has been in enhancing the following:

*Please circle the appropriate number*

Your encouragement to progress on the course

Your success

Tutor support

Administrator support

|           |   |   |   |   |   |         |
|-----------|---|---|---|---|---|---------|
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
| Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |

Q19 How helpful did you find the use of the HELP system as a whole to be in the successful completion of your course?

*Please circle the appropriate number*

Unhelpful      1   2   3   4   5      Helpful

Q20 How helpful have you found the following aspects of the HELP system to have been in your studies?

*Please circle the appropriate number for each aspect*

|                                           |           |   |   |   |   |   |         |
|-------------------------------------------|-----------|---|---|---|---|---|---------|
| Electronic mail                           | Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
| Conferences                               | Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
| Administrative information, bookings etc. | Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |
| External databases                        | Unhelpful | 1 | 2 | 3 | 4 | 5 | Helpful |

Q21 What do you consider to be the three most significant ways in which the HELP system has helped you in your studies?

*Please list in order starting with the most significant*

.....  
.....  
.....

Q22 What were your three greatest frustrations in using the HELP system?

*Please list in order starting with the most significant*

.....  
.....  
.....

Q23 If Henley had made greater and/or different use of the HELP system, how helpful do you think it could have been as a whole in the completion of your course?

Please circle the appropriate number

Unhelpful 1 2 3 4 5 Helpful  
Please suggest how you feel Henley might have used the HELP system to greater effect in providing student support. ....

Q24 Do you feel that the HELP system would have been more beneficial to you if it had been made compulsory for all students?

Yes No

Would you be in favour of Henley making a similar facility to HELP compulsory to all students in future?

Yes No

Q25 Please circle the appropriate number for each aspect

How difficult did you expect HELP to be to learn to use?

Hard to learn 1 2 3 4 5 Easy to learn

How difficult did you find HELP to be to learn to use?

Hard to learn 1 2 3 4 5 Easy to learn

How impersonal did you expect HELP to be?

Impersonal 1 2 3 4 5 Friendly

How impersonal did you find HELP to be?

Impersonal 1 2 3 4 5 Friendly

How productive a use of your time did you expect HELP to be?

Waste of time 1 2 3 4 5 Productive use of time

How productive a use of your time did you find HELP to be?

Waste of time 1 2 3 4 5 Productive use of time

Q26 Has your attitude to HELP changed as a result of using it?

Please tick one box only

Are you:

More positive

As positive

Less positive

☐ ☐ ☐

Q27 Would you now feel comfortable about the following?

Please tick one box for each aspect

Yes No Did not use

Accessing and logging on

☐ ☐ ☐

Sending mail

Participating in a conference

Downloading conference text to your computer

Uploading text from your computer

Using external databases

If yes, about how many times did you have to use the system before gaining this confidence?

Please tick one box for each aspect

1-5 6-10 11-20 21+

Accessing and logging-on

Sending mail

Participating in a conference

Downloading conference text to your computer

Uploading text from your computer

Using external databases

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

Q28 How helpful did you find the written guidelines to the system that were supplied by Henley?

*Please tick one box only*

Very helpful

Quite helpful

Not helpful

☐ ☐ ☐

## Comparisons

Q29 How would you compare conferencing with face-to-face tutorials:

*Please tick one box for each aspect*

Better As good Less effective Don't know

As a means of getting help with your course-related difficulties

☐ ☐ ☐ ☐

As a means of socializing

☐ ☐ ☐ ☐

As a medium for intellectual exchange

☐ ☐ ☐ ☐

How would you compare conferencing with face-to-face tutorials:

*Please tick one box for each aspect*

In terms of time spent by you, conferencing is:

More expensive About the same Less expensive Don't know

☐

☐

☐

☐

In terms of time spent by you, conferencing is:

More time consuming About the same Less time consuming Don't know

☐

☐

☐

☐

Q30 How would you compare conferencing with telephoning your tutor:

*Please tick one box for each aspect*

Better As good as Less effective Don't know

As a means of getting help with your course-related difficulties

☐

☐

☐

As a source of moral support

☐

☐

☐

Q31 Does your own experience generally support or contradict the following suggestions about computer mediated communication?

*Tick one box for each suggestion*

Agree Disagree Uncertain

Individuals can participate more equally in electronic than in face-to-face communication

☐

☐

☐

Computer communication is depersonalizing

☐

☐

☐

Computer conferencing encourages individual assertiveness

☐

☐

☐

Personal interaction is more difficult with computer communication because of the lack of contextual and verbal feedback

☐

☐

☐

Q32 How important to you is the ability to use a personal computer in your present job?

*Please circle the appropriate number*

Unimportant 1 2 3 4 5 Important

Q33 How often do you personally use a computer in the course of your normal work?

*Please tick one box only*

At least once a day

At least once a week

Less than once a week

Never

☐  
☐  
☐  
☐

Q34 How would you describe your skills at the following?

*Please circle one response per question*

|                       |      |              |          |        |
|-----------------------|------|--------------|----------|--------|
| Typing skills         | None | Hit and Miss | Adequate | Expert |
| Using word processing | None | Hit and Miss | Adequate | Expert |
| Using spread sheets   | None | Hit and Miss | Adequate | Expert |

Using other personal computing applications

|      |              |          |        |
|------|--------------|----------|--------|
| None | Hit and Miss | Adequate | Expert |
|------|--------------|----------|--------|

*Please specify main applications*

.....

.....

Q35 How important do you expect the ability to use personal computers will be in the future development of your career?

*Please circle appropriate number*

|             |   |   |   |   |   |           |
|-------------|---|---|---|---|---|-----------|
| Unimportant | 1 | 2 | 3 | 4 | 5 | Important |
|-------------|---|---|---|---|---|-----------|

Q36 How important have you found the ability to use personal computers in successfully undertaking your course of study?

*Please circle appropriate number*

|             |   |   |   |   |   |           |
|-------------|---|---|---|---|---|-----------|
| Unimportant | 1 | 2 | 3 | 4 | 5 | Important |
|-------------|---|---|---|---|---|-----------|

Q37 If you have any other comments you wish to add, please do so below

Thank you for your time in filling in this questionnaire.

Please send it in the enclosed return envelope to:

Fenella Galpin

CMC Manager

Henley Management College

Greenlands

Henley-on-Thames

Oxfordshire RG9 3AU

United Kingdom

APPENDIX 6.

Conference Contents Analysis Data.

## Conference Contribution Analysis.

These tables contain the total number of contributions in each conference categorised by participant type, ie tutor, administrator and student.

### Subject Tutorials. Tut. Admin.Stu.

|                                                         |     |    |     |
|---------------------------------------------------------|-----|----|-----|
| 1. Operations - Syn 3/4 with<br>Ray Wild/Peter Race     | 25  | 14 | 56  |
| 2. Operations - Syn 7 with Peter Race                   | 14  | 31 | 36  |
| 3. Accounting - Syn 3 with Carol Print                  | 19  | 9  | 24  |
| 4. Strategic Management - Open with<br>Andrew Heap      | 69  | 20 | 120 |
| 5. Strategic Management - Syn 3 with<br>Edmund Akehurst | 6   | 0  | 57  |
|                                                         | 133 | 74 | 293 |

Contributions by tutors/administrators = 41%

### Examination Preparation.

|                                                               |    |   |    |
|---------------------------------------------------------------|----|---|----|
| 1. Information Management - Syn 2 with<br>Tony Knowles        | 11 | 3 | 15 |
| 2. Panic - Syn 2. Student initiated<br>Statistics examination | 4  | 1 | 22 |
|                                                               | 15 | 4 | 37 |

Contributions by tutors/administrators = 34%

### Case Study.

|                                                |     |     |     |
|------------------------------------------------|-----|-----|-----|
| 1. Losehill - Syn 2 with Sue Foreman           | 29  | 2   | 93  |
| 2. Benetton - Syn 1&2 with Steve Downing       | 49  | 22  | 346 |
| 3. Benetton - Syn 3 with Steve Downing         | 15  | 33  | 217 |
| 4. Stratton - Syn 4/Tailored with<br>Gill Lane | 26  | 32  | 42  |
|                                                | 119 | 107 | 698 |

Contributions by tutors/administrators = 24%

### Group Working - General.

|                         |   |   |     |
|-------------------------|---|---|-----|
| 1. Group1 - Syn 1.      | 0 | 0 | 18  |
| 2. HRM - Syn 2.         | 4 | 0 | 6   |
| 3. PJMc - Syn 2.        | 0 | 0 | 48  |
| 4. Tshop - Syn 3.       | 1 | 0 | 268 |
| 5. Ass1 - Syn 2         | 0 | 1 | 47  |
| 6. Cavans Team - Syn 2. | 0 | 1 | 71  |
| 7. CJE - Syn 2.         | 0 | 0 | 36  |
|                         | 5 | 2 | 494 |

Contributions by tutors/administrators = 1%



# Examination Preparation Case Study.

|                             |       |   |     |
|-----------------------------|-------|---|-----|
| 1. Federal Express - Syn 2. | 0     | 0 | 82  |
| 2. Damon - Syn 2.           | 0     | 0 | 210 |
|                             | <hr/> |   |     |
|                             | 0     | 0 | 292 |
|                             | <hr/> |   |     |

Contributions by tutors/administrators = 0%

## Special Topic.

|                                        |       |    |     |
|----------------------------------------|-------|----|-----|
| 1. BS5750 - student generated and lead | 0     | 4  | 52  |
| 2. Ethics - Syn 3 with Alex Lord       | 3     | 7  | 25  |
| 3. Ethics - Syn 4 with Alex Lord       | 2     | 10 | 20  |
| 4. Russia - General with Ian Turner    | 21    | 7  | 63  |
|                                        | <hr/> |    |     |
|                                        | 26    | 28 | 160 |
|                                        | <hr/> |    |     |

Contributions by tutors/administrators = 25%

## Coffee Room.

|                                              |     |     |     |
|----------------------------------------------|-----|-----|-----|
| 1. Sample 12 months from May 91 to April 92. | 121 | 707 | 831 |
|----------------------------------------------|-----|-----|-----|

Contributions by tutors/administrators = 50%

NB Both tutors and administrators were using this conference as a means of socialising with each other as well as with the students. There was little if any direction of conference support given by either group.

