Institutionalization and innovation of instructional television at Carleton University

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ABSTRACT

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This study is an exploration of a television based course delivery service and its role in bringing change to teaching and learning within a university environment. There are three primary questions for which answers are sought: whether the development of the service has caused change in instructional practices within the university; whether the service has been institutionalized as an innovation within institutional culture and practice and will be sustained as an innovation; and has this service, as a low-technology means of course development and delivery, a role to play in the transformation of the university to meet the needs of faculty and learners in the "new" millennium?

The investigation includes discussion of innovation and the factors affecting adoption of innovative practice and product. With these factors in mind, the growth of the service over a seven-year period is reviewed to determine what impact it has rendered and how faculty, students and administration have received it.

It is concluded that the instructional television service has impacted instructional practice on the campus across a diversity of disciplines. The service also appears to have been institutionalized, not as a particular technological design, but as a focus for those who may wish to utilize a tool at the moment or to adopt an innovative practice. On the third purpose, it is concluded that the television course

delivery service will have a role to play in the future of the "new' university pursuant to consideration as to how strategies are designed and what resources are available to implement further innovations which will include the service.

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Introduction

A new age in education

The millennial reality is that education is moving at a greater speed than ever before towards substantial change influenced by the introduction of information technology, which itself is rapidly changing. Gilbert (1996) states, "There is no longer any question about whether or not information technology will become an integral part of education. There are only questions about when and how."

Technology is, at last (still?), on a threshold where it may be used to bring change to the quality and means of access to learning. It's adoption may enable the development of a more learner-centered universe in which greater success than ever will occur among the student population in terms of level of achievement, depth of learning and completion of programs.

However, this desired success will be tempered by the ability of institutions with their attendant populations to change radically how they approach the organization, management and delivery of teaching and learning. It is postulated that teaching will become more the art and craft of advising and guiding through mentoring rather than the process of instruction based on the lecture model. If this model is adopted, it is assumed that educational opportunity will evolve to a resource based learning environment, where the student, guided by a faculty member, tutor or mentor, will seek to develop knowledge in a pattern which is both individually relevant and meets accreditation requirements. Finding a suitable mix of pedagogical or andragogical design, technology application and a resource base with which to support this new model on a comprehensive scale is the challenge to be faced if the

"new" universities are to survive. Balancing the economic efficiencies and subsequent benefits with educational effectiveness within the institution must be a central goal of the "new" universities. How real is this scenario? And if real what are the choices available to assist in reaching this goal?

The purpose of this study

This study will discuss the redevelopment of the Carleton University television based learning service. The purpose of the study is to determine to what degree the potentially innovative course delivery service has impacted instructional practice within the institution through the introduction of this service, whether the service as an innovation has become institutionalised, and whether this service will be part of the solution in moving Carleton to becoming a surviving "new" university.

The Instructional Television system (**itv**) is a hybrid, established to meet the needs of a non-traditional student cohort and currently providing service to a traditional student cohort. As such, it can be viewed from two very different perspectives; that of a distance education provider service or that of a mass education provider service. Because it may be viewed from this dual perspective, elements representing each of these areas of activity will need to be included when reviewing the measures of innovation and institutionalisation.

To determine whether this service, in either configuration, may be considered an innovation, the broadly based indices of innovation as described by Rogers (1995) will provide part of the basis for comparison. As an innovation may be in other terms, institutionalised, measures of institutionalisation describing the expected change in behaviours as discussed by Curry (1992) will also be considered. In contrast to Rogers' discussion of innovation from a general perspective, Curry

approached the subject from a perspective more specific to post-secondary education. These complementary positions will be the basis for comparison of the measures of the redeveloped television course delivery system from its twelfth academic year (1989/90) through its eighteenth academic year (1995/96).

The comparison will be accomplished through a review of the services Instructional Television has provided to students and teachers and whether this system plays a sustaining role in encouraging change in teaching and learning practices at the University. This will include investigation of administrative and technical changes within Instructional Television operations and of pedagogical changes in the courses delivered through the service during the period noted above. The study will describe quantitative data obtained from central student and administrative records and through the use of questionnaires as well as qualitative data gathered through focus groups and group discussions to determine whether the system is truly an innovation and has become a standing or institutionalised part of the organisation.

Why the duality of measures? Stake (1995) notes the differences between quantitative and qualitative inquiry. "...The distinction is not directly related to the difference between quantitative and qualitative data, but a difference in searching for causes versus searching for happenings. Quantitative researchers have pressed for explanation and control; qualitative researchers have pressed for understanding the complex interrelationships among all that exists" (p. 37). Similarly, Wilson and Wilson (1970) describe measures or indicators as two types, hard and soft. A hard indicator is a measure such as a "quantitative description of the... situation in terms of human and natural resources. The second type of indicators, which we shall call soft, are the subjective feelings of satisfaction or dissatisfaction of people" (p. 17). In this instance

the soft or qualitative measure is intended to show the relationship between the parts as measured by these "subjective feelings of satisfaction or dissatisfaction".

In other words, in describing and assessing the development of instructional television at Carleton University, quantitative measures provide a sense of the scale and breadth of the service as it has grown within the institution through the prescribed period of this study. Qualitative measures, by providing the relations between parameters, will help to confirm or refute acceptance of an innovation. This will be indicated by the change in individual and aggregate behaviours (Wilson and Wilson, 1970) as part of the process leading to institutionalization.

The balance of this introductory chapter provides a context in which to set itv - both from an educational theory management perspective and from the historical origins of itv and the awareness of Carleton University's mission and challenges. Chapter 2 provides a review of a selection of the literature concerned with perception and definition of innovation, diffusion of innovation, the barriers to innovation, and how innovation might be promoted. Chapter 3 discusses the instructional television service from its inception through re-development. This discussion includes review of the academic, political and administrative environments affecting the development of the instructional television system; the impacts of the constraints and opportunities afforded by these environments; and the design of the service. Chapter 4 describes the tools used to gather data about the service and highlights the findings from the investigation of the service using these tools. Chapter 5 contains the discussion and conclusions of this presentation.

The author's role

This writer's role in the development in the system since 1989 was that of manager responsible for redesign and operation of the system. This included updating and rebuilding associated technical systems; securing teaching sites to be permanently equipped for televised teaching; developing administrative structures; promoting the service to the University community to increase utilization by a wider range of academic departments; advise as to the role of the service within the academic community in relation to course selection, design for televised teaching, enrolment patterns, and instructional support; and promotion of the possibility and acceptability of alternative mode course delivery to instructors and students.

The theoretical range of choice

Moore (as cited in Keegan, 1990) describes conventional education as classroom based instruction. This process may use any of the following methods for instruction; lecture, seminar, tutorial, discussion groups, film screenings, workshops, and laboratories. This system is described as usually instructor centered, with the delivery of information and communication occurring with teacher and student in the same place at the same time. There may be other variables added to the mix depending upon the discipline and the desire of the instructor to provide innovation for more effective learning within this environment. This conventional or traditional approach, while it slowly adopts change, dominates formal education practices and likely will continue to do so for some time to come.

Other modes of education are described by Keegan (1990) as non-traditional which included extension programs, extended campus, experiential learning, and the external degree as examples, and indirect or mediated education which "resembles

... but lack one or more of the essential components" (p. 21) of distance education. He discusses open education as an area of development sharing many of the tenets of distance education but that it should not be confused with distance education. Open learning is an area of development which has been fraught with confusion and misunderstanding and which has not progressed substantially in the past 25 years despite use of the term. While it may describe an institutional process or "special spirit" (p. 24) which enables students access to learning in a flexible and accommodating manner, it is hazardous to use the term in an administrative manner to describe a student's relationship with an institution. It is a descriptor which will not be considered in the context of this study.

Keegan (1990) continues with a description of educational technology as either a means of supplementing the activities of or substituting for the teacher. He provides a definition of educational technology as being "technology in education and technology of education" (p. 25). He includes Boyd's description (as cited in Keegan, 1990) of educational technology as being engaged "in the task of choosing and deploying" (p. 25) processes, strategies and machines which meet clients' needs in education. Keegan is very explicit in that use of educational technology as a supplement to the teacher in the classroom is to be excluded from the concept of distance education.

In an attempt to define distance education as one of a number of means of providing opportunity for access to teaching and learning activities, Moore (as cited in Keegan, 1990) included distance education in the non-traditional grouping as defined by the Carnegie Committee on Non-traditional Education. Keegan notes Gould's presentation in the Carnegie Committee report states that, "... non-traditional

study is more an attitude than a system and thus can never be defined except tangentially. This attitude puts the student first and the institution second, concentrates more on the former's need than the latter's convenience, encourages diversity of individual opportunity rather than uniform prescription, and de-emphasizes time, space, and even course requirements in favor of competence, and where applicable, performance" and concludes that this definition must only represent "...a vague range of educational programs that diverge from what is seen to be the norm" (p. 21) of conventional education. If one is to accept the Carnegie Committee's definition, much of the current practice of distance education is something other than non-traditional education.

How then is distance education to be considered in light of the vague definition given above? As background, Keegan provides review of the definitions proposed by Dohmen, Peters, Moore, Holmberg and Smith. Through several iterations of his definition, Keegan arrived at the following synthesis which characterized the practice of distance education as:

- "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 organization 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); and

- 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 socialization purposes" (Keegan, 1990, p. 44).

Further, Keegan reintroduces his earlier exclusion that use of print, audio, video and computer based materials for on-campus sessions and the use of similar materials for private study without the institutional influence and management were, again, to be excluded from the concept of distance education.

The elements noted above comprise the parameters of distance education as the earlier ones defined by Moore comprised the bounds of conventional education: they are the definitions adopted for this study.

Carleton University's approach

In 1978, in keeping with its principle organizing undergraduate mandate to remain accessible, Carleton University turned to the technology of the time to introduce televised instruction through an off-campus open cable distribution system. Televised course delivery was considered initially an alternative way to provide access to courses to non-traditional students who, by choice or necessity, did not attend courses on campus and who had access to the metropolitan Ottawa cable television service.

Instructional Television (hereafter known as itv), as a project, was administratively situated within the School of Continuing Education as part of the School's mandate to reach out to the community at large. The television service

operated as a complement to existing practices of the School which included off-campus live course delivery offered to members of communities yet within commuting distance of the University, the continued promotion of on-campus credit courses directed at evening clientele, and the provision of limited spaces in the day sections of credit courses for participation by part-time and full-time non-traditional Special students. These were considered the University's innovative course delivery approaches at the time (Mulvihill, 1981). It should be noted that itv was a service started in a time of fiscal constraint and its role in the University's academic program was questioned then as it is now. It was also never mandated to represent or function as the University's distance education arm.

The system genesis

The system model developed for Instructional Television was one which most closely resembles that evolved in Australia known as the Australian integrated mode or New England model which evolved from efforts at the University of New England, Australia begun in 1955 (Keegan, 1990). As in the Australian model, Carleton University played a role in organizing and supporting the administrative operation of the system to assist the academic instructor in their administrative tasks with the off-campus students. As in the integrated mode model, the itv teaching faculty was responsible as part of assigned teaching load to design, write and present all course materials to their students both on and off campus. The expectations held by the instructors for both categories of learners were identical. Processes of teaching and, it was assumed learning, were identical for on and off-campus students. In time, it was noted that on-campus students were enrolling in the television sections for reasons which are relevant at this time - availability of required courses, course

quality, flexibility of access, and a means of alleviating personal and job schedule conflicts.

However, where in the Australian model the method of course delivery for the on-campus and off-campus student and the preparation of course materials was divided as to the needs of the clientele, this was not the case for the Instructional Television model. The distance student received the same course content through the televised lectures and participated in the same learning exercises, as did the on-campus student. Within the institution, expectations of course development and preparation for teaching on television did not differ significantly from those held for on-campus course development minimizing (it was thought) initial impact on the instructor. As noted by Webster (1989) "...Teaching (and by extension, preparation for teaching) is expected to be carried out competently in accordance with calendar course descriptions and accepted departmental policies and practices" (p. 12).

This situation also reduced or eliminated the need to identify and academically approve courses and programs for distance students as separate from the mainstream of the institution. This reduced formal accreditation concerns, ensured that these courses were academically identical to those offered on campus and ensured that student grade transcripts would not differentiate between the on-campus and television section grades. However, this did not alleviate the anecdotal sense held within the academic community at the time that television courses could not be as good as those on campus - "television trivializes".

The lack of a tradition at Carleton University mandating development of a pool of separate alternative mode credit courses for management and delivery under the auspices of a distance education office, encouraged use of the central institutional

course offerings for delivery through the television system. The development of separate course offerings for delivery through distance or continuing education has proven problematic in other institutions (Kirby, 1993). As has been the case in single mode institutions, the support for the development of a separate stream of courses for alternative credit education, while to some extent considered a desirable institutional objective, has not received open and continued support in other institutions (Johnson, 1984; Kirby, 1992). In times of fiscal decline, non-traditional aspects of program offerings of institutions are the first to received scrutiny and remain in jeopardy of early elimination (Kirby, 1992; Sparks, 1994).

The facility

The **itv** service emerged from the success of a joint systems engineering experiment, known as the Wired City, which delivered credit courses by satellite between Carleton University and Stanford University, California in the years 1975 to 1977. The post-experiment local system development was encouraged by the academic success of the satellite experiment, by the personal interest of the serving Dean of Engineering and was also encouraged by others associated with the strong television tradition on the Carleton campus.

Where the facility was first conceived as an access opportunity for those students unable to attend traditional day or evening on-campus courses, the televised courses were delivered without full consideration of the instructional potential of the medium; without full consideration of teaching in what was essentially a distance education environment, and without full consideration of the needs of learners studying in a non-traditional environment. Instructors volunteered to teach on television. Courses were a mix of studio and live classroom offerings and were aired live-to-

cable with telephone links provided for synchronous participation by students off-campus. The attributes of distance education as described by Keegan (1990), were not overtly part of the design repertoire of the system managers and were not seminal in focusing the concerns of the designers. Development was intuitive rather than guided by the theories of instructional design with the result that the needs of teachers, learners and technology did not receive even-handed consideration at this time.

Thus the non-traditional students enroled in the television course sections were disadvantaged by a lack of enhanced course design, a lack of knowledge within the institution regarding the best practices of distance education and the technology used for presentation and delivery was rudimentary. In addition, the students were expected to carry the performance expectations associated with the role of the traditional full-time student. While the institutional perception was that community needs were being adequately met, numbers of registrants remained low and the system was not provided with a distinct mandate and resources to develop further. itv remained out of the mainstream of Carleton University's academic activities in the manner of distance education and continuing education operations at most universities of the time (Clark, 1993; Dillon & Walsh, 1992; Pearce, 1993).

The faculty

Carleton, growing from non-traditional roots as a part-time evening college, aspired over time to the role of a traditional or classical university, with recognition and promotion for faculty emphasizing research and publications relegating the importance of teaching to a lesser role. However, teaching remained an important interest of many of the faculty.

The faculty functioned in a traditionally autonomous manner (Black, 1992),

designing and delivering conventional courses based on the classroom lecture mode supplemented by laboratory instruction, seminars, and tutorials and the use of assignment and examination for evaluation. The concentration of resources for and presentation of learning opportunities remained focused on the campus and the classroom. Alternative modes of course delivery were antithetical except for the off-campus credit courses sponsored through the Office of Continuing Education and taught by interested faculty members. Non-traditional students, including those unable to attend courses on campus, were enroled in these credit courses as Special students through the School of Continuing Education. The School functioned as the Registrar for these students who were not interested in or not yet eligible for admission to a degree program.

Preparation for teaching and learning through the television system

The target student group was not of the mainstream. Some courses offered were, in some faculty members' opinions, considered academically trivialized by the televising process. Serious concerns were expressed by some about the public image of the institution due to the way courses were prepared and candidly presented, and about the technical and production quality of the television presentations. Yet the instructors who participated were known and well received by students and a growing non-registered viewership. However, in spite of the enthusiasm of the early instructors, the number of courses offered during the first decade only ranged from three to twelve and course registrations never exceeded 800.

For the first years, assistance to instructors to help them understand and prepare for their participation in this activity was limited. There were few other

student support systems such as detailed print course materials prepared and distributed or services such as scheduled tutoring in place. Prepared learning materials, being those typically developed for semi-private classroom presentation and inexpensive, were rudimentary compared to materials prepared for "traditional" distance education. Off-campus students accessing courses through this live synchronous environment expressed that they were not directly addressed by the instructor during the televised instructional sessions and felt less a part of the learning group than they desired. Communication between instructor and off-campus student was available by telephone and on-campus office appointment. However, these facilities were not promoted as a central component of the teaching-learning process.

As noted above, the non-traditional students off-campus participating in this system were expected to perform within the norms and structural environment of available to the traditional student. Instructors and the institution did not provide support beyond simple communication for these off-campus learners sometimes not even to the level of what might be available to the traditional student on campus. These included face to face meetings, post-class sessions where they were encouraged, campus based learning support services and the support of peer groups. That a number of non-traditional students in the televised courses persisted and succeeded is testament to their strength of will. It was understood that there was no willingness on the part of the University to commit to a group of students who might only be distance education students. As much effort was shown at this time for the delivery of face to face courses in remote centers by the university faculty.

A review of the categories of students registered in the television sections in

the early years of the program showed that almost 50% were Special students, not yet admitted to degree programs. This encouraged the perception that non-degree, non-traditional students were the predominant group of registrants in the television stream. This perception dominated faculty positioning until recently and can be seen as keeping development and utilization marginalized. This was due to a lack of realization of the potential fiscal value of meeting the educational needs of the non-traditional and part-time student more completely and thoughtfully. Accommodating the growth rate of the traditional on-campus student population was taken as the major challenge during the earlier years of the television service.

From inception, Instructional Television was a hybrid system founded more on engineering rather than pedagogical principles. The lack of attention to and interest in pedagogical concerns about the early design of the system meant slow growth in support for the service from the University academic community. There was no accepted alternative learning system culture on the campus beyond the remotely taught on-site courses. One result was that academic programming for the television course system had only rudimentary coherence for it was based on volunteerism from the teaching cohort. Addressing this lack of academic coherence was one of the early objectives pursued through the first years of re-development. It was an objective which was not met and for which strong criticism was eventually recorded in reports from the Department of English Language and Literature (Henighan, Jones & Laird, 1993), the Department of History (Abel, Bickerton, Black, Elliott, Greenberg, & Marshall, 1993) and from the Arts Faculty Study Committee on **itv** (Bohm, de Pourbaix, Elliott, Gildenhuys, & Sheppard, 1995). It is somewhat ironic that criticism noted the lack of academic coherence in program planning and the

resulting lost opportunity. The academic departments, in conjunction with Faculty Deans, controlled program and enrolment planning at Carleton University for all course offerings including those on television.

Definition of the itv system

In reviewing the structure of the system, the defining characteristics of distance education as outlined by Keegan (1990) may be found in this application of technology for the delivery of instruction. Instructional television remained a course delivery process based on the classroom presentation with the teacher and a number of the students present and available for discourse in the same space with the remainder of the students participating as a local off-campus population. Thus, theoretically, this was not a true distance education system. It was rather an electronic supplement to conventional on-campus classroom courses. This uncertainty about what service the institution was attempting to provide to learners in non-traditional settings may have proven both an unrealized benefit and a hidden detriment to the system's development through early and subsequent years.

Chapter Two

Literature Review

Literature selection

The literature reviewed for this presentation focused on studies that explored variables thought to be indices of innovation, diffusion of innovation and/or institutionalization. They include not only the characteristics of innovation and its diffusion, but measures of values, and of impact, of innovation in the fields of conventional and distance education. The review includes studies that discuss the innovation environment, innovation impact, barriers to innovation; the elements necessary to promote change; and how an innovation is institutionalized. These also include assessment of the preparedness of administration and faculty, student acceptance of innovative learning situations, and measures of system effectiveness after change. The intention of this review is to determine whether similarities in innovative alternate mode situations exist and to provide support for the central premise of the re-development of the instructional television operation. This review provides the means to measure the development of Carleton University's instructional television system against measures established externally and in a larger context.

One of the needs of this study is the selection of definitive benchmarks against which to measure the changes brought by the television course delivery service to a limited teaching sphere. Particularly relevant to this study is "Diffusion of Innovations" (Fourth Edition) by Rogers (1995), which extends innovation research beyond review of the "first adopters of an innovation" (Rogers, 1995, p. 159). The tools provided by Rogers will be used, together with those described by Curry

(1992), to mark and evaluate the development of the system that is the subject of this case study.

Perceptions of innovation

The following review surveys the range of factors which influence innovation and how innovation may be perceived and measured for success or failure.

Generally, innovation in an educational setting has been either tied to personalities (Brew, 1982; Booker, 1987; Curry, 1992; Geoghegan, 1994; Rogers, 1995), to centrally mandated decision and direction (Brew, 1982; Moran, 1993; Rogers, 1995; Shale, 1987), or tied to, promoted by and even overshadowed by the latest technological fad (Goeghegan, 1994; Heinich as cited in Wagner, 1990; Jost & Schneberger, 1994; Moran, 1993). Innovations that have tended to focus on single elements or concepts of change have limited impact across systems and have not been sustained (Kanter as cited in Curry, 1992). If the innovation proved to be less effective than originally touted, the proponents' interest lessened, or if the financial costs were in excess of what could be afforded, or the results less than expected in terms of teaching/learning outcomes (Brew, 1982; Levine as cited in Curry, 1992), the innovation could disappear or be co-opted piecemeal into the general system to disappear as a unique and meaningful change. Rogers (1995) describes this effect as either replacement or disenchantment discontinuance or reinvention of the innovation.

Whether the wave of support for innovation is tied to a personality or early adopter, or to first meeting a short term need, to the attraction of a popular process in later stages of adoption (Johnson, 1984), or to a particular technological innovation seen as beneficial by an early majority (Goeghegan, 1994), longevity

may only be assured if the innovation or change is promoted and accepted across a diverse base of support (Curry, 1992). An innovation must take on a life of its own and be adopted by a cross-section of a community of users in order for it to become institutionalized. Rogers (1995) noted that the innovation process might not always proceed in a linear manner according to the stages described by him. The non-linear flow of innovation will confound the more general perception that innovation has occurred or is happening at the moment which allows observers to determine whether the innovation will be successful or will fail. This in turn affects the continued or growing support the innovation may receive and again affect its eventual success or failure.

Defining innovation

For this study, I adopt Rogers (1995) definition of innovation as "...an idea, practice or object that is perceived as new by an individual or other unit of adoption. It matters little whether or not an idea is objectively new as measured by the lapse of time since its first use or discovery. The perceived newness of the idea for the individual determines his or her reaction to it. If the idea seems new to the individual, it is an innovation." (p. 11).

According to this definition, clearly the experience of presenting a course in a television environment is a new experience and perhaps an innovative experience for the teacher involved with the system for the first time. With an innovation defined and experienced, what propels it to acceptance or adoption? It is expected that the television experience and its attendant demands will prompt instructors to evaluate whether this process is of benefit or is simply perceived as additional work to prepare, present and manage a course in this non-traditional manner compared to

the conventional teaching environment (Keegan, 1990). The efforts demanded of the individuals combined with the perceived level of benefit will encourage or discourage adoption of the process and tarnish or enhance how it is perceived as an innovation.

Diffusing innovation

What is the process of innovation or change making its way into the structure of an institution or an individual's environment? Called diffusion, it is defined by Rogers (1995) as "...the process by which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas" (p. 5). Each of Rogers four facets of the diffusion process; *the innovation* itself, the *communications channels*, *time*, and the *social system* are the means by which to track and record the process and outcome of innovation.

Adopter categories.

Rogers describes five ideal type categories of adopters. These are the groups within the social system involved in the adoption of an innovation or innovative process. Where these five categories occur in the innovative process, there is no distinct break between each. The following are "an overview of the dominant characteristics and values of each adopter category" (p. 263):

- Innovators - Venturesome, cosmopolite and generally able to cope with a high degree of uncertainty. Generally outside the boundaries of the larger social system and not always respected by members of that system;
- Early adopters - More integrated into the social system and localities. This category has a high degree of opinion leadership in systems and may be considered the individual to check with about new ideas. Members of this group

can be sought as change agents and role models due to the respect they receive from other members of the social system;

- Early majority - are deliberate in adopting new ideas before the average member of a system and provide an important link between the social system's interpersonal networks. They are the largest group of adopters making up one third or more of the population of a system;
- Late majority - this group makes up about one third of the social system and adopts innovations just after the average member of a system. They are sceptical and may be driven to adoption by economic reasons or peer pressure. They are working with relatively fewer resources than the innovators and early adopters;
- Laggards - these traditionalists are the last of a social system to adopt an innovation. They are the most localite with their points of reference in the past. They are generally working with the least resources of all the adopter categories.

The innovation-decision.

Innovation is very much the adoption of new behaviours whether it is a process or the use of an artefact. The behaviour change in the users is the measure of success or failure. The individual proponent of innovation, in participating in the process, passes through stages of what Rogers describes as the innovation-decision process. The process has five stages: the *knowledge* stage where an individual may be exposed to the innovation; the *persuasion* stage during which the individual develops a positive or negative attitude towards an innovation; the *decision* stage in which the individual moves to choose between adoption or rejection; the *implementation* stage during which the innovation is put to use; the *confirmation*

stage in which the decision to adopt or reject may be reinforced. Decision reversal may also occur at this stage. These stages can be identified in all categories of adopters as they work through the innovation adoption process and carry the innovation forward or determine that it will not be incorporated into the larger social system.

Rate of adoption of an innovation.

In a review of characteristics (noted below) of what will enhance the prospects and accelerate the acceptance of an innovation, Rogers (1995) states "...Past research indicates that these five qualities are the most important characteristics of innovations in explaining the rate of adoption" (p. 16). A rapid rate of adoption may imply that an innovation will be successful providing the innovation remains in effect as anticipated. Rogers' principle characteristics illustrating what may affect rate of innovation include:

- "*Relative advantage* as the degree to which an innovation is considered better than the idea it supersedes;
- *Compatibility* as the degree to which an innovation is perceived as consistent with existing values, past experiences and needs of potential adopters;
- *Complexity* as the degree to which an innovation is perceived as relatively difficult to understand and to use;
- *Trialability* as the degree to which an innovation may be experimented with on a limited basis;
- *Observability* as the degree to which the results of an innovation are visible to others" (p. 251).

Of the five characteristics identified by Rogers, four are clearly positively

related to the rate of adoption of an innovation. *Complexity* is negatively correlated to the ease of understanding, use and adoption of an innovation. *Overadoption* is the adoption of an innovation when experts feel that it should be rejected.

These characteristics are important for "...The individual receiver's perceptions of these characteristics predict an innovation's rate of adoption" (Rogers, 1995, p. 250). These are factors predicting the rate of and not the possible success of adoption for other factors such as *overadoption* may confound success and longevity. It should also be noted that the time frames implicitly included in Rogers' stages are of significant duration. The adoption of innovation does not occur "overnight" and if it appears to have happened, it may be a case of *overadoption* which can result in the failure of the innovation in the longer term for it is not an innovation, rather at worst, a fad and at best a product of unfettered non-strategic enthusiasm.

Drucker (1995), in contrast, states that "...It is commonly believed that innovations create changes - but very few do. Successful innovations exploit changes that have already happened. They exploit the time lag ... between the change itself and its perception and acceptance" (p. 40). In Drucker's view, successful innovation occurs following the review and adoption by Rogers' (1995) "innovators" and "early adopters"; i.e. innovation becomes integrated into a larger environment. If Drucker is correct in his perception of the exploitation of the time lag, the innovation will appear acceptable to the "early majority " and "late majority" as it will be past the *implementation* and *confirmation* stages for the "innovators" and "early adopters". It will be well on its way to successful adoption. In this manner, Drucker supports the *time* facet of innovation presented by Rogers. Innovations do

not occur "overnight" and may take years, even up to a decade to be truly institutionalized.

Measures of acceptance of an innovation

Rogers (1995) discusses rate and progress through the stages of adoption of an innovation as they are linked to his five defining characteristics and in terms of consequence which "are the changes that occur to an individual or to a social system as a result of the adoption or rejection of an innovation" (p. 440). He identifies three classifications of consequence as descriptive categories; desirable/undesirable, direct/indirect, and anticipated/unanticipated. Rogers indicates that while consequences as the outcomes of the innovation diffusion process are vitally important, they have generally received far less attention by researchers.

In an effort to find indices which will provide a measure of innovation adoption or institutionalization, Goodman and Associates (as cited in Curry, 1992) state in different terminology, that "...The process of institutionalization (of change) is temporal and incremental", meaning that institutionalization involves levels that can be achieved over time. They show that "its continuance (or success) is measured by the 'persistence' of behaviours associated with an innovation or program" (p. 14). The following, representing the degrees of or 'variations' in institutionalization (adoption), are presented as five facets of behavioural change:

- *"Knowledge of the behaviour* - the extent to which an individual knows about and is able to perform a particular behaviour;
- *Performance of the behaviour* - an attempt to provide a measurable indication of the extent to which participants perform each behaviour;
- *Preferences for the behaviour* - a reference to whether the participants like (or

dislike) performing the behaviour;

- *Normative consensus* - the extent to which the organization's participants are aware of others performing the requisite behaviours and agree about the appropriateness of the behaviour;
- *Values* - the social consensus about values relevant to specific behaviours. Values are concepts of the desirable, or statements about how one ought or ought not to behave" (Goodman and Associates as cited in Curry, 1992, p. 15).

Curry suggests these five facets as the characteristics of the change in behaviours, which may be used as the basis for measurement of institutionalization or adoption. As Rogers notes, consequences as the measure of outcome of an innovation may also be measures of change in behaviour. Similarly, Curry considers institutionalization of innovation a measurable outcome of innovation, where there is observable and lasting change in behaviour.

Successful adoption/institutionalization.

Curry (1992) states, "Change is difference; institutionalization is making that difference last" (p. 6). ".... It is with this final phase of the change process that an innovation or program is fully integrated in to an organisation's structure" (p. 8). Curry also notes Kanter's key characteristics and one of her own:

- Changes or programs must actually be implemented so as to establish a causal relationship, so that when an innovation is put in place, it has results;
- Organizational structures are subject to change once they come under the influence of the innovation;
- Because of the authority that many of the old structures hold within the organization, the innovation and its subtle features, become legitimate (Kanter as

cited in Curry, 1992);

- Valuation takes place as part of the final phase of institutionalization. (Curry, 1991)" (p. 10).

Valuation is the assessment of the effectiveness of an innovation and concurs with the *confirmation* stage as described by Rogers (1995) above.

Curry further describes three levels of institutionalization which may occur within organizations:

- The structural level - represented throughout the institution in multiple concrete ways;
- The procedural level - policy and behavior associated with innovation become standard behaviors;
- Incorporation (cultural level) - host organization accepts values and norms and incorporates them into the organization (Curry, 1992, p. 15).

Collectively these seven characteristics featured may be used to measure the level of the adoption or institutionalization of an innovation. Curry (1992) states "each adds to an understanding of what takes place when an innovation is institutionalized" (p. 16).

An example of institutionalization at the structural level concerns budget allocation. The move from "soft" funds (discretionary amounts in departmental budgets as an example) to "hard" funding (formally included in the institution's general budget) is considered to be a clear indicator of adoption or institutionalization. As noted by Hooper (1975), "In the National Programme, institutionalization is defined to mean take-over of the reform on to local budgets after the period of outside funding is over" (p. 38). The allocation of budget from the

central source for continued operation of a innovative component of a system is a fundamental measure of adoption or institutionalzation.

Barriers to innovation

> Barriers - "...the difficulties may actually lie in either the innovation itself or in other factors, such as characteristics of the academic organization" (Johnson, 1984, p. 497).

In the circumstance surrounding the development of the television system at Carleton University, we must consider that a proto distance education system was under construction in an institution geared to catering to the massive increases in demand for access from traditional students in the 1976/77 and 1993/94 periods of growth. While the community historically adopted and supported non-traditional teaching activities, these activities were established on the margin of "normal" practice of the institution. Members of the larger central social system sponsored these non-traditional activities but they still remained politically marginal applications. While physical residency was not official policy, there remained a strong imperative amongst faculty at Carleton University that students must attend, for part of their degree programs, on campus. The television operation, six years after the beginning of the redevelopment period, was targeted as a component in an institutional strategic planning exercise. It was determined that there be "increased use of itv (for mass education on campus)... (however,) distance education applications should be considered but should not be of primary concern, except in regard to the question of ensuring that they are pursued on a full cost-recovery basis" (Copley, 1995, p. 17).

Institutional culture

It is recognized that institutional or organizational culture shapes efforts to

extend an innovative facility of the institution beyond its traditional bounds (Peraya & Haessig, 1995). In an educational environment, innovation is generally associated with change to delivery of or access to teaching and learning curricula and processes. Culture may include the difference between an institution existing as a closed or open access university where the regulatory environment affects the ease with which innovation may be introduced to process and curriculum; the ease with which students may enter and move through a program and the value placed on traditional and non-traditional courses (Brew, 1982; Haughey, 1989; Kirby, 1992; Moore, 1994). The culture of an institution may range from being principally a research university, to a research and teaching university to a predominantly teaching university. For example, within each of these types of institutions, teaching is assigned a particular value for promotion and tenure which in turn will affect concern for intellectual interaction between teacher and learner (Curry, 1992; Black, 1992; Olcott & Wright, 1995; Peraya & Haessig, 1995). This may include the degree of importance of physical and intellectual residency. In the same manner, the institution's academic values and performance expectations will affect the ability of their learners to successfully complete their academic programs with a sense of satisfaction and in a manner commensurate with tertiary level learning (Black, 1992; Booker, 1987; Curry, 1992; Kember & Harper, 1987). The financial soundness of an institution extending from those with significant independent funds to those relying on public grants, student tuition and campaign donations will determine whether the institution will innovate or focus on core business with the need to survive as a main goal. The lack of secure funding may cause the innovative engine to be driven to find means of ensuring survival, even at the perceived or real cost of quality of academic

programs. The result is a substantial impact on the institution and its ability to fulfill its role as a university, which is to be more than a training center (Black, 1992; Haughey, 1989; Kirby, 1992; Moore, 1994; Mulvihill, 1981).

Innovative development and teaching practices, including distance education teaching, in most institutions are not a focus for traditional acknowledgment or reward (Black, 1992; Booker, 1987; Clark, 1993; Olcott & Wright, 1995). Kelly (1988) wrote, "Academic staff, particularly those who work in mixed-mode institutions, are frequently expected to put increased effort into preparing and revising distance education materials without any coherent system of time allocation or without a reward structure that recognizes their efforts" (p. 33). Except where there is a contractual arrangement for the development of electronic curriculum materials or for the development of distance education courses, little has changed where teaching students at a distance in a dual-mode institution is a "part of load". The practice at Carleton University mirrors that of dual mode institutions where the development and delivery of distance education courseware is considered part of load.

Other factors of institutional environments, real and perceived may present barriers to innovative ideas and activities. These may include "actual institutional arrangements, rules and procedures. ...Indeed, perceived rigidity in institutional rules can present as powerful a barrier to the introduction of a new idea as rigid institutional rules themselves" (Brew 1982, p. 157). Other aspects of institutional culture, which may inhibit innovative developments, are the points of view from which measures of innovations are taken. The competing perspectives about the significance of the quantitative and qualitative measures, which are not always taken in a complimentary or balanced sense, do little to ensure the presentation of a true

picture of the effectiveness of the change (Marton as cited in Brew, 1982). The perception of success or failure as noted by the change agents may not always accurately coincide with the perceptions of those charged with implementation. The digression between parties, wrought out of conflicting interests supporting the different types of results, confounds attempts to modify the innovation or the implementation process to enhance chances for success (Johnson, 1984).

Controlling the "roll-out" of an innovation will be affected on the one hand by the urgency to begin diffusing the innovation to the potential adopters. Conversely, the change agent, as a part of the social system (Rogers, 1995) may be under some pressure to maintain reputation and credibility in the eyes of the adopters (Rogers, 1995). The process of releasing the innovation or gate-keeping (Rogers, 1995) is crucial to the success of the innovation. Gatekeeping, "controlling the flow of messages through a communication channel" (Rogers, 1995, p. 148), is a process very much individual to the social system into which the innovation will be released. Finances, social need, and credibility of the change agent and politics affect it.

Marginalization

Innovative teaching activities are popularly thought to occur in universities primarily within continuing and distance education departments because of their peripheral status within campus organization. It is also well known that distance education activities, like continuing education activities, on traditional campuses have historically been considered peripheral to the main roles of the institutions (Clark, 1993; Olcott and Wright, 1995; Pearce, 1993; Wagner, 1988) and not readily accepted by faculty (Catchpole, 1992; Clark, 1993; Dillon and Walsh, 1992). This marginalization is considered a principle reason for both the relatively slow adoption and the benign

tolerance of distance education practices on most campuses (Kirby, 1993; Wagner, 1988). This marginal position limits the effectiveness of these units as innovators and change agents in a substantial manner in post-secondary institutions. In contrast, the ability of a continuing education unit, and by extension, a distance education unit, to be a revenue generator is perhaps one of the principle elements which has attracted attention to them at this time. This single feature, as these units are considered to have few others of an academic or research nature to politically empower them like the traditional academic faculties, may be all that has supported their survival to this time and will do so in the near future (Kirby, 1992). The jeopardy even in this position is the tendency for institutions to cut at the fringe in difficult times. Any innovations by this group would remain on the margin and would be lost with cuts unless subsumed into a mainstream group or, alternatively, if seen to be financially viable.

Marginalization, while one factor in limiting the innovation process, is considered by this author to be a significant point in planning and instituting change. The political and academic place of a change agent in an academic institution and how this position is worked is critical to the success of plans and innovations this agent may introduce to the central organisation.

Faculty involvement.

In an academic environment, the development and implementation of change in teaching and learning practices is directly linked to the support of the faculty. Members of this group are the agents who will bring change forward. As stated by Kelly (1988), "In designing an alternative system, we might examine teachers' perceptions of how teaching should proceed, design a reward structure that encourages further development of these ideas by allocating time for innovation in

teaching and publicly recognize significant advances in teaching" (p. 33). The degree to which all parties are included as noted by Kelly (1988) is central to the success or failure of effective development and implementation of any change.

As faculty work within a set of administrative, operational and academic boundaries with expectations clearly defined for measurement of their performance, the introduction of change disturbs the process as it has established itself over time. The disruption can be significant. McGuire (1988) noted considerable disruption on the part of new faculty at Athabasca University as they attempted to prepare for teaching in a manner "incongruent" with that to which they had been accustomed as they attempted to meet the expectations of the new institution. McGuire (1988) indicated that the esteem of the instructors was in jeopardy and remained so over an extended period. The lack of support for the transition process and the resulting difficulty experienced by faculty over a move to a radically different and innovative process indicated a need for careful preparation and support for these members of the social system, which apparently wasn't available.

Brew (1982) discussed several points concerning the preparation of faculty to accept innovation or change. The allocation of alternative courses to (teaching) staff workload were not well received as "they were seen by staff as too radical a change and one which they were not therefore prepared to make" (p. 158). Staff, in this case, perceived the assignment as affecting workload, that the student assessment processes would be impacted and would mean changes beyond their control. Faculty perceived the existing regulatory environment as not able to accommodate the necessary changes without considerable effort. That may not have been the case. However, the accommodation was not accomplished. If one considers Rogers'

characteristics of *complexity* and *compatibility*, it is clear that there was a negative correlation of these characteristics to the innovation resulting in a lack of success in this case. It reinforces the need to consider all facets of the proposed change including the members of the social system involved in the change.

Johnson (1984) notes the perspective of the perception of change in her discussion of faculty receptivity to innovation. She states "One observer noted that the literature on innovation in higher education is often written about from the perspective of change advocates rather than from the point of view of the persons - usually faculty members - who are expected to implement change" (p. 496). As Rogers has described, the issues of *complexity*, *relative advantage* and *compatibility* can easily be seen differently by the advocate and the prospective implementer. The gap may widen if the prospective implementer cannot *trial* or *observe* the innovation even where the advocate positively promotes it or the change agent. The introduction process should include input about the change or innovation from peers of the implementer or target client group to enhance credibility of the change agent, the process of diffusion and the innovation itself. Faculty members remain cautious and hesitant, wary of being manipulated.

Brew (1982) discusses the impact of the investment of time and effort committed by members of a social system (Rogers, 1995) to an innovation. This commitment to a change is affected by the amount of time already invested in the innovation by those participating in the change process. Those in the process will be less likely to withdraw from the project if they have made significant time and effort investment in developing components of the innovative product or process. However, inability to reconcile this investment with the proposed change results in

withdrawal from the process by those who would implement the change.

Generating innovation

For the purposes of this study, each of the following factors is considered to be part of the internal academic and operational environment of a traditional university and is reviewed from this perspective. These "environments" have been very much a series of closed and sometimes unconnected environments, where developing and managing teaching and learning have been concerned. Only in this decade is there significant movement to "open the cloister" in reaction to pressures from the surrounding political, social and economic communities. These pressures have put considerable strain on the internal systems. At the same time, these pressures have provided opportunity for change.

Economic factors

Buoyant economic times within an educational environment are represented by growing student enrolments which results in expanding tuition revenue bases and grant funding in public institutions. The sense of confidence brought on by this growth means both easy maintenance of status quo and, in the instance of pedagogical development, the opportunity to experiment with innovation. Innovative pedagogical activities, undertaken mostly through individual initiative, may be observed by members of an educational institution (Rogers' [1995] social system) as change which is non-threatening, experimental, of intellectual interest but not necessarily practical. These innovative undertakings, testing pedagogy, technology and administrative environments are less likely to be burdened by resistance from the system or individuals. Where resistance occurs, it may be circumvented or ignored by the innovator without inhibiting the initiative, as any outcome of the

experimental innovations will have marginal or no impact on central systems and norms. As the status quo is maintained, innovation is seen as testing on the periphery of institutions or systems.

Innovation occurring in difficult economic times may be seen more as expediencies to survival than innovation for the sake of beneficial development. The initiation of innovative actions in adverse conditions is more likely to be initiated centrally with little or limited input from the members of the social system. The innovations are more likely to be more deliberate and more strategic. Ironically, this initiative is likely to be institutionalized as the culture of the institution shifts with varying degrees of significance and restabalizes in its new configuration. The resulting innovations are likely to be a response to the need to fit a changing social or fiscal environment, rather than innovating to experiment with new forms of academic life.

Sparks (1994), in discussing and identifying "major challenges facing nontraditional education in the future", (indicated that) "public institutions highlight funding as a major need followed by institutional acceptance and organizational change" (p. 32) in how non-traditional education is managed within institutions. In good times, non-traditional elements of the system receive abundant but less focused attention due to the small degree of interest in these arenas and the growing needs of the traditional students seeking greater diversity in their learning environment. The draw on resources for traditional needs within the post-secondary sector is considerable and impacts negatively on acceptance and institutionalization of innovative modes and practices which don't appear to meet mainstream needs (Kirby, 1993).

Political factors

Academic institutions are a microcosm of the larger surrounding society in that there are political structures that affect change and growth. The academic and operational management positions within a university are hierarchically organized, closely controlling large-scale change and development. Within these hierarchies, "...Leaders ...are those persons or groups who can mobilize human, material, and symbolic resources toward specific ends. ...Mobilizing resources in any social system depends on the ability of leaders to direct the behavior of others" (Rosen as cited in Curry 1992, p. 20). "Further, that ability depends on the power invested in or assumed to follow the position and it depends on the ability to influence or persuade members of the organization that the innovation has merit" (Curry 1992, p. 20). More plainly, one means of effecting innovation would be through the position of the players and their ability to use the political system available to them (Kirby, 1992; Moore, 1994; Sparkes, 1994)

This type of leadership comes from a domain foreign to most members of a post-secondary educational social system. Change by fiat will result in change. Yet in the collegial environment it is questionable whether change resulting from fiat is truly innovative and sustainable.

The social system

In the context of this study, the social system encompasses persons and organizational structures involved in all decisions and activity directed toward the use of resources within the university to implement change. In the majority of cases, members of the system working within this environment initiate change. If innovation is to be encouraged, the role of the lead members of the social system is vital to

successful initiation and continuance of the innovative activity. What are the characteristics of leaders?

As noted by Curry (1992), a leader must be able to provide "...an accurate reading of organization members' willingness to embrace new issues and to support change (which) is often the hinge that allows change to swing in the direction favored by its initiators" (Beckhard and Pritchard as cited in Curry, 1992, p. 23). The leader may be other than a senior executive of an organization. Curry (1992) describes leaders as "responsible for managing the innovation and for guiding support in interest groups as well as to individual members of organizations" (p. 20). Leaders may often be assigned the responsibility to lead and manage the process of change. Rogers' (1995) description of the change agent shows a similar role. "The change agent usually seeks to obtain the adoption of new ideas, but may also attempt to slow down diffusion and prevent the adoption of un-desirable innovations. Change agents use opinion leaders in a social system as their lieutenants in diffusion campaigns" (p. 27). However the change agent is less part of the social system as the role of agent places them halfway between the change agency and the client or opinion leader. In this case, one may equate the leader (Curry, 1992), depending on his/her status within the organization, with the role of either the change agent or the opinion leader (Rogers, 1995).

Faculty are the lead members within the post-secondary environment and have ultimate responsibility for the development of innovative, effective learning environments (Beaudoin, 1990; Dillon & Walsh, 1992; Olcott & Wright, 1995).

Role of faculty

While faculty are key to successful implementation of innovative practices following their introduction, establishing intended or desired innovation outcomes within an institution requires that, while leaders must be visionary in promoting and initiating change, the direction of communication and decision making must be two-way or the desired adoption will not occur (Curry, 1992). The process must begin with shared valuation of intended or desired outcomes of change. Faculty must have a "high degree of input; moreover, the faculty's input or participation should blur distinctions that can be labeled as top down or bottom up" (Curry, 1992, p. 25). They are main players in the promotion, development and adoption of innovation.

Johnson (1984) describes Medsker's views of participation in non-traditional education. "Medsker tabulated reasons for faculty participation, such as general support for the concept of extended education, as well as obstacles to participation, such as general opposition to the concept or uninformed apathy. Medsker noted that participating faculty tended to be positive and that skepticism tended to decrease with experience" (p. 483). Familiarity breeds comfort and a willingness to try. Where the attitudes of faculty may be hostile or apathetic (in Medsker's study, they were hostile towards instructional television), this may be defused through increased exposure to or experience with the innovative process. Black (1992) echoes this view in her review of literature regarding the acceptance of distance education as an innovation as it is introduced into conventional post-secondary environments.

The degree to which the values supported by the innovation converge with those of the members of the conventional environment who may be requested to adopt the innovation will impact the degree to which the innovation is accepted.

Black (1992), in her study on faculty support for distance education as an alternative means of providing university education, concluded that support for distance education in a conventional setting was related strongly to faculty beliefs about the purpose and form of higher education in general and their sense of the compatibility of distance education with these beliefs. The correlation is strongly positive for those who support conventional post-secondary education and alternatives (or innovations) such as distance education.

Olcott and Wright (1995) note that, "...faculty participation encompasses a broader role that includes instructional and scholarly leadership" (p. 9). As noted earlier, by virtue of their position in an academic institution, faculty are vested with the responsibility to both develop and promote innovative practices and must be provided with the means of becoming involved in the development processes at a very early stage in the scheme. Within the social system of the institution and beyond the political realms of that system, "...The (early adopter) distance teaching faculty must serve as ambassadors to potential (new) distance teaching faculty" (Olcott & Wright, 1995, p. 9) who may, subsequently and with confidence, adopt the practice of innovative development and extend change. In the same manner, faculty who are involved and committed to change in pedagogy within conventional or distance education will lead by example, demonstrate their innovations for purposes of observation, and provide credibility to the change process.

The use of exemplars in the analysis and the resulting measure of the success of a change may enhance the development of innovative practices. Booker (1987) states that "...The key to an understanding of an innovative program ...would appear to be the exemplar" (p. 7). He further states, "the exemplar provides a

demonstration of the focal activity of members and is the primary means of teaching the paradigm to a newcomer" (p. 7). The tangible representation of a practice or outcome assists in the clear interpretation of the innovation and its effect on the factors of the environment to which the innovation is targeted. Booker (1987), building on the importance of the exemplar as an agent to promote change, also called for an expanded understanding of "the institutional environment and its normative makeup" (p. 10). Given the bias towards the normative makeup within a institution, Booker (1987) noted that pressures from this larger community often led innovative projects to take on conventional characteristics "in order to display something measurable by existing standards" (p. 6).

This move to take on the "conventional characteristics" may either strongly situate the innovation within parameters where adoption is secure and at the same time, may be the precursor to the innovation being co-opted into the conventional environment. "The well-documented tendency for the conventional to co-opt the innovative is especially strong where the innovative program has been unable to implement the basic elements of change necessary to the articulation of the program (e.g. Warren, 1971), or where the innovators can be persuaded to abandon crucial elements to achieve political compromise (legitimacy). Given the commitments involved, this sort of struggle is frequently bitter and divisive, leaving the innovative program in increasing jeopardy" (Booker, 1987, p. 7).

The success of the faculty member as leader (Curry, 1992), the exemplar (Booker, 1987), or the opinion leader (Rogers, 1995), in moving an innovation into a position in an institution which results in adoption, is a significant factor in the adoption of the innovation within the institution.

Additionally, the faculty member as leader, may be the innovator, the change agent, or the early adopter. In the interest of success in promoting and institutionalising innovation, the innovator needs to be prepared to relinquish control of the innovative development and its continued growth to the Early Adopters and further to the Early Majority at an appropriate time. This will encourage investment of initiative by these new players, to carry the concept of innovation through the levels of institutionalization (Curry, 1992). This can occur to a point where many of the aspects of the innovation are acceptable to a majority of the members of the social system (Rogers, 1995) and where the structural, behavioural, and cultural changes have remained in place.

Chapter Three

*Development of **itv** as a Learning System (1989 - 1996).*

Beginning the rebuild

In the first decade of operation (1978/1988), administrative responsibility for the programming of instructional television (**itv**) was assigned to the School of Continuing Education. The **itv** service continued to deliver credit courses to students off campus through cable television services in the greater community. The faculty participating (the early adopters) carried the service over the first decade out of goodwill, interest and some degree of ego - the public recognition was an aspect which encouraged participation in these early years. However the service also saw a significant decline in the number of courses offered during the first seven years. Concurrently, there was a decline in student enrolments putting the service in jeopardy of being closed down. The scale of operation, by this time, was five courses and some 250 enrolments - well below potential.

A change in management of the School of Continuing Education in 1985 resulted in a dedication of new energy to the service and increased promotion of the service to members of the academic community. This resulted in increased use through a more insistent "selling" of the service over a two year period to individual faculty members and academic department heads. However, by the end of the first decade, the service had not progressed beyond being a marginal service for the delivery of academic programming and in terms of the numbers and categories of students served. There was a degree of inertia growing about the system that saw some remediation in the form of modest growth in numbers and courses serviced in the tenth through the twelfth year.

By the summer of 1989, 15 courses were in the "line-up" for the Fall session. Further, what had not changed by this time was the assignment of management responsibility for programming the service, management of the technical operation including the technology infrastructure and staffing, nor the perception held by the larger University community of the service as a fringe operation.

When re-construction of the system began, it was considered vital to continue to break down the inertia associated with the facility to effect substantial change. It was necessary to provide management coherence for this resource drawing management responsibility to a single office. At the time, responsibility was assigned to different departments on the campus depending on their areas of expertise. Technology was "ancient", instructors received little or no recognition for their involvement with the system and **itv** was generally thought to be a niche application serving a small marginal sector of the student population. There was no central mandate provided by the institution for the task of redevelopment at this time. The opportunity to effect change remained within the School of Continuing Education. It was an opportunity seized by School management, which resulted in an improved and continued operation.

The unit mission

The mission of the redeveloped unit, then, would be to provide a turnkey service for learners and instructors to assist them in their non-traditional learning and teaching activities. To succeed in achieving this goal, it would be necessary to: develop a permanent dedicated staff; design administrative procedures beyond what existed at the time for the limited services available; increase the variety of these services; and to upgrade the administrative, production and presentation technology.

What was also considered critical in the early days of redevelopment was the need to encourage the growth and acceptance of an alternative course delivery mode culture. This would need to be a culture readily acceptable to individual participants including but not limited to early adopters which would bridge this critical developmental gap and would enhance chances of adoption.

It was felt important to create a ground swell of interest in and confidence about a broader system rather than to be prescriptive about the potential and application of a technological innovation or production tool. As noted in Curry (1992) "An innovation must receive the support of enough people within the organization (a critical mass) to be institutionalized" (Goodman and Dean as cited in Curry, 1992, p. 25).

A series of objectives evolved over the first eighteen months from mid-1989 as the management of the unit took shape and greater control was vested in a single office within the School of Continuing Education.

Re-development objectives

The first objective of rebuilding the instructional television system was to further enhance access to classroom instruction through the televising process for all learners on and off-campus in a flexible, low cost manner and to provide greater control of access to instructional activities to the learner. The second objective was to design and implement a teaching environment which would encourage instructors to become involved in the process and to assess course design and presentation needs thereby employing additional instructional strategies and technologies in their courses where suitable. An overall objective was the integration of the televising process as a means of course delivery into the teaching and learning environment,

rather than attempt to integrate a conventional teaching process into a television environment.

How would these objectives or outcomes be reached successfully? As previously noted, Curry (1992) proposed that reaching desired outcomes such as adoption of innovation required visionary leaders capable of two way communication and involving all parties in decision making. Shared valuation of desired outcomes and ensuring that faculty had a "high degree of input" (p. 25) which blurred distinctions as to whether decisions were top down or bottom up were also necessary. It must be seen that developments in the system resulted in observable benefits to participants and that the participants shared decision making.

Re-development activities

A natural inclination was to work to increase the volume of the **itv** operation in order to enhance its stature as a course delivery system for both traditional and non-traditional students taking courses on and off-campus. This conclusion was reached indirectly after reviewing the performance of the service over the preceding decade. The service appeared to have persisted in spite of a lack of central support for an alternative mode of course delivery. It was showing continuing signs of regeneration, which began after its first seven years of operation. Given additional support and guidance, it could become a thriving alternative venture.

Planning for development was more by intuition than by design in the beginning. It was undertaken on the basis that installation of hardware technology, while fundamental as the tools of the system, wouldn't be the sole foundation for change and growth. In addition, the parameters for the direction and scale of change for the system were unknown. It was anticipated that greater involvement of the

faculty, participating from a position of willingness and supported in their efforts to participate, would provide the critical mass and direction necessary for the promotion of further academic and financial support for expansion. From this, choice about technology and other pedagogical needs would flow from the energies and demands of involved faculty ready to participate in course innovation and development.

However, at the time redevelopment was to commence, there was:

- minimal culture for alternative mode delivery as a part of the central course delivery process within the institution;
- no senate or executive recognition that alternatives to traditional programming were necessary at this time;
- very limited understanding that program offerings might be designed and delivered through non-traditional means;
- no central instructional design and development service mandated to work with professors to produce course ware for alternative mode delivery on a large scale;
- no coherent institutional commitment to technology for the delivery of courses in alternative modes - even television;
- computer technology was still in its infancy at this time and not a technology ubiquitous to staff and students as a non-prescriptive tool of the kind necessary for university teaching and learning.

Administration and personnel

The "new" system was envisioned as a multifaceted learning system, which would build on and improve the existing television recording base. Decisions taken included: to reorganize the administrative structure for the solicitation, management and provision of services to courses; to assume responsibility for technical staff and

technology systems design and implementation; to seek resources to renew the outdated technology; and to support instructors with the means to develop and deliver courses and to provide learners with the means to access and use courseware.

The role and stability of the Instructional Television staff was crucial to the successful acceptance of the "new and improved" service. Real change had to be demonstrated to incoming faculty and students. The staff participated in the development of the vision of the service. They moved forward with a sense of purpose and pride taking on tasks and requests beyond described job functions. They were encouraged to assist faculty to realise their competencies (Dillon & Walsh, 1992) and that faculty members' possible lack of familiarity with the televising process shouldn't constrain their sense of feasibility or compatibility (Black, 1992) about the system, distance education processes and their own teaching needs and designs.

As noted above, support staff were key to moving faculty forward to experiment with the system. As demands on the system grew, so did the need to change a casual part-time staff to a professional dedicated full-time technical and administrative staff. This need was demonstrated by a combined growth in the number of departments using the service and the number of courses offered through the system. The rationale for adequate staffing and the benefits to be attained were carried forward to senior management with mostly positive results. By 1993, the full-time complement had increased from two to ten persons supplemented during the academic year with 13 to 15 part-time qualified staff.

System design

Heinich (as cited in Wagner, 1990) indicated that "to focus on technologies without considering their role as catalyst of change can adversely affect the ability of technology to enact change" (p. 55). Fundamental to the redesign process for Instructional Television was that change would be focused on options for people and not for the procurement of technology. Acquiring technology was necessary but its acquisition would remain secondary wherever possible and was to be guided by the process of needs assessment when determining solutions. Making technology readily available was meant to encourage, not to require change and was for use at the will of the teacher, not the technologist.

The foremost principle followed to guide the transition was that television be used as a communications or distribution device rather than as a production tool. It would be a capture and display or "store and forward" tool. The aspects and requirements of television as a production medium should be as invisible or "opaque" as possible and faculty should concentrate on good teaching - **itv** would do the rest as painlessly[1] as possible. Instructional Television (**itv**) was to be an alternative mode of access for both traditional and non-traditional students whether on-campus (in residence), in town (on the cable system), or remote (genuine distance education students) "piggy-backed" on courses that were being taught on campus.

Theoretical instructional design and development practices for the preparation of courses for television delivery were not applied in a formal manner. These practices were not available for development and delivery of traditional on-campus courses not

[1] The instructor was not requested to change how he or she would present in the class nor would they be expected to operate following the direction of television staff. The television staff was to take their leads as if the instructor were functioning as "director" of the "show" thereby minimizing the intrusion on the

being televised and were not introduced at this time. In the interest of encouraging instructors to present their courses in this very public arena, it was not asked that a formal re-design of the classroom course occur. Where instructors requested assistance in developing materials, or training in the use of the available technology or for additional external resources to be acquired, they were supported to the fullest extent possible. In some instances, where instructors became very enthusiastic about enhancement possibilities, they outran the ability of the service to provide adequate resource.

This lack of formal redesign for the television medium ran in the face of some faculty, but it was strongly felt that the successful "live" instructor would be a successful "video" instructor. Assessment discussed later in this presentation supports this thesis.

A principle objective was to develop a system of course delivery, which would involve and satisfy a critical mass of interested academic administrators and instructors in addition to a continuous stream of students. To this end, the technology was to remain as opaque as possible, to facilitate extending instruction into the community and as transparent as possible to enhance delivery in the classroom without overly impacting the instructor.

The adoption of the "highest common factor technology" approach meant, that while simple video technology would be the basic delivery medium, as noted earlier, it did not preclude any faculty member from incorporating aspects of the latest pedagogical techniques and technologies in their itv courses. Where a technological change in course presentation or communications infrastructure was implemented, the change was instituted in parallel with the original service wherever

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academic to accommodate the needs of the television "production".

possible to ensure that few, if any, students were disadvantaged due to a lack of access to technology or other services. Thus, itv as a facilitator service, provided a sophisticated level of course support for both instructors and students, consulted with faculty about presentations but did not control how or what was presented or by whom.

The decision to continue with the relatively benign "camera in the classroom" approach in the process of re-engineering the Instructional Television system was made to lessen resistance to participation by faculty. It was thought that by also encouraging involvement of those faculty who had previous experience, these veterans would encourage others to believe that they too could successfully participate[2]. It was hoped to seed acceptance of innovation and change in teaching and learning without requiring extensive resource allocation for course development. Available resources were used for technology, which was required in the short term for an improved presentation and recording environment. Strategies for promotion of the service and the development of opportunities available to instructors were designed to build on the sense of history of the operation, the current geographic reach of the service and on the continuing participation of the exemplars in the academic community who supported and were active in course delivery through the television system. Any change, which did occur, was accomplished within the existing academic and administrative structures of a university founded on a traditional culture. Initially however, system design changes were developed and implemented without on-going overt consultation with faculty regarding the details of design and process. Observation of and consultation with faculty was included in

[2] Through *observability* (Rogers, 1995), faculty may consider *relative advantage, compatibility*, and the

development practices after the first two years of the redevelopment period.

Design of services. In order to remain effective and viable beyond the energies and interests of personalities and those individuals responsible for system operation, Instructional Television must become part of the mainstream institutional culture.

It was necessary to revamp technology, review and increase the numbers of courses available through the system, develop learning support services, develop marketing services, plan means for making these courses more readily available to on-campus students as well as an expanded off-campus target audience, unify the management of the operation, and improve the conditions for staff operating the system. Planning for "teaching on television", while recognized as important to maximize the potential of the medium for effective instruction, was left dormant after an initial flurry of activity. First efforts were meant to encourage academic staff to review and utilize instructional resources available to them. Interest expressed by the Instructional Television staff in course development and enhancement, with any small promise of support, encouraged a similar interest in the academic cohort. As this interest grew within the involved academic cohort, it was realized that instructors' desires could not be adequately supported at this early time. This resulted in disappointment amongst the academics and skepticism in future discussions concerning development. Proactive consultation with instructors to promote enhancements to instruction and interaction with learners was discontinued for some time to come. Reactive attention was paid to individual requests from instructors for support and these were fulfilled wherever possible at the time.

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degree of *complexity* and, it was hoped move to active *trialability* and on to *adoption*.

Specifically, service development was not neglected. While only limited assistance was provided to instructors for sourcing and obtaining or designing and producing course materials, full services to assist course administration were provided uniformly[3]. The central computing services developed a computer communications service for students. This provided each registered local (and currently distant) student with e-mail and Internet access. In addition, the itv service continued:

- to provide course outline development services for faculty;
- liaison to support instructors in the development of complex course packs for students;
- the provision of course outlines and materials and the return of tests and assignments to itv section students;
- extended Tapes-to-You service; [4]
- the organization and administration of examinations on and off-campus;
- to develop a tape review service for students able to get to campus.

Design of facilities. Prior to 1989, technology used in the classrooms and technical operations centers consisted of a mix of equipment appropriated from early experiments. This included unused items borrowed from other departments on campus and low quality equipment, including first generation colour industrial video cameras purchased with what extra funds could be allocated at the ends of fiscal years. The flexibility and the quality of the technical and physical plant were severely

[3] This included provision of individual course telephone numbers and answering machines . This was converted to a central voice mail service with 18 months. Other initiatives saw the provision of a central computerized grade management system linked to a telephone access reporting service for students.

[4] Service for delivery of course lectures by videocassette and associated materials to students studying at a distance from the campus and living beyond the reach of the metropolitan cable television service.

limited. This restricted what could be done to support an instructor who wished to be innovative in a class session. While technology was not to be a prime element in the development process, at this stage it couldn't be neglected for there wasn't really a sound basic platform from which to change.

To this end, hard technology became available serendipitously through successful petition to government grant programs. A cooperative group perceiving success in the growth of the television service during the first three years of re-development crafted this response to a government call for proposals. The proposal earned sufficient capital to allow re-building of two teaching sites dedicated primarily to itv. Facilities were designed in a familiar form for "at will" use by participating faculty. A number of faculty enjoyed the "luxury" of the equipped classrooms to the degree that they enhanced course presentations and requested access to these sites for their non-televised courses.

Internal pressures

Pressures against continuing with the candid classroom format of production, and for building a more comprehensive production based service, arose from a number of sources. However, the cost of traditional television production militated against more fully produced academic presentations. The need to mount a large number of courses in a relatively short time required facilities not readily available to the University for large-scale complex production activities. The likelihood of convincing a large group of instructors to personally commit a significant block of time for course development was low. The University was not in a position to provide the resources to allow such a scale of activity. This left little choice at the time re-development was to occur. The following sections detail some of the issues.

The political environment.

"Many deans and directors (of Schools/Faculties of Continuing Education) see themselves as non-threatening and therefore accepted within the (central) organizational structure by both administration and faculty. A number have not considered organizational structure and placement as a factor in success and therefore are not sure how to respond" (Sparks 1994, p. 32).

When deans and directors are considering their unit's security, they are uncertain as to how to situate within the organization and how they are perceived. Are they heading a benign facilitating unit of worth to the institution? Are they in competition with central academic units and therefore perceived as a threat to these academic units? Is their best position, if there is control over positioning, to remain in the mainstream or on the fringe politically (Haughey, 1989; Kirby, 1992, 1993)?

However, current decision trends in universities either consider, or actually result in, reduction of the responsibility of these non-academic units in their role of supporting mainstream credit activities or result in closure of such schools and faculties removing them from this part of central operations. This further demonstrates the marginal importance associated with continuing education and, by extension, distance education activities where they are separate administratively, as a significant part of mainstream traditional post-secondary institutions (Kirby, 1992; Moore, 1994).

At Carleton University, the School of Continuing Education was originally established with the intention of having its own faculty and programs. However, the School remained without full-time faculty, never developed its own credit component to complement that offered by the University and continued to function principally as the

Registrar for Special [5] students to provide them access to credit courses. However, the interest of the academic departments was on degree students rather than Special students greatly reducing Special student access to and participation in credit courses. For a lengthy period, academic departments thought students in the television sections of courses to be mostly Specials and thus "students of Continuing Education" rather than degree credit students of their departments. However, review of the categories of students in **itv** sections revealed that, by the Fall term 1989, 70% were students admitted to degree programs. Further compounding the marginalization of Special students and, thus **itv**, was the issue of grant funding for registered students from the Ministry of Education. For example, Special students were worth the same as 3-year BA program students but worth less than Honours BA and other degree program students.

Instructional television service development was impeded by a number of factors. **itv**'s position as a unit within the School placed it in the political margin. The perception by the academic community of the unit as a service centre mainly for Special students closed the thinking as to how this unit could be used to serve the mainstream traditional student. This is evident in the lack of knowledge about the demographics of the television student cohort, on the part of the teaching faculty through to senior academic management. The impressions held by the academic units, were ones in which they felt they had neither administrative control over the enrolments in televised sections nor did they appear to be resourced to support these

[5] The category of Special student at Carleton provided individuals the opportunity to register in credit courses without having to be admitted to an academic program within the University. Once these students establish a successful academic history, they are eligible to apply to a degree program with advanced standing. Providing space for Special students at the expense of degree students in Ontario can mean a reduction of income for the institution as Special students are funded a lower rate than Honours, Masters and Ph.D. students. However, the recruiting route from Special to degree student (as for Mature students)

enrolments. This increased their reluctance to participate and played a large role in the lagging development of the service over the first decade.

On many campuses the operational units responsible for non-traditional and distance education activities, mostly schools or faculties of continuing education, were also charged with being self-sufficient. This provided them with autonomy unknown within the **itv** and Continuing Education operation at Carleton University but also kept these other units on the margins of the institutional organization and academic body politic (Moran, 1993; Wagner, 1988). Unlike the majority of other institutions in the country where "distance" offerings had been developed, managed and funded separately, the **itv** courses originally, and to this day, were from the central offerings of the University and have not been as sensitive to the vagaries of downsizing. This factor, in addition to the subsequent promotional "campaign" to raise the academic community's understanding about the operation of the instructional television unit, resulted in growth over a four year period. This has safeguarded the operation of the unit because of the increased size and variety of the offerings each academic session.

Yet over the years, as noted above, sentiment expressed by the academic community at Carleton indicated that Continuing Education and, by extension, **itv** were thought to be different; that control over courses, enrolments, student categories, and teaching faculty assignment for credit course activity resided with the School of Continuing Education. This was not the case. Concerns about the rigidity of course design and delivery, and issues of credit to faculty for participation were expressed in an August 1982, Report on **itv** from the Carleton University School of

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is nevertheless a significant revenue stream.

Continuing Education. A comment of the report was that the control of course offerings and design was vested with the central academic body and this was confounding the development of the academic offerings of itv at that time. Perception and reality were indeed strangers to each other.

This 1982 report did present ways of overcoming limitations of the design and included components, which may be effectively incorporated in designs today. These included modularized packaging of courses and materials for delivery with the support of tutors combined with careful consideration of the target audience as part of the design process. The report also noted the fact that the popular off-campus televised courses were the equivalent of on-campus courses thereby posing no problem for accreditation (Ibid., p. 5). Thus several possibilities for successful development were noted but not acted upon in the first decade for the institution had no central need for such a service.

The academic environment. As part of the re-development process, control over, or participation in, the selection of academic programs or for series of courses to be developed for alternative mode delivery, was not vested with the service unit. These decisions remained with the academic units. A faculty member, out of interest in the process, offered a course for presentation. Courses might also be offered by a departmental chair or director as a means of accommodating fiscal or enrolment targets or staffing needs. What did not occur were automatic increases in funding to these units following increases in enrolment.

The original role assigned to the Instructional Television unit of the School of Continuing Education was to facilitate the delivery of instruction to students off-campus unable to attend courses at the University. In addition, the perception remained strong

that the students associated with courses offered through this alternative means were of marginal importance in financial and academic terms in comparison to the traditional on-campus full-time student. The process of televising courses also enhanced the perception that the television courses were of lesser quality than those offered on the campus even though they were the same course taught by the same instructor using the same text and evaluation processes. These perceptions remained until appropriate academic administrators and teaching academics were informed of the shift in the learner demographics and the pedagogical enhancements, which were beginning to occur in the televised courses. The strong level of academic performance by television section students was noted by faculty and was further cause for positive interest. These achievements were a small element causing a positive shift in the perception of how itv students performed as learners.

In 1989, at the outset of re-engineering Instructional Television as a unit within the School of Continuing Education, it was necessary to see the system as more than just a course televising service equipped with basic technology. It was important to present the instructional television operation in a context of course delivery which could successfully be meshed with and draw from the central institutional course offerings and teaching resources. If this were to be successful, it became evident that with growth, this alternative course delivery system would impact on administrative and academic structures, resources, systems and beliefs in the institution in a more than marginal way.

By the end of the 1995/96 academic year, the University had not accepted nor could it guarantee that a program of study could be completed through this method of delivery. This electronic outreach program remained ancillary for the majority of the

credit activities planned for on-campus and remote on-site live instructional programmes. Alternately, the service had become integral to program maintenance, if not survival, in several academic departments and was being received with more favour by an increasing number of departments in times of growing restraint. Financial cutbacks necessitating alternatives were becoming a regular feature of planning in the changing post-secondary landscape at this University.

External pressures

By 1990, pressures were exerted on the system from the cable provider. These pressures, to fill the airtime or lose the channel, caused a fundamental shift in how courses were to be offered from this point forth through the television service. In 1991, the service moved from a synchronous live-to-air with real time interaction available to the "local cable area" off-campus student to a time-shifted asynchronous delayed interaction model (live-to-tape) moving the service closer to the distance education approach discussed earlier. This permitted, or depending upon the perspective of the reader, required the service to coordinate more effectively course material distribution by consolidating the week's course lectures to be aired at a single broadcast time, thereby reducing the chance that the "distance" student would miss one of the lectures occurring each week. This also simplified the re-broadcast of courses, which provided a second chance to capture the week's course materials. The ability to rebroadcast was soon lost as the number of courses to be aired increased over the first four-year period. This was replaced by a tape review service, which rapidly grew into a very high demand service used by the itv students and their colleagues in the videotaped on-campus course sections. The growth of this

operation has since required that it become self-sustaining[6].

In addition, with the need to "fill air-time", the service sought out co-operative ventures with supplemental content providers thus cementing relationships for ancillary materials cleared for broadcast which remain to this day.

Additional pressures have come through growth of the off-campus student population. This group requires acknowledgment by the instructor through expeditious assignment management, changed examination procedures, communications needs and by receiving recognition from the instructor during in-class activities. This cohort has also caused a number of changes viewed by some, but not all, members of the academic community as improvements. These changes include: increased workload due to larger section enrolments; the use of e-mail communication with students; censoring what may be presented in a open televised forum as compared to the frank discussion which may occur in a closed classroom; and increased public "input" to the course by increased calls to faculty.

Impacts

On itv

The development of itv as an "opaque" facility supporting instructional processes was intended to have minimal impact and provide maximum benefit starting with the participation of the instructors and concluding with the students. It was intended that successful learning outcomes should be influenced only by the interaction between the instructor and learners, between the learners and between the learners and the content as in a conventional environment. The outcomes measures were to be focused on instructors effectively sponsoring, and students

[6] By 1995, the service operated out of the University library was circulating 100,000+ cassettes during the

successfully reaching, educational objectives embedded in the courses. These goals were the domain of the instructor and academic department and remained beyond the itv system administrators. It was hoped that the influence of the system was limited to facilitation of the interactions noted above and did not unduly impact the interaction between participants in class once any novelty factor for students of being televised had subsided (usually very quickly).

Impacts resulting from this approach included: rapid growth in the number of courses offered resulting in effective and full use of staff and facilities; some increase in the impersonality of the service; and little opportunity for input on academic development.

On faculty

The instructor remained responsible and in control of the development activities of the course and associated materials. As per the typology adapted from Keegan and Rumble (in Keegan, 1990. p. 122) in #6 "Mixed-mode, multi-departmental model", the instructor was also responsible for both internal and external students changing the dynamic of the assignment of the teaching load for the itv instructor. This assignment added significantly to workload in terms of increased teaching assistance and student management. For example, the size of the video sections have, in many cases, exceeded that of the on-campus sections by a ratio of 2:1 to 4:1 where enrolments in both the on-campus and television section were now the responsibility of the instructor.

As the itv system was developed and promoted beyond the first three years of the redevelopment period, as noted earlier in this presentation, concerns were

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Fall and Winter terms.

raised by a number of academic units. They included concerns about maintenance of course integrity and quality. These included administering examinations at a distance; a perceived loss of control over presentation due to integrating teaching activities with the televising process; loss of interaction with students; that the means used to measure (test) learning would be compromised by the larger enrolments in the televised courses; and having to learn how to work with adult learners joining a course at a distance. These concerns were all valid[7] and a number of them were addressed individually and over time were partially solved with the support and assistance of various academic units. This, in turn, increased the sense of ownership in the system by the academic units.

From the perspective of the service, the intrusions on the time and space of the academic were limited to asking the instructor to present the elements of the lectures clearly. If these objectives were met then it was felt, at the early stages of system redevelopment, that there was no need to ask for substantial pedagogical change. It was expected that consideration of pedagogical and instructional design principles in course development could follow as the instructor became more at ease with the system and was prepared to invoke these processes. It was important that the instructor first feel in control of the preparation and instructional process. It was

[7] Reports from the Department of English Language and Literature (1993) and the Department of History (1993) clearly indicated academic concern with the ad hoc course selection manner and the lack of resources for the academic administration of courses. The increased teaching workload was not overtly addressed. Course delivery was carried on due, in part, to the interest and energies of the participating faculty members. Other criticism of the itv system and its "products" included: the lack of synchronous comment and query interactivity like that which was available to the learner in the traditional classroom; the lack of interactivity with the course and its content i.e. linear presentations versus multi-dimensional and multimedia based courses (Arts Faculty Study Committee on itv, 1996, p. 12-15), that more should be done to utilize the production aspects of the television media or to incorporate a greater range of media (missed opportunities) in course delivery; that the current approval process only addresses the content and academic requirements of the course (Arts Faculty Report, 1996. p. 17) and was inadequate for approval for non-traditional courses. There was no mechanism for requiring that the impact of format change be considered.

also important that television wasn't the driving force necessitating course re-design. Finally it must be felt that enrolments were controlled by the academic unit involved with offering the course on television, and that instructional support (teaching assistants, etc.) be allocated as per the norms of individual academic units. It was intended not to load development demands at the beginning of the change process. However, faculty reported in individual conversations and in meetings held over the first five years that they felt the impact of planning for and managing the larger sections. They also noticed the differing demands from a more diverse group of learners expecting more of them as teachers and that they spent considerably more time in preparing for teaching in this public forum.

In contrast to the concerns about increased loads, even without resources to support extensive developments, instructors (the early adopters) still experimented with course innovation and curricular development, participated in collaborative and/or team teaching and used technology in course delivery. These experiments included: more effective presentations using a variety of illustrative presentation materials including video, stills, and computer based presentations; developing ancillary learning support materials produced as enhanced course packs; promotion of study skills resources; experiments with a range of presentation techniques; involving teaching assistants in different roles in the delivery and management of instruction; making use of voice-mail, live televised phone-in sessions and experiments with computer mediated communication for discussion groups and e-mail communication with and between students and instructors. In some instances, instructors changed elements of course structures to accommodate off-campus student needs equally with those of the on-campus learners. As part of this change

process, instructors took the initiative to redesign six courses for production and packaging as video courses containing mixed lecture, demonstration, and discussion supported by enhanced print materials. Other instructors planned and delivered their classroom based courses with the intention that future iterations would be delivered using the video recordings supported by print materials and interaction with the instructor outside the lecture component.

These changes did not result in widespread innovation beyond the enhancement of classroom centered delivery of courses. Impediments at this time, as noted by reports on itv, were the lack of central initiative and support for non-traditional developments, few resources for experimentation, or the provision of release time to encourage faculty involvement in these activities. Faculty willingness to voluntarily participate in television teaching was rewarded in part through teaching load relief. However, these additional activities were seen as part of normal total workload expectations and as yet are still not reflected any differently in the formal reward structures of the University.

On students

By the 1991/92 academic year of the re-development period, the University was in the midst of significant enrolment growth. Departments were generally using television sections to add places in courses.

Of the 77 courses offered through the service between September, 1989 and September, 1995, in 75% of cases, the television section was offered in addition to the sections offered on campus. In one case, there was the addition of the television section in addition to increased numbers of on-campus sections over a four-year period. In the remaining 25% of cases, there was a loss of from one to three on-

campus sections. This occurred mainly in the Department of Psychology and, to a lesser extent, in English. These two departments provided the majority of the itv offerings and received the majority of television section enrolments. They coincidentally came closest to offering a subject major and thereby a Bachelor's degree on itv.

As the mix of on-campus and itv sections was adjusted, it was anecdotally reported to the itv administrators by Admissions office personnel and members of the student government that students initially reacted negatively. They felt that they were "forced" into television sections rather than have the preference of attending classes on campus. Some University registrarial and admissions staff felt that students were being forced into the television sections to their detriment, that the students were not receiving the full benefit of participating in the University society as learners. This perception was based on the staff's own perceptions and, in part, on their exposure to parents of new students arriving on the campus and finding that their children would be taking some courses through the television delivery service. This was not perceived as "value for the dollar". The discontent appeared to be from a small number of students. An expression of discontent could be considered a natural reaction as the largest number of registrants were in the courses where there was a decline in on-campus sections. Nevertheless, opportunities to express this discontent were provided in a series of surveys, the last occurring in 1996. From the first survey, this discontent, where expressed, was more as concern about a lack of space in on-campus course sections rather than as discontent with having to participate in tv course sections.

Over the period of the first five years between 1989 and 1994, the

perspective of the learner towards the televised course delivery service appeared to change. This included an increased interest in the opportunities provided by the service such as the ability to catch up on or review course materials, the familiar course delivery style and the flexibility of access.

The focus of intent

The focus of the redevelopment and the measures of itv were on changes required within and across the system and how teacher and learner received them. The changes were not designed to impact on the individual teaching attributes and practices of instructors and their courses. Attention was paid to needs of individual courses, at the heed of the instructor, but not so far as to require substantial change in a course prior to it being offered on the television system. In this initial period, concern was focused on the facilitation of delivery of courses and building the "market share" of the operation to a critical mass within the institution. The decision to remain with the "candid classroom model" was supported by the administration of the School of Continuing Education, the University Deans and Senior Executive in that it was the most suitable model for the reconstruction process at this time and the one most easily adopted by teaching faculty. The effective measure of the success of the rebuild and its adoption is the central concern in this presentation.

Indicators of success

It is thought that the process of delivering courses by itv had a neutral, if not a positive affect on learning. Certainly the course televising process provided additional opportunity for participation and access to learning by traditional students and changed how these students viewed the ways to proceed through their educational career.

The business of education, including that sector of the service provided by the universities, is to provide the learner with the opportunity to attain cognitive and intellectual skills, a knowledge base and a sense of well being as part of their learning experience. The question remains how to best provide the means to achieve these goals and how to measure the degree of success of the efforts to do so.

When considering the development of the instructional television service, just what should be considered as a focus for the measures of the success of redevelopment and innovation? Certainly the degree of utilization of media and other technologies in teaching and learning environments, even where they are a significant part of the "new" culture or structure, does not seem to be the sole indicator with which to determine successfully adopted innovation. In addition, the experiences of students in the television courses would appear to be positive, that they are able to successfully attain the same goals they would if they were in the on-campus section and that they are able continue to participate in their programs of study. It does encourage one to consider elements other than media system utilization and individual measures of academic success as the indices of institutionalization. It does require a clear statement of the outcomes and behaviour changes one is anticipating in order to construct the measures to determine whether there has been successful adoption of an innovation.

Breadth of the measure

Where the success or impact of adoption or institutionalization of a system as an innovation is to be observed or evaluated, there is a need for broad measures of the system. These measures should illustrate, as noted by Rogers (1995), that individuals are progressing through the stages of an innovative process and the rate at which they proceed towards adoption or rejection of the innovation. Further to measuring the permanence of the innovation, Curry (1992) proposes the measure of persistence of individual and collective change in behaviour as such a means. Curry also proposes that as members of the organization at different levels adopt behaviour changes, change will be infused into the organization at different levels, in different ways and with different outcomes. Curry (1992) describes institutionalization of an innovation as likely to occur at the structural and policy levels, and through incorporation of the innovation into the institutional culture. When reviewed across these levels, a broader understanding of the innovation may be obtained. The measures may be qualitative or quantitative in nature (Stake, 1995; Wilson et al, 1970).

To gain an understanding of the growth and of change the character of the Instructional Television service and its impact within the University, a selection of measures was taken. Quantitative measures which mark development and utilization of the service include: the demographics of the instructors and of the student cohort over the life of the service; growth of the service as a proportion of the institution; measures of alternative access methods used by students; growth of Summer Session enrolments within a limited service offering; and a selection of measures taken as part of a questionnaire to students about service, course, instructor and

facility quality.

Qualitative measures, in part, include a review of indicators such as instructor practice and opinion as a measure of values congruence (Chapter Two, p. 39 herein), as a measure of perception of institutional culture (Chapter Two, p. 28), as a measure of understanding of the effect of marginalization on alternative mode development (Chapter Two, p. 31), understanding institutional policies and practices (Chapter Two, p. 29), of the role of the faculty member in promoting innovation (Chapter Two, p. 38); and of the economic times.

Data collection

The data were collected from the central records of the University, and through surveys and focus groups, review of records and notes of informal meetings with instructors and through conversations with students who were served by the system and who worked for the service.

The range of years covered in certain tables is greater than that of others. Where the data were stored centrally as a matter of institutional interest and practice, a greater range of years of data were available for review. In the instance where the data was specific to the Instructional Television operation, certain data were serendipitously identified during the re-development period as possibly necessary in future years and collection was begun at that time. For example, to understand growth patterns of the service, it was necessary to design tools to track student enrolments for information about on-campus versus off-campus growth in itv registrations. In other instances, it was necessary to design instruments for the collection of data such as itv faculty and student demographics or to mine centrally stored data found in University course registration booklets or contained in the student records database. For instance, data mining was used to determine the

number of on-campus course sections gained and lost due to the use of the television system to deliver courses.

Data sets

The following tables contain quantitative data about the service providing a measure of the range, the scale and outcomes of the operation over the years to be discussed:

- Table 1 - Profile of **itv** Faculty, 1979 – 1995;
- Table 2 - Profile of **itv** Students, 1985 – 1995;
- Table 3 - **itv** Enrolments As a Percentage of University Total Enrolments;
- Table 4 - **itv** Summer Session Enrolments, 1990 – 1995;
- Table 5 - Method of Access.

Three of the following four sets of data are qualitative. The remaining one is quantitative but is intended to provide a further qualitative measure of service as indicated by the students. The review of these exercises is provided in discussion form and will be linked to the quantitative measures of the service. These last measures include:

- Faculty focus group results;
- Informal faculty meetings - discussions summary;
- Student focus group results;
- Carleton University Survey of **itv** Students 1995/96 results.

Quantitative measures

Findings

*Profile of **itv** faculty.* Table 1 provides a breakdown of the characteristics of faculty associated with television teaching in 1979, 1981, 1985, and 1990 - 1995. These years and periods were selected to provide an indication of growth of faculty

involvement in the decade prior to the re-development period and for the second through sixth year of operation of the re-development period. The characteristics of gender, age, teaching experience and rank seniority provide an illustration of the makeup of the television teaching cohort. For the period 1990/91 to 1994/95, the relatively constant median age, age range, and median seniority would indicate a slowly increasing number of younger faculty involved with the televised teaching process as the number of courses offered increased. However, this reflects the slowly changing median age of the faculty cohort within the University, not a change in practice of appointing younger and possibly innovative faculty. Faculty rank clearly indicates continued assignment of senior faculty members as television teachers.

The Course Load heading illustrates itv course sections assigned as part of the instructors' normal teaching loads. What has not been reconstructed is the degree of the individual instructor's workload reduction as a result of receiving these larger-than-usual course section assignments. But an average "normal" on-campus load is 2.0 to 3.0 credits or full course equivalent. The Principle Subjects by Faculty line provides an illustration of the increase in the diversity of subjects taught through the system. These data also clearly indicate which faculties considered use of the service in their best interest. This change is most significant in the period where the service grew between 1990 and 1995. It is noted by Johnson (1984) that academic affiliation correlates to levels of participation. Applied and professional experience external to the University seemed to indicated a greater tendency to support departures from traditional modes i.e., in engineering and business. In the itv experience however, arts and humanities principal subject areas, followed most closely by social science subject areas, to a much lessor degree by science and, almost not at all by engineering, provided the majority of the programming in the

Table 1

Profile of itv Faculty, 1979 - 1995

Characteristics		Academic Year 79/80	81/82	85/86	90/91	91/92	92/93	93/94	94/95
Gender									
Faculty	M	12	5	5	17	13	22	22	29
	F	-	-	-	2	2	5	3	6
Sessionals	M	-	2	1	2	6	8	7	9
	F	-	1	-	1	-	1	1	1
Age (median)		43	50	44	51	51	50	51	52
Age Range		30-51	39-52	42-50	30-70	31-63	32-64	33-65	30-66
Seniority (median) (Yrs. of Teaching)		13	14	16	20	20	18	19	20
Rank	Full Prof.	7	3	-	10	9	11	11	14
	Assoc. Prof.	2	2	5	6	3	9	9	13
	Assist Prof.	3	-	-	1	1	2	2	3
	Lecturer	-	-	-	-	-	-	-	1
	Instructor	-	-	-	2	2	5	3	4
	Sessional	-	3	1	3	6	9	8	10
Course Load (per instructor)	0.5	5	3	1	7	6	6	5	8
	1.0	7	5	5	14	14	30	27	35
	1.5	-	-	-	-	-	-	-	2
	2.0	-	-	-	1	1	-	1	-
Principle Subjects									
- Arts/Humanities		N/A	4	3	7	6	7	7	6
- Social Science		N/A	3	2	6	6	6	6	8
- Science		N/A	-	-	2	3	3	3	4
- Engineering		N/A	-	1	2	1	1	1	1

initial years and following the beginning of the redevelopment period. This is the inverse experience to that noted by Johnson (1984) but reflects the demand experience at Carleton University to this time.

As the number of courses offered through the service increased through this period, there was a concurrent increase in the number of professors. This increase was heavily represented by males at the Associate Professor level rather than in the assignment of female teaching staff or more junior male staff. Also, the increase in the number of male sessional instructors was greater during this time than the increase in female tenured faculty involved in television teaching reflecting changes in the faculty cohort in the University.

Profile of itv students. Table 2 reflects the profile of students registering in Instructional Television courses. This cohort has changed considerably since inception of the service. For this study, three academic years, 1986/87, 1990/91, and 1995/96, were chosen to illustrate the changes in the cohorts.

Table 2 lists data by gender, age category and year of study/Special student category. The samples comprised enrolled concurrent registrants (combined on-campus and video section registrations) and off-campus itv registrants (video section only registrations) in each of these years.

The gender mix rebalanced across the years 1986/87 to 1995/96, resulting in an absolute and relative increase in participation by males to bring their participation in the television courses to 43% of the cohort. The male/female participation rates remained stable in the second half of the decade. In absolute terms, the participation by males in the video courses increased during this time by a factor of 15, exceeding the general growth of the service (10 fold). In the age categories, the group of

Table 2

*Profile of **itv** Students, 1986/87, 1990/91, 1995/96*

	1986/87	1990/91	1995/96	Change by factor of...across years
N = Students	542	2087	5800	10.7
Sex Male	170 (31.4%)	896 (42.9%)	2498 (43.1%)	14.7
Female	372 (68.6%)	1191 (57.1%)	3302 (56.9%)	8.9
Age Category				
< 25 Years	243 (44.8%)	1413 (67.7%)	4281 (73.8%)	17.6
25 - 35 Yrs.	97 (17.9%)	355 (17.0%)	1018 (17.6%)	10.5
36 - 55 Yrs.	156 (28.8%)	265 (12.7%)	441 (7.6%)	2.8
> 55 Years	46 (8.5%)	54 (2.6%)	60 (1.0%)	1.3
Year of Degree Study				
Q Year	1 (0.2%)	5 (0.2%)	2 (0%)	
1st Yr.	57 (10.5%)	393 (18.8%)	1274 (22.0%)	22.4
2nd Yr.	112 (20.7%)	528 (25.3%)	1778 (30.7%)	15.9
3rd Yr.	129 (23.8%)	596 (28.6%)	1470 (25.4%)	11.4
4th Yr.	18 (3.3%)	126 (6.0%)	428 (7.4%)	23.8
Special	224 (41.3%)	430 (20.6%)	840 (14.5%)	3.8

students 25 years to >55 years were displaced from being equal in size to the group <24 years by the <24 year old group over the decade. The younger group was now 3 times larger. While the older age category grew by a real factor of two and a half times, it was reduced from over one third of **itv** students in 1986/87 to less than one tenth in 1995/96. It should be noted that the 25 to 35 year old group increased by a factor of eleven and remained a constant constituent group at 17% of the **itv** cohort between 1986/87 and 1995/96. At the same time, the <24 year old group grew by a real factor of 18 times from 1986/87 to 1995/96 and increased by 29% to become

74% of the itv student cohort. This is the group seen as the central client of the University and actively recruited during this time. The audience entering itv courses as Special students increased by a factor of four in terms of real numbers between 1986/87 and 1995/96. However by 1995/96, the percentage of Special students in itv course sections had declined across the years to 14.5% of the complement. In the case of the University, this same population had declined in this period from 18% to just 12% . This would suggest that itv was doing a better job of attracting this non-traditional population than the University as a whole – an audience for whom itv was initially introduced.

itv enrolments as a proportion of University enrolments. Table 3 presents enrolments in courses offered by the service as a percentage of total university enrolments. As discussed in Chapter Three, where television course sections were offered in place of or in addition to existing on-campus sections, enrolments levels were maintained or increased illustrating both an interest by students in the opportunity presented by this alternative course delivery method and a willingness to participate in the televised courses. This is borne out in the results of the 1995/96 Carleton University Survey of itv Students discussed later in this chapter.

The most obvious change in the scale of the service (itv) is in the number of registrants participating in the television courses over the seven year period shown here. This was affected by the increase in the number and type of courses delivered annually through the system and by the decision of certain academic units to focus on televised course delivery. As the number of television sections increased, so did the associated itv enrolments as a percentage of University totals. However, the rate of increase for enrolments was greater than the rate of increase in the number of

Table 3

itv Enrolments as a Percentage of University Total Enrolments

Year	Total University	Total itv	itv Total of Univ.	itv FCE[2] Courses
1989/90	66812	1038[1]	1.5%	15
1990/91	68451	1419[1]	2.0%	19
1991/92	69520	3102[1]	4.5%	19
1992/93	73246	6939[1]	9.0%	33.5
1993/94	76624	7942	10.3%	32.5
1994/95	75000	9277	12.4%	42
1995/96	68537	8435	12.3%	42.5

Note.

1. These are estimates approximating Full Course Equivalent Snap enrolments as itv enrolments were not included in University Databooks until 1993/94.
2. Full Course Equivalent offerings delivered in the Fall and Winter terms of the listed academic year.

course sections and may be attributed, in part, to the higher or non-existent enrolment ceilings in the televised sections. Between the academic years 1989/90 and 1995/96, the ratio of the net increase in course sections was 300% while enrolments increased at a rate of 800%. During this time the greatest increase for the University peaked at 13% and declined to stabilize at 3%.

The data in Table 3 are shown as Full Course Equivalent (FCE) enrolments[9] or Snap Date enrolments for the University and itv. Snap date enrolments are data used in the preparation of submissions to the Ontario Provincial Ministry of Education and Training for annual grant financing. They are used here as they

represent a central source of enrolment data.[10] These data are not used in the planning and management of the **itv** system and do not appear in all the data sets in this presentation .

Summer session enrolments. The data in Table 4 further demonstrate the interest in the service held by the students. The growth of the service during the summer session, with courses available only as televised courses rather than as a live on-campus section with its parallel television section as operated in fall/winter

Table 4

Summer Session Enrolments, 1990 - 1995

Year	Enrolment (not FCE)	Course Sections	Year	Enrolment (not FCE)	Course Sections
1990	32[1]	1	1993	1208[1]	9
1991	100[1]	2	1994	1031[1]	9
1992	774[1]	6	1995	1886[1]	12

Note.

1. These data represent initial course enrolments recorded at the end of the registration periods as retrieved from the central University student records database. They are not credit weighted or Full Course Equivalent registrations.

sessions, occurred at a much higher rate than the growth of the fall/winter sessions during the 1989 to 1995 period. The ratio of growth in course sections during this time is 12:1 and ratio of growth in enrolment is almost 60:1. This portion of the service represents an opportunity for the University to benefit on resources already capitalised.

[9] FCE - Full Course Equivalent or one student enrolled in one 26 week university course

Method of access. Between 1989 to 1995, as the service matured, the ability to provide access to geographically diverse students improved dramatically. Table 5 illustrates the increase in the use of this alternative mode of access or distance

Table 5

Method of Access

Categories of initial student enrolments (not FCE) within **itv** course sections

Academic Year	F, F/W & W (course enrolment[1])	% On-campus (concurrent)	% Off-campus (Metropolitan Cable Dist.)	% TTY (Tapes-to-You Service Dist.)
1989/90	1411	- [2]	-	1.7% (24)
1990/91	2536	-	-	7.5% (189)
1991/92	4429	-	-	-
1992/93	10633	79.6% (8464)	16.8% (1786)	3.5% (372)
1993/94	11968	83.4% (9976)	10.2% (1221)	6.4% (771)
1994/95	14283	81.4% (11630)	12.5% (1781)	6.1% (872)
1995/96	14534	80.0% (11655)	11.6% (1657)	8.4% (1222)

Notes. 1. Total non-FCE enrolments for Fall and Winter terms.

2. Dashes indicate that data showing the division of enrolments as noted above were not available until creation of software in 1992 to allow **itv** staff to draw down the numbers on a consistent basis. The data shown for 1989, 1990 and 1991 were gathered serendipitously. Data are now being captured at three points in the academic term - end of course registration, snap date and as of the end of last day of classes. This occurs for Fall, Winter and each of the Summer terms.

education course delivery by students of the University. There are portions of this table which are incomplete as the practice of data collection developed only as the need arose during the early years of re-development. The increase in use of the

[10] Source: University Databooks where available

service is most dramatic between the academic years 1992/93 and 1995/96. Of interest, the percentage of the total number of students registered for **itv** courses and living away from the metropolitan Ottawa area was greater in 1990/91 than in 1994/95. However, the enrolment in televised courses by concurrent students[11] increased dramatically in 1992/93 reducing the proportion of Tapes-to-You (TTY) students as a part of the whole. Nevertheless, the real number of TTY students, while a smaller percentage of the cohort for the next three years, was larger than that in 1990/91 and continued to increase becoming a steadily larger portion of the **itv** cohort growing over 50 fold in absolute terms during this time.

Qualitative measures

Following six years of development, growth and informal analysis, it was determined that an in-depth review of the service was necessary and should be conducted during the 1995/96 academic year. The objective was to gather sufficient data to determine the future direction and role of the service within the University and the degree of satisfaction within the community about the service as it had evolved.

Focus groups

As part of the on-going review of the service, a faculty focus group of 15 was organized to include both members of faculty who had taught "on television" and those who hadn't. Coincidentally, a number of informal meetings for **itv** faculty (average attendance was 10 members) had occurred up to this time to discuss issues considered relevant to them. More were planned independent of the formal focus group activity. Two focus groups were also organized with students (each group to consist of 10 members stratified to represent the student cohort) from the

[11] Those students registered for classes on campus concurrent with registrations for **itv** course sections.

concurrent and off-campus itv student population.

Questions were designed for each of the groups to provide a framework for the discussions. The faculty group would have two questions posed. Preparation for the student focus groups raised six specific questions to be asked. The student questions are included in the review of the findings.

Faculty focus group results. The questions intended to frame the faculty discussion were:

- What current and emerging environmental factors are threats and/or opportunities for itv as it operates today?
- How should itv change in recognition of these factors?

However, during the meeting, faculty were determined to move away from the guided discussion to a more free-form discussion of points as they were raised in the group. Review of the outcome of the faculty focus group can be grouped into two areas; questions raised about itv within the University and about the broader world of teaching and learning and what form the next steps in development might take. The first part of the discussion is grouped into five areas:

- What is itv?

The discussion opened with questions about the service, its potential and how it fit the mission of the University. As an integral part of the University, was the itv service associated with or perceived to be offering courses of lower academic quality due to the televising process. If so, how could this be remedied

Other issues included questions about the cost/benefit ratios of itv including whether the service was a "cash cow" for the University. Questioning the means to resource itv adequately led to a short discussion of alternative vision of funding models to provide resources and opportunities for new developments. Funding

associated with costs and benefits evolved into a discussion of distance and traditional education and the perceived costs and benefits of these practices. However, this was not a definitive discussion.

- What do we (focus group participants) know about currently?

The group expressed a concern that the needs of their students as learners must remain foremost. There was a lack of financial resources allocated to the academic and technological development of alternative programming. There was also a lack of recognition for any innovative initiative shown by individuals, which did little to encourage innovation. However, the intellectual and technical resources did exist on the Carleton University campus to design and implement changes in pedagogy from course redesign and development of evaluation methods amongst others. The University must be prepared to meet the competition coming into "our marketplace". This might be accomplished by turning **itv** and other mode courses into a marketable product. In spite of the concerns raised through the inventory of understanding, the general feeling was that much could be done, and personnel were willing to undertake change, if the support of the institution were forthcoming.

- What are the "design" questions to be considered?

There was consensus on the need for an administrative/academic structure, vested with sufficient status and linkage to the Carleton academic community, to manage the planning, development and utilization of alternative or mediated learning activities including **itv**. It was thought that this structure should retain the ability to encourage "micro control" (that of the department and faculty member) of the design and function of alternatives to meet academic needs. This initiative must be supported by institutional commitment to alternative methods of course delivery.

- What further knowledge must be developed for success?

The University community must become more involved in determining the role for **itv** and through this initiative become generally more knowledgeable about alternative or mixed media approaches to teaching and learning. There was a need to address the differences between courses and disciplines when considering technological applications. In addition, it was important to have established "quality" criteria in order to measure the product and ensure that the effort put into the development of alternatives had an acknowledged worth. Collaboration with other institutions to jointly develop and own programs or to purchase programs from third party sources must be considered.

- What are the issues we must deal with in the immediate and longer term to ensure survival of the service?

While the marketplace was demanding knowledge and not credentials, the institution was charged with maintaining academic credibility and the accreditation process. How could these divergent views be reconciled? What role could **itv** play in reconciling these needs?

Most members of the group felt that the convergence of mainstream teaching/learning activities with distance education will demand that a greater focus be placed on distance education and alternatives. The University should be planning a "Canadian" vs. Carleton only curriculum (i.e. a curriculum which is both accessible and may be sold nationally either to students or institutions). Carleton needed to formally recognize the role to be played by distance education in the coming decade.

It was also considered by faculty in this group that it was necessary to determine a vision for the institution and to focus on the development of the University's strengths. Their vision would include greater integration of alternatives such as **itv** into the mission of the University.

At a later point in the discussion, the group was asked to provide their ideas on the "next steps" which should be taken. The comments were condensed into the following:

- Establish a coordinating/facilitating forum to address how to support faculty and students in learning through alternative modes;
- Create focus groups to obtain input from **itv** students;
- Commitment from the University to alternative delivery systems must be sought;
- Promote revenue generating potential of alternative modes of course delivery including **itv**;
- Include "survival" concerns - those of the institution and the individuals therein.

Informal faculty meetings - discussions summary. Independent of the formal faculty focus group described above, a series of meetings was sponsored by the Instructional Television unit to promote discussion of issues of concern to faculty members teaching televised courses. The invitation to attend was open in the hope that members across a range of disciplines would attend.

The structure of the meetings was such that the agenda was suggested by the television unit but shelved if other items of general interest were proposed and accepted by the attending faculty. The objective was to provide opportunity for faculty to identify **itv** related issues within their particular domains and to determine how these issues might be constructively considered. It was hoped that this interdisciplinary group would foster a sense of the larger community among the television teaching faculty. This, in turn, could encourage the transfer of ideas on course development and management and direct how faculty would like to see more formal teaching and learning support developed at the University.

Only two meetings were held in each fall term in 1995 and 1996. These

meetings raised a number of topics and the results of these discussions are grouped into three perspectives discussing the impacts of Instructional Television on faculty - as teachers, as course and materials developers, and as employees.

As teachers, they identified issues relating to teaching and workload and the impact of television teaching. Teaching issues included: loss of anonymity; the liability of the professors and their guests while dealing with controversial issues in this public forum; knowing what message design works to motivate learners; dealing with both adult and adolescent learners in the same course; managing interactivity concerns across a range of disciplines and course levels; understanding and dealing with learner attrition; and maintenance of academic quality in their courses. It was expressed that all of the concerns above affected academic quality. Yet no definition of academic quality was asked for or offered.

Teaching on television raised concerns about teaching at a distance including the lack of a distance education department to provide formal support and encourage institutional acknowledgement of this alternative environment. The faculty members were concerned that they did not have a sense of prescription as to how to best teach through the television medium. Other issues included: what was the potential for class size in this virtual environment; what were the most effective methods to use to communicate with students; how secure were the current examinations procedures for all students in the television sections either on-campus or at a distance?

As course developers, faculty discussed cost in terms of time necessary for research, design and the production of the "product". For example, preparation for televised teaching demanded two to three times as much effort. These issues led to the topic of release time to participate in these activities and how this might

determined. What were the issues associated with transforming existing materials and courses for distance teaching? Exactly what transformation was necessary was not clear in many minds. This did result in a number of faculty members seeking advice and assistance for materials design, production and use.

If the University were to consider marketing its "product" internationally, how were cross-cultural issues to be addressed and should they be considered at this time? Even without the issue of marketing internationally, content design would be affected by class size, class demographics and culture, special needs of the changing learner, and the class entry grade range - the entry skills of the students. All of these issues, in part affected by the issue of teaching on television, were of concern to the faculty as developers. At no time was there any thought of abandoning television teaching as it was seen as the door to greater personal, professional and institutional opportunity.

The faculty as employees brought a different perspective to the table. The issues centred on workload increase due to television teaching and how this was to be credited to the faculty member in terms of teaching assignment. Intellectual property ownership, the use of recorded or packaged courses within the institution and for external sale, the marketing of these courses and cycling of earnings from both internal use and external sale into support and development activities were raised as both an opportunity and as a possible barrier to collaborative development within the institution. Recognition of the benefits to be "earned" through the use of packaged courseware which could accrue to the institution was accorded the cautionary concern about cohort reduction: faculty felt they could be replaced by packaged courses managed by sessionals or tutors.

Given the issues raised by the professoriate concerning itv and its role in the

institution, there remained a strong positive feeling about the process of televising courses. There was also a strong opinion expressed that more communication to senior management was necessary to redress deficiencies.

Student focus group results. The student focus groups of ten members each were randomly selected from a representative sample of the **itv** population of students on- and off-campus. One group met face to face and the other met through a moderated audio teleconference. Each group was presented with the set of questions to initiate discussion and asked whether the presence of an **itv** administrator would inhibit frank discussion. The administrator was present to respond to student concerns and questions in a factual manner. The administrator did not participate in the discussions. Neither group objected to the administrator's presence.

The results of the discussions can be summarized into six area questions:

- What is really liked about the service?

Review of both groups found that the convenience, the ability to access post-secondary learning in a flexible manner, the degree of student control over the pacing of the learning process were common, well-liked elements.

- What is really not liked about the service?

The concerns of the two groups diverged here. The on-campus students focused on the tape review service, its integral part of their learning activities and the difficulties they encountered trying to obtain copies due to the high demand. The off-campus group noted the difficulty in getting outline and supplemental course materials in a timely manner through the mail. This impacted how they prepared for assignments and exams: it was not an insurmountable problem but remained a concern.

The groups' opinions converged on other matters. They all asked for a greater

range of senior courses to be available through itv to allow them to complete their programs more quickly. They expressed some concerns about recorded courses and their perceived "lack of reality and credibility". Yet further comment supported the possible use of commercial courses, or complete in-house courses, packaged with all materials included for the cost of tuition. The groups were divided on the matter of more extensive course materials being available either in print and/or on-line (on the usefulness of the extended content, not on the media). Some would welcome the "advanced organizer" concept, which would allow them to prepare more fully for classes to come; others thought it not useful.

- As itv students, do they feel a part of the classes "from a distance"?

Socialization was not an issue for the mature students both on and off campus or those with campus experience. Younger students noted concern about isolation from on-campus courses but it was felt they could overcome this factor in favour of other benefits associated with the service. All participants felt securely connected with the University. However, the relationship with the instructor (real and perceived) was important. Those in the off-campus group commented on "missing the opportunity for discussion with the instructor as well as with TAs and other students after class". The use of technology would offset some of this sense of disconnectedness, but likely would not eliminate it without more extensive moderation or facilitation. There was concern expressed about technology and technological illiteracy erecting barriers. These were not considered insurmountable but must be noted and accommodated.

- Is getting an education through itv acceptable?

The on-campus group commented on the lack of interaction (in ability to ask questions in real time), that the process "doesn't encourage development of thinking

skills", that they were seeking more rigorous evaluation procedures in their courses (all courses) beyond that provided by multiple choice exams. It was not clear that the delivery process caused this concern rather that it was a characteristic of large courses. The off-campus group was generally satisfied with the televised course delivery process, but felt that it was important that they do part of their degrees on campus. They would entertain courses presented through other technologies - as long as the technology didn't "get in the way".

- How could courses be made more accessible?

This was answered in reference to accessing courses necessary for their programs. All students were asking for more senior and "high demand" courses including ones normally offered on-campus in the evening.

- How might "value be added" to the itv process?

A catalogue of suggestions was received including: requests for more courses; development of packaged courses; more CHAT[12] lines to ease access to e-mail, the Internet, and for enhanced newsgroup activity; provision of on-line course content; add promo materials about on-campus activities to the materials provided to the "distance" learners to increase their sense of connectedness to the institution; reduce itv course fees; improve the "artificiality" of the pre-recorded courses; and enhance communication of all kinds.

Strong comments were made by the on-campus students about their desire for enhanced skill development as part of their university education. Many of them were leaving or were prepared to leave the University to attend a college program to gain "marketable skills". This deficiency was described as relating to their university education in general and was not specifically related to the process of televised

course delivery or the effectiveness of the televised courses.

This series of student focus groups fed into the development of the Carleton University Survey of **itv** Students 1995/96. The results of the focus groups were found to be supported by the responses to the survey.

*Carleton University Survey of **itv** Students, 1995/96*

The questionnaire (Appendix A) was designed to secure a measure of learner satisfaction with the service and their courses as presented at that time. The questionnaire asked why the respondent took a television course; how they accessed their course; their perception of the quality of the course including the suitability of their instructor's skills for teaching on television, the student's general likes and dislikes and a review of a range of attributes from academic rigor of the course to the of voice mail for communicating with the instructor. This last topic, communication, was the subject of several questions where the opportunities for and the quality of student communication with the instructor and the teaching assistant were assessed.

By 1993, students were making extensive use of University-provided computing facilities. To determine what students had available to them and used in their studies, a series of general questions about electronically mediated forms of communication were added to the questionnaire. The University, at this time, was also developing and testing a universal computer communications system for use by faculty and students. Questions about this service, the Carleton Hotline for Administration and Teaching (CHAT) were also included in the **itv** Questionnaire. Many of the television teachers used CHAT course discussion groups and the e-mail service as part of their television course activities.

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[12] CHAT – Carleton Hotline for Administratin and Teaching – the Internet service connection provided by

The closing section of the questionnaire collected demographic information about the respondents.

Results of the questionnaire

The questionnaire was mailed to a stratified and proportioned random sample[13] of 1000 **itv** students. The initial mailing was sent one month prior to final examinations and after the date for withdrawal with any tuition refund (March 1996) to minimise decay of the sample. The initial mailing was followed up with three reminders and resulted in a 51.4% return rate. The sample selection stratification was designed to match the percentages of students taking **itv** courses by one of the three access methods. Students were either registered concurrently in on-campus and television section courses (71.0%), were registered in one or more television courses only and accessed them through the metropolitan cable service (18.4%) or were registered in one or more television courses only and accessed them through the Tapes-to-You service of **itv** (10.6%).

The data from the Carleton University Survey of **itv** Students (1995/96) revealed that of the cohort which was now less than 24 years, roughly one third lived in the family home, and one third worked part-time. Only about 7% worked full-time. Of the total cohort, almost 40% worked part-time and half as many (21%) worked full-time embracing **itv** for the independence and flexibility they required to support themselves in their educational careers.

Respondents were asked about their reasons for choosing an **itv** course. Resolution of scheduling conflicts was rank ordered first of eight possible reasons

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Carleton University to all students introduced as of 1994/95.

[13] The sample was stratified using the three principle components of the population; those studying concurrently in a combination of on-campus and television courses, those studying via television only (via the dedicated cable television channel) and who have the option to come to campus but have chosen not to, and those who are studying through the TTY service option and cannot come to campus.

with almost 35% of the sample rating it as highly important. This reason, identified as relevant by the largest number of respondents, clearly indicates that the availability of alternatives ranked as important with students wanting access to courses, which were suitable or necessary to their programs.

For almost one third of the sample, the reason that **itv** course selection was necessary was of lack of space in on-campus sections. They rated this reason as highly important. This reason, identified as relevant by the second largest number of respondents, clearly indicates the selection of a course for an academic program as important regardless of mode of access.

Demands of a full-time job precluding participation on campus was selected by almost 20 % of the sample as a highly important reason. The third largest group of respondents identified it as relevant and while it clearly was relevant to a smaller sector of the student population, it was very important within this population.

In the responses (relevant to 98% of sample) to the question about what a person would do if a particular course was not available on **itv**, the same course on campus would be the first option for 29%, another Carleton on-campus course would be the first option for 27% and another **itv** course at Carleton would be the first option chosen by 24% of the respondents.

The question concerning the need for **itv** instructors to possess different teaching skills from those required for traditional forms of teaching received attention from 97% of the respondents with 52% of this group stating no special skills were necessary and 44% feeling that they were necessary. Review of the comments associated with this question revealed that the expectation that instructors should have special skills was related to interpersonal and presentation skills such as those, which might be used in face-to-face presentations. The comments did not target the

medium of television or the technologies used by the instructors specifically. "Better visuals" or "better use of overheads" were comments found in only 10% to 15% of the remarks. Comments such as "better use of camera" (not indicating which of three cameras in the classrooms) were found, again in only 10% to 15% of the comments. The remaining 85% to 90% of the comments related directly to interpersonal and presentation skills. These findings are replicated in later questions about "...the things that make your favorite itv course enjoyable?" and "...the things that make your least favorite itv course unenjoyable?"

In terms of aspects liked most about studying via itv, students identified the flexibility and control of access, and the use of the course materials, particularly the video recordings for review and clarification. Of the aspects liked the least, the main points were: the ability to procrastinate about viewing course lectures; the lack of synchronous interaction with the class and instructor for asking questions and discussing points of concern; finding distance communication difficult; delays in receiving materials and return of marked assignments; and having to self-motivate to keep up with the course.

The most enjoyable aspects of favorite itv courses were effective, organized and lively presentations given by "good enthusiastic teachers". Use of media, humor and personalization of examples were the favored means of presentation used by instructors. The unenjoyable aspects of these courses appeared to be teachers communicating a lack of interest (in either their subject material or their students).

I include here a note about the inattention paid by some instructors to responding to telephone calls and other communication from students. These comments were made by a small percentage of the sample and it cannot be determined whether this is a concern of a few students in all courses or a larger

number of students in a few courses.

I digress in the review of the televised course service to include a review of data collected regarding the use of computer-based associated services and systems at Carleton University. These services were used in a number of **itv** courses where they enhanced the growing alternative mode course delivery or access environment of which **itv** is a part.

Questions were asked about general computer use and access to technology by students and particularly about CHAT, a University sponsored cost-free access for students on and off the campus to e-mail services, newsgroups, and electronic learning resources.

The responses of the sample (n=514) to general computing use questions indicated a large number (75%) owned a computer, but only a third of this group owned a modem (24%). A majority was comfortable using a computer with 44% indicating a high level of comfort. Of those using word processing, half indicated a high level of comfort. In a similar manner, responses concerning the use of e-mail for communication between students and with instructors showed 43% had a high level of comfort. A smaller number of the sample were comfortable using e-mail for discussion groups with 21% at a high level of comfort, and a quarter of the respondents had Internet connect software and used it with a high level of comfort.

Questions concerning use of the World Wide Web for courses earned responses from a majority of the sample. Of the sample, 17% had WWW browsers installed on their PC as compared to 10% who use software to connect to the University's systems. 17% of the sample had used WWW in any of their courses.

A review of the use made of the Carleton Hotline for Administration and Teaching (CHAT) revealed that this new service had attracted 44% of the sample to

the service at least once by the time this questionnaire was administered. When asked about any use of CHAT in courses, only 42% of the sample responded to this question. Of this group, 81% had used CHAT in one to three courses (40% - one course; 25% - two courses; 16% - three courses). When asked about current use, 17% of the sample indicated that they were doing so.

Narrative comments from respondents pertaining to the above questions from those who had never used or were not currently using CHAT, indicated non-use was mostly due to lack of relevance to their general university related activities, a lack of personal interest or there was no course-related need promoted by the instructor.

A series of questions about the impact CHAT had on learners using this facility as a part of their academic activities replicated findings concerning the use of Instructional Television. The television service provided a greater sense of control over access, pacing or rate of viewing, review and clarification of content and opinion provided by the instructor, and review of supplemental materials included in the course lectures.

In a complementary manner, for those who used the CHAT facility, there was increased opportunity for greater asynchronous participation by the learner off-campus, and increased opportunity for the on-campus student in addition to their available face-to-face participation. It was indicated that CHAT discussion groups were less stressful to deal with than face-to-face discussion groups. Traditional face-to-face groups, however, built a better rapport between members of the groups and were more stimulating. "Stimulating" was not defined in the responses. CHAT, on the other hand, allowed for more thoughtful and personal expression of ideas proposed at the learner's pace.

Given the stratified and proportioned random sample selected and the rate of

return for this survey, I feel confident that these survey results may be generalized to the population.

The results of the faculty and student focus groups, the informal faculty discussions, and the Survey of itv Students reported in this study are combined with the data describing growth and change within the instructional Television system. Together, these data appear to support the finding that both students and faculty find satisfaction with this particular alternative course delivery process and the services associated with it. This leads one to believe that further development of alternative mode courses would be acceptable to a larger segment of both faculty and student populations and by the management bodies of the institution.

Chapter Five

Discussion

The purpose of this study was threefold: to investigate whether instructional practice within the institution had been impacted by the televised course delivery process; whether the service as an innovation had been institutionalized; and whether it is possible to predict whether this service will remain a part of the solution which will enable Carleton University to become a surviving "new" institution.

In determining whether the purposes of the study were achieved, we must review measures of service activity and associated developments as noted in the quantitative and qualitative accounts and measures presented in Chapters Three and Four against the criteria provided in the literature as profiled in Chapter Two.

What conditions would have to be met in order for the service to reach its goals? At the beginning of the redevelopment process, the potential for growth was unknown. The needs identified for the service were to bring coherence and change to the design and management of the service and to expand it in ways to suit the needs of instructors, learners, academic departments and program delivery. The identification of these needs was confounded by the fact that the target audience was not as clearly defined as it had been at the conception of the service eleven years earlier. Additionally, it came to be understood that while the academic programming delivered through the televised service was criticized as being developed in an ad hoc manner, it was shown that the character of, and limits to growth, was in the hands of the academic community and not the service (Chapter Three, p. 62 herein).

The redevelopment needs of the service were to be met through a series of

objectives. A first objective was to meet the needs of the student more effectively by offering an increased variety of courses enhanced by services, which would support students as they accessed their courses regardless of their personal or geographic situations. A second objective, focussed on instructional activities, was to provide an environment which would encourage faculty to become involved in course design, development and presentation, encouraging them to involve strategies and technologies hitherto not utilized. The continued participation of faculty was hoped for, but not considered a given at the time redevelopment was initiated. A third objective was to develop a coherent administrative structure for the service to ensure that it could successfully function within the academic and political environments of the University. Coherent academic programming was not foremost on the short term development agenda of the instructional television unit.

Attaining the first two objectives would effect change in instructional practice on the campus. Reaching the third would support the service in its bid to be institutionalized with an assist from willing academic departments.

In this context, the managers of the service functioned as change agents linking the adapting faculty to resources and to end-users. In addition, their efforts also resulted in the provision of greatly enhanced facilities and services for all participants (Chapter Three, p. 51-53).

The participation of the instructors and academic units in the delivery of courses through the service and the willingness of the learners to register in and complete the televised courses as an alternative to taking other courses on campus, signify adoption of change in practice to varying degrees. What change has resulted from these liaisons for both the individual participants and for the institution?

As noted in Chapter Two, Keegan (1990) considered that conventional education is at one end of the spectrum and distance education at the other. As Keegan defines each of non-traditional education, indirect or mediated education, open learning and the elements of educational technology, they may be fitted into either the "conventional" or "distance" approaches to instruction or within a range of converged approaches across the middle of the spectrum.

The evolution of technology has influenced current thinking about both conventional and distance education. Technological infusion into curriculum is described as providing opportunity to develop a more flexible means of transmitting instruction, or providing greater access to more potential means of learning for the student. The marriage of new technologies and curriculum are thought to place control of the learning process, in part, in the hands of the learner with the instructor opting to act as a facilitator rather than controlling or directing access to knowledge. This is the ideal to which educators strive in the interest of building a learner-centered educational environment in an expanded array of possible approaches.

What certainly will continue to take place in this changing environment, is a convergence or collision of learner needs and desires with the real and potential ability (or inability) of the public educational system to meet these needs (Haughey, 1989; Moran, 1993). Pressure on the public system to meet more diverse demands from learners will likely encourage careful niche selection by the public institutions. However, it is expected that this will result in both enhanced and reduced opportunities for learners as evidenced by improved and focused programs along with increased tuition and periodic academic program reductions.

Additionally, as the practices of distance education converge with those of

conventional education, a slow acknowledgment of the worth and place of distance education in the world of conventional education is occurring so as to disrupt the traditions of the educational cloister. These do not occur as astounding changes. Rather, they are slow incremental changes, which have directly impacted the development of the instructional television system. These changes have both encouraged development of the new and exciting possibilities associated with process and technology and they have caused intellectual and practical resources necessary for further development to be withheld. The holdback is due to the uncertain understanding of different and changing processes and values and the ensuing resistance which develops (Chapter Two, p. 32).

Convergence is driven not only by increasing external pressures from competing providers (traditional and non-traditional), but also by the operational and fiscal opportunities that are of interest to the institution in meeting the perceived external threat. As within the Instructional Television environment, the growing interest in enhancement to, and change in, teaching and learning expressed by faculty in focus groups and meetings, the desire for alternate avenues to enable academic program completion as recorded in student focus group notes, and the responses in student questionnaires all point to a healthy, historical and continuing convergence.

A result of this increasing convergence is an enhanced liaison between learners and curriculum. The increased degree of opportunity of access and variety of courses available to the student allows for a better fit of student interest and the curriculum. This is matched by the benefits accruing to the institution in terms of reputation, revenue and potential intellectual growth through the increased innovative

activity of its faculty.

Thus the growth of the Instructional Television service across disciplines has played such a role in elevating awareness of alternative delivery methods and their impact on conventional educational practices. However, can the changes in practice caused by the use of the service as presented in this study be considered innovative as defined by Rogers (1995)?

To faculty, access to the service was innovative as it facilitated their entry into a novel experience in teaching and learning. It enabled them to reach a diverse group of students in a more comprehensive manner without significant initial change in teaching strategy and course design. Students saw use of itv by the institution as experimental initially and ultimately as innovative. This cohort, much changed from the original audience, adopted the flexible alternative as a normal part of their academic careers. Academic units adopted the service as an innovative means of maintaining diverse course offerings in financially difficult times, and for increasing enrolments in popular and required courses. Nevertheless, at the institutional level, use of the service was addressed more as a means to a particular fiscal end than to be promoted as an innovation in instructional practice (Copley, 1995).

If the quantitative measures of the scale of the service are taken as the sole indicators of success or failure, it would appear that success at meeting the first objective for the service has been clearly and successfully attained (Chapter Four, Tables 3, 4 & 5). The significance of this success is in the measure of participation by learners[13] within the limits of growth provided by the academic community and evidenced in the continued but uneven representation of disciplines through the

[13] By the 1995/96 academic year, 12% of the University's total fall/winter course enrolments were in the

means provided by the service. The second objective was partially met as participation of academic units in televised course delivery (Chapter Four, Table 1). However, while the scale of involvement of the academic units and its professors has increased, has the institutionalization of the process of alternative course delivery as represented by this television service occurred?

Here the measure is more complex for the relative certainty contained in the quantitative measures can quickly become the relative uncertainty of qualitative measures clouded by the perception and consideration of those involved in the implementation and evaluation processes (Chapter Two, p. 29 herein). To confirm adoption of an innovation, a measure of behavioural change as described by Curry (1992) and Rogers (1995) is necessary and should be taken at the individual level and aggregated to reflect a trend or measure of acceptance at the institutional level.

Student measures

Each of the categories of data representing demographics of faculty and students, including Special student enrolments, shows changes which may be tied to shifts in other institutional priorities not specifically aimed at the itv system. These shifts combined with the increased interest in life-long and flexible learning practices shown by the student clientele, all affected the development of itv. The large increase in the number of students participating in televised courses which occurred in 1990[14] was triggered in part by the increase in the number and variety of courses available in that year. The solicitation for courses was deliberate - a strategy derived in the itv unit. The course selection and decisions taken by academic units to better

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televised course sections. Televised course sections were 0.03% of the total for the University.

[14] 55% increase in non-FCE course enrolments from 1989 to 1990. 27% increase in number of course sections offered (Table 5).

utilize video course sections in the light of reduced faculty numbers was also a necessary factor in this adoption by the student cohort.

1990/91 was also the first academic year of the re-development period in which new management opportunities and administrative practices were in place at the beginning of the academic session. Concurrent with increased publicity about television course activity, the Instructional Television unit was able to function in a more coherent manner with increasing control over design and development of services and support of teaching and learning. As presented by Drucker (1995) in his theory of time lag and innovation, "what has already happened that will create the future" (p. 40); the itv administration promoted and built on the history and success of the service.

By the end of the re-development period, a significant proportion of the student body expected to take one or more courses through the television service either by choice or, in more limited instances, as the only means of access to a particular offering. The expectations and requests from learners that an increased variety of courses across all years of academic programs be offered in this manner indicated willingness, if not a preference, by a significant number of students to participate in itv. The acceptance of alternative mode delivery indicates a clear change in the perceptions, needs and behaviours of the learners on and off campus.

As students on and off campus were asked to evaluate their experiences with the television courses, it was expected that their perceptions would be tempered by their previous or concurrent face-to-face course experiences. Yet there was little indication that, by this time, the students had not accepted the service as part of the normal access modalities. This was supported by surface indicators including:

- a continued increase in registrations in Summer session courses (Table 4);
- continued high levels of enrolments in **itv** course sections - willingness to access courses this way (Table 3);
- and a general expression from the students that more courses delivered through **itv** would be welcome.

The majority of the television student cohort was predominantly <24 years old with 70% studying concurrently. It was found that students within this group adopted and used the facility in ways not originally expected by: increasingly embracing summer session registrations as off-campus students; by overloading the tape review service (more than 100,000 tapes circulated in an academic session to both video and on-campus section students); by increasingly taking more than one tv course per session (causing concern in some academic circles); and enroling as both a concurrent and Tapes-to-You student[15]. Each of these areas of activity shows support for and ready adoption of the modality by the student cohort.

Faculty measures

Where student adoption as illustrated through course registrations is a bellwether indicator, the faculty role is a pivotal factor in the successful development and adoption of an innovation.

Review of the television instructor cohort shows that attrition in this group is relatively low. Where an instructor did not continue teaching on television, it was due mostly to the course being discontinued, the instructor being on sabbatical, retired, ill, deceased, or having left the University. What was not reflected in the data were the energies brought to television teaching by the majority of the faculty involved. As

[15] Informal investigation determined that this mix accounted for about 10% of the TTY cohort.

described in Chapter Three (p. 63), individual faculty brought extensive innovative design and renovation activity to a number of courses. This energy and concern is noted, in part, in the review of the discussions in the faculty focus group and in the notes of the informal faculty meetings. The teachers' interest in their students was foremost when expressing concern about how the service might develop to give both faculty and the institution advantage in a changing world. Discussion about alternatives coupled with the demonstrated interest by individuals in course innovation possibilities signaled adoption of an innovation-ready mindset. Buy-in as described by Brew (1982) was vital to the success of the innovation process as change is implemented to the greater degree by practitioners and not by administrators. Yet participation in this system is voluntary with rewards coming to faculty as mostly intrinsic rather than concrete compensation or as career advancement for being innovative.

In terms of Rogers (1995) descriptions of adopters, the majority of faculty, through their decision to participate in the televised course delivery process, can be described as having reached the innovation decision and implementation stages for an early adopter group (Chapter Two, p. 20). A number of this group has passed this point and confirmed their decision to continue with the innovation.

When reviewing the profile of the members of the television teaching cohort, there is a predominance of senior rank faculty, secure in position and confident in teaching, who are participating in this very public forum providing open examples for assessment by their peers. These persons are the principle motivators promoting an expanded service and are supported by the itv service in their efforts. The momentum and success of this group, as it is maintained, serves to illustrate the

effectiveness of its members as opinion leaders or exemplars for their peers, most of whom may be categorized as early or in some cases, late majority adopters. Opposition to the service for example, manifest in criticism of the lack of production values in the televised courses, came from non-involved faculty and from members of the Board of Governors. Where this could constitute a serious impediment to the growth of the service, it was best overcome by the clear declaration from the opinion leaders that the service was a course delivery service rather than attempting to be a television service.

The senior rank of the majority of the teaching cohort assigned to the television courses may indicate a concern on the part of academic management about the importance of ensuring that the instructional quality of the courses will positively represent the departments and disciplines involved in this public arena. It may also indicate a greater comfort and willingness on the part of the senior faculty to work in this public arena. They feel established and do not need to meet the pressures of advancement criteria to the same degree as do younger faculty. They are also more comfortable in dealing with controversial material in a public forum.

It may be argued that the itv system was successful in reaching its objectives, as measured in terms of growth and utilization to the end of the academic session 1995/96. This occurred due to a bottom-up involvement and sense of ownership on the part of faculty and department heads. Certain decisions about utilization of the service including the removal of enrolment limits in video sections had been made by more senior academic administrators. Concurrently, grass roots involvement in the implementation including decisions about the number and type of courses to be offered reduced the impact of any one-way communication. The

utilization of the service was very much "bottom up" from the perspective of the instructors and their departmental chairs. In certain departments, it was seen as a means of maintaining course sections and, indeed, course offerings within their disciplines, more effectively assigning instructional staff, and effecting an increase in enrolments. All these, so it was thought, were to the credit of the department as it was seen as an effective and efficient means of maintaining the revenue base of the academic department.

The labeling of **itv** as a success results from a number of factors: positive faculty perception of control over pedagogical activity within **itv** courses and of concurrence with accepted practice; increasing faculty and administrative familiarity with the process; clearly observable implications of participation in the process; and enhanced communication with "management". However, the sense of the degree of ownership of the process is still divided between the participating members of the community. At this time, it is pertinent to say, there has been no formal institutionalization reflected as a change in policy concerning how or why a unit should use the service to meet operational needs. As the service is available and able to provide support to academic programming, **itv**'s role is considered by the academic unit and recruited if deemed beneficial, initially by instructor and department chair.

Institutional measures

The assessment of behavioural change must be considered at both the micro and macro level to determine that change is relevant and sustained or to be institutionalized beyond the interests and energies of individual innovators. At the macro level, acceptance of the service and the change it has initiated may be

evidenced through the innovative service receiving support financially, and acknowledged in general practice and in policy within the institution. Curry (1992) describes this in terms of three levels of institutionalization, which may occur: structural, procedural and incorporation (of the practice within cultural/social values). These are elaborated below.

There is strong evidence that the **itv** service has greatly encouraged deeper consideration of the course development and delivery process by faculty and administration at Carleton University. Evidence of structural change in the institution includes:

- regular central provision of financing for the operation over a number of years;
- notation of **itv** activities and services in the principal institutional publications and academic schedules;
- increased reliance on the service providing support for the successful operation of several academic programs;

Procedural changes include:

- Information about the service as a part of student orientation;
- statement of policy that students may expect to take a portion of their academic program as televised courses as an alternative to conventional access;
- transcript notations for credit from these courses is identical to any course taken on campus (i.e., no differentiation);

Changes categorized as cultural incorporation include:

- a continued willingness to participate by faculty;
- a continued demand for and expectation by students that the service will be available;

- rapid growth in the summer session driven by the demand for courses to be taken at a distance;
- that it is considered possible for any instructor to participate in the televised course process;
- departmental chairs ask specific faculty to teach courses for the department on itv.

Two questions must be considered: to what degree these changes have occurred within a diverse institution; and are the level of adoption across this diversity sufficient to be categorized as true institutionalization? If it is significant to only a portion of the population, then the service and its inherent processes and benefits remain marginalized, not truly institutionalized and in continuing jeopardy. Yet in an institution such as a university, diversity and not homogeneity is the norm. The degree to which a single service, system or technology will meet the needs of the whole community or social system is difficult to determine.

From the perspective of Carleton University, acknowledgment of the service was formally included in central planning activities as a separate line item budget category upgraded from an informal sub-category of Continuing Education (Hooper, 1975). Also statements regarding the role of the service described as providing a "legitimatized" alternative access to courses for students on campus were explicit. These changes occurred by the fifth year of the redevelopment period. Prior to this, resources, including staff and budgets as tangible acknowledgments of support, were allocated on a year by year basis with adjustments made for changes in scale of operation. Funding was assigned from the financial resources of the School of Continuing Edcuational in competition with the needs of other activities of the

School.

Where the on-campus "mass education" function of Instructional Television received central acknowledgment, the distance education portion of the operation remained marginalized. It was expected to perform at a cost recovery level or even to generate a profit from its operations (Copley, 1995).

However, the growth of the off-campus or distance education student body indicates a willingness on the part of students to adopt the practice of taking television based courses at a distance. The acceptance of this portion of the business by the institution on a cost recovery or on a profit basis is a shift towards acceptance of distance education as a suitable practice within the University. Faculty discussion and acceptance of the growing presence of distance education as promoted by the television courses is evidenced by their demonstrated interest in other media for synchronous and asynchronous delivery of courses. This is evidence of acceptance of and, more importantly, a shift in participation behaviour by this cohort.

While there is participation by a number of the faculty teaching television courses and expressed support for the service from others not directly involved, there remains a skepticism on the part of faculty about the intent of the institution to fully acknowledge and support alternatives such as the television operation and distance education. This is manifest in the concerns expressed about intellectual property ownership, about workload imposed by the conditions of teaching on television, about the lack of support for development of mediated courses and about the impacts of continued convergence of distance education practice with that of conventional education. These are a few of the issues which faculty felt needed

addressing (Chapter Four, p. 80-86). Nevertheless, these concerns, where directed at the service, did not deter any of the members of the cohort from continuing their involvement with the service.

On the institutional side, the revamped and resized service is accepted for its role of providing both the sole offering of courses and additional sections which wouldn't otherwise be available to students in the University. The service is providing an alternative to losing academic programming through a shortage of faculty. It is providing this alternative in a financially attractive manner.

There was willingness on the part of senior management in the early stages to approve the redevelopment of the Instructional Television service. In this, there was knowledge of the potential of the operation but not a full understanding of, or direction provided as to how the service was to fit in to the University system. It was still considered a marginal service and of non-threatening consequence.

Currently, with decisions to be made about the future of technologically mediated teaching and learning, which will include Instructional Television, there is at Carleton:

- still no central turnkey instructional design and development service mandated to work with professors to produce courseware for alternative mode or mixed media delivery;
- a marginal increase in the acceptance of need among the academic community for alternative mode delivery regardless of methodology[16] ;
- a slowly increasing institutional commitment to capitalization of technology for alternative mode course delivery which will see more rapid approval if tied to

[16] Marginal when considering the total institutional academic population.

revenue generation or if the course is to be offered as a campus based course;

- a growing demand by students for alternative mode courses to allow them to continue programs in times of change in their personal situations;
- a dramatic change in information technology and potential applications allowing non-prescriptive, flexible uses to enhance course presentation, communication and research activities by teachers and learners.

Conclusions

The purpose of this study was three-fold: to investigate whether instructional practice within the institution had been impacted by the televised course delivery process; whether the service as an innovation had been institutionalized; and whether it is possible to predict whether this service will remain a part of the solution which will enable Carleton University to become a surviving "new" institution.

On the first purpose, the impact on instructional practice is well illustrated by the development and use of a practical service encouraging involvement in course design and modification. The service has impacted instructional practice across sectors of the institution. However, adoption of the use of the **itv** service as it is currently constituted has varied across the academic units of the institution. Of the fifty or so academic departments of the University, only a few, if any, have never participated in an electronically mediated alternative. Involvement by members of academic units is affected by individual drive to participate in an innovative activity combined with the top-down directive from a departmental chair or curriculum committee of the need to participate in the innovative activity for survival or growth purposes. The effort required of academics, allowed the opportunity to develop and participate in this process, will differ from individual to individual due to varied levels

of technological and pedagogical literacy and their disciplinary demands. This is characteristic of the diversity of need across disciplines within a tertiary educational institution which demands individual design and application of educational technology as defined by Boyd (Chapter One, p. 6).

This diversity may well appear to confound the second purpose – has **itv**, as an innovative practice, perceived to have been institutionalized. In this, what is institutionalized is not the particular design or technological development, rather it is the will to utilize a tool at the moment or the will to adopt an innovative practice. To further support this shift in behaviour, the innovative process will be allowed to evolve as the shape of the tool, the literacy of the implementer or the need of the user changes over time. In this, the innovation must be a dynamic, yet fiscally responsible, component within the social system and responding to the larger needs of the system. Conversely, the social system must be prepared to support the evolution of the innovative energies that will exist within its boundaries.

On the third purpose of this study, Instructional Television can play a role in the development of future or "new" platforms in the delivery of courses in a "new" University. However, how strategies must be designed for the implementation of innovation is central to the success of its continuing involvement.

In the Instructional Television environment, control of academic development was divested to the perimeter (to the faculty members of individual academic units). Additionally, support was vested centrally in the form of primarily delivery services. While this practice supports acceptance of innovative practice, the credibility of the developing or facilitating service must be bolstered in addition to involving the users in the development process. Institutionalzation requires a broad base of support

within the institution and there must be guidance for the growth provided within the development envelope.

For the integration of innovative tools, systems and services, the supporting system must be constructed with an open architecture where infrastructure cannot impact or impede innovation or change - in the form of the individual or unit level digression from the planned development and utilization. System bias must be monitored. This is the role of the facilitation service acting either as change agent or on behalf of a change agent. This role is crucial to the success of an innovation and its integration into a larger social system.

This study has attempted to gather indices to provide an image of a system in development, of a system in use, of a system in transition and a system with the potential for further growth. It is also an image of a system, which as an innovation, will support alternatives beyond its current scope. Its success will be dependent upon whether users indicate that they will accept their needs being met through the application of current and yet to be developed technologies and teaching/learning processes.

It may be argued that the growth of the service used for the delivery of courses from a greater range of disciplines indicates acceptance of the process from a greater portion of the University. The growth of registrations, both those in required courses and those in optional courses in times of expansion may be an indicator of acceptance of the service. Registrations in the television courses have held constant as a percentage of overall University registration through times of general reduction.

In the environment existing over the past seven years, it was important to find a means of encouraging development and acceptance of a broader more central

alternative to supplement the traditional offerings of the institution. On this, Webster (1989) states, "Tuckman and Chang (1988) have made the point that consensus on goals of the university can be expected to be greater when the goals are expressed at a generic level, and differences emerge when one begins to operationalize what those goals actually mean" (p. 20). In the case of Instructional Television, the differences evolved through the individuality of the instructors, their disciplines and course requirements in certain cases, and this provided the impetus to find a means of effectively presenting an increasing variety of discipline specific content to a wide range of learners. It was also necessary to secure a means of involving a much larger number of faculty in course presentation to develop a critical mass of offerings to enhance the acceptability of an alternative mode process of course delivery and access.

Indeed, how can the development of the system and its evolution accommodate further development and growth to platforms not associated with televised delivery? On the one hand, the development of the television based system presents opportunity to involve academics and students in "opaque" alternative modes of interaction with course presentation and development. On the other, as currently designed and offered to the University's academic community, it provides the stepping stones to different platforms, and to the redevelopment of courses in ways which may be more suitable and necessary for pedagogical reasons. This will come with the growing confidence and enthusiasm of the faculty. The particular mix of technologies, which should be considered for pedagogical and fiscal purposes, is for future discussion. In the current economic and academic environment, one of cutback and refocussing, the fiscal side of the argument will carry extra weight for some time to

come. Certainly the re-development of the post-secondary system will be dependent upon treating the administrative and operational side of the house in a more financially accountable manner. It is coincidentally important to be constantly aware of the impact that the fiscal arguments will have on the development and continuance of academic programs, on the retention of academic personnel and on the maintenance of the traditional role of the university which, this author feels, will have ample currency in western society for some time to come.

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Appendix A

Carleton University Survey of itv Students, 1995-96

Carleton University Survey of itv Students

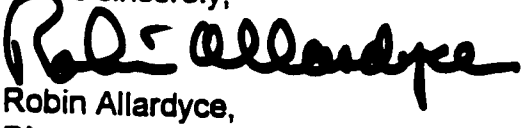
Dear itv Student:

Carleton University is committed to providing you with the best instructional television service we can design. Our ability to provide better instruction and services for students depends on our learning more about your assessment of the strengths and weaknesses of televised courses and their related services.

This questionnaire covers a lot of ground but we ask that you take the time to answer it because there is a lot of controversy over the use of itv to manage enrolment during a financially difficult time for the University. Student views on the use of itv need to be heard in this debate. On many issues you are the only one who can provide us with the information on how itv "works" or doesn't "work". Your responses will be kept completely confidential. There is a label on the questionnaire containing basic information currently on your student record. This will allow us to save space on the questionnaire by not including questions on information we already have. Please make any necessary corrections to the information on the label but do not remove it. Also, on the inside of this cover page there are notes about the questionnaire which you should read carefully.

We are sending this questionnaire to you in the hopes that it will reach you well before the examination period in mid-April. In order to avoid having the questionnaire interfere with your end-of-term assigments and studying for final exams, we ask that you answer and return the completed questionnaire in the postage pre-paid enclosed envelope as soon as it reaches you. It should take only one-half to three-quarters of an hour of your time. Thank you in advance, and I hope you find the questionnaire interesting to answer.

Yours sincerely,



Robin Allardyce,
Director, Instructional Television

Some Notes About the Questionnaire:

1. This survey is **confidential** but it is not anonymous. Your name, student number and degree program information are preprinted on the questionnaire because we need to combine the information you provide on this questionnaire with course, program and registration information held on your official student record in order to perform our assessment of our courses and services. Also, as the covering letter states, the use of your student number allows us limit the number of questions we must include on the questionnaire.

   The detailed information you provide on this questionnaire will be seen only by researchers and will not be available to anyone else, except in a summary form which does not identify individuals.

2. The questionnaire asks a very broad range of questions in order to collect information necessary to an analysis of our course and program planning. It should take you roughly half an hour to three quarters of an hour to fill in the questionnaire.

3. Specific directions are given for completing many of the questions in the questionnaire. Where no directions are given, please circle the number or letter of the most appropriate response, such as in the example below:

   Example:

   What is your sex?

   1 Male

   (2) Female

Section A: Becoming an itv Student:

A1. There can be many reasons for choosing to enrol in an itv course. Please rate each of the following in terms of its importance to you by circling the number on the scale that corresponds to your assessment:

0=Not relevant to my circumstances
1=Not important
2=Somewhat important
3=Important
4=Quite Important
5=Highly important

0 1 2 3 4 5	itv course(s) allow me to continue my studies at Carleton even though I live too far away to commute
0 1 2 3 4 5	itv course(s) allow me to study while working full-time at a job that involves shift work, a lot of travel, or some other feature that makes on-campus study impossible for me
0 1 2 3 4 5	Registering in itv section(s) was necessary because I couldn't get into the on-campus course sections
0 1 2 3 4 5	Registering in an itv section(s) allow me to overcome scheduling conflicts with other courses
0 1 2 3 4 5	itv course(s) allow me to maintain a full-course load and work part-time
0 1 2 3 4 5	itv course(s) allow me to "test the waters" to see if university education is for me before I consider applying for admission to degree studies.
0 1 2 3 4 5	itv course(s) give me the opportunity to take an interesting course
0 1 2 3 4 5	itv course(s) allow to meet my degree requirements more efficiently than through on-campus study

A2. What was the most important reason for your choosing to enrol in one or more itv courses?

_____

A3. Which of the following methods did you use to register in your itv course(s)?

1 Touchtone registration system 2 Telephone (voice) 3 In person

A4. Did you experience any problems in registering for your course(s)?

1 No 2 Yes, I experienced the following problems:

. . . . . _____

A5. Which of the following statements best describes your situation **where you currently live** with respect to the equipment required to study via instructional television?

1 I do not own (or have ready access to) a television

2 I own (or have ready access to) a television but there is no cable hook-up

3 I own (or have ready access to) a television with cable hook-up but no convertor to allow me to receive an itv channel and no video-cassette recorder to allow me to view tapes

4 I own (or have ready access to) a television with cable hook-up but no convertor to allow me to receive an itv channel but I have a video-cassette recorder to allow me to view the tapes

5 I own (or have ready access to) a television with cable hook-up and a convertor that allows me to receives an itv channel but I do not have a video-cassette recorder to view tapes

6 I own (or have ready access to) a television with cable hook-up and a convertor that allows me to receives an itv channel and I have a video-cassette recorder to view tapes

A6. If your itv course(s) had not been offered on itv, which of the following would you have done? (Circle only one)

1 Taken the same course on campus at Carleton

2 Taken a different course/courses on campus at Carleton

3 Taken other itv course(s)

4 Taken course(s) offered by another university

5 Taken course(s) at a community college or CEGEP

6 Not taken any course(s)

7 Other —> *please specify:*

_____

Section B: Viewing itv Course Lectures

There are a variety of ways in which itv students can view and re-view course lectures. The next series of questions focuses on the ways in which you have chosen to view and re-view your lectures.

B1. What methods of **initially viewing** your itv course lectures do you use? Please estimate your frequency of use by estimating a rough percentage of use associated with each of the methods below. ***Answer only for initially viewing your lectures.***

Method of Initial Viewing:	**Percentage.**
Cable television in the Ottawa region on Channel 53	_____ %
Smiths Falls Shaw Communications, Channel 10	_____ %
Brockville Cable, Channel 10	_____ %
Cable television on Belleville Cablevue (Qunité)	_____ %
Cobourg Northumberland Cable, Channel 10	_____ %
Tapes-to-You courier service to addressed outside Ottawa	_____ %
Tapes-to-You service through a community lending centre	_____ %
Viewing/tape loan service offered in the MacOdrum Library	_____ %
Total of methods	100 %

B2. Please rate the quality of the service for each of the most frequently and second most frequently used methods for initially viewing your lecture below:

	Poor					**Excellent**
Most frequently used method	1	2	3	4	5	6
Second most frequently used method	1	2	3	4	5	6

Please enter below any comments on the service or suggestions for improvements

_____

_____

B3. Typically, how do you initially view your lectures

1 As they are broadcast, with little or no review later

2 As they are broadcast, with some review later

3 Taped lectures in a bunch, one or two at a time

4 Taped lectures in a bunch, three or four at a time

5 Taped lectures in a bunch, more than four at a time

B4. Does your pattern of viewing course lectures tend to be different across your itv courses?

1 Not applicable, I am only registered in one itv course

2 No, my pattern of viewing tends to be the same for all my itv courses

3 Yes, my pattern of viewing differs across my itv courses —> *please specify:*

_____

B5. What methods of **re-viewing** your itv course lectures do you use? Please estimate your frequency of use by estimating a rough percentage of use associated with each of the methods below. ***Answer only for re-viewing your lectures***

Method of Re-viewing Lectures:	**Percentage**
My own tape from the Channel 53 broadcast	_____ %
My own tape from the Smiths Falls, Channel 10 broadcast	_____ %
My own tape from the Brockville Cable, Channel 10 broadcast	_____ %
My own tape from the Belleville Cablevue (Qunité) broadcast	_____ %
My own tape from the Cobourg, Channel 10 broadcast	_____ %
Tapes-to-You courier service to an address outside Ottawa	_____ %
Tapes-to-You service through a community lending centre	_____ %
Viewing/tape loan service offered in the MacOdrum Library	_____ %
Total of methods	100 %

Note: If you used the Tapes-to-You or the MacOdrum Library service for re-viewing purposes, answer Question B6. If you have not used these services for re-viewing purposes, skip to Question C1.

B6. Please rate the quality of the service for purposes of re-viewing for each of the following:

	Poor				Excellent	NA
Tapes-to-You courier service	1	2	3	4	5	6
Tapes-to-You at lending centre	1	2	3	4	5	6
Tape loan from MacOdrum Library	1	2	3	4	5	6
Tape viewing at MacOdrum Library	1	2	3	4	5	6

Please enter below any comments on the service or suggestions for improvements

---

Section C: Organization and Distribution of Course Materials

If you are enrolled in more than one itv course please answer in overall terms.

C1. Based on your experiences to date in itv courses, please rate the quality of service for the organization and distribution of course materials:

	Poor				Excellent	N/A
Timely provision of course outlines	1	2	3	4	5	6
Availability of required textbooks	1	2	3	4	5	6
Procedures for submission of assignments	1	2	3	4	5	6
Response to requests for information on assignments	1	2	3	4	5	6
Return of assignments	1	2	3	4	5	6
Scheduling of exams	1	2	3	4	5	6
Counter service at itv Materials Distribution Center	1	2	3	4	5	6

C2. Please assess each of the following individuals/agencies in terms of their role in the organization and provision of course materials:

	Poor				Excellent	N/A
Instructor	1	2	3	4	5	6
Teaching Assistant(s)	1	2	3	4	5	6
itv Materials Distribution Center	1	2	3	4	5	6
MacOdrum Library	1	2	3	4	5	6

Section D: Your Assessment of the Academic Quality of itv Courses

D1. (a) Based on your experiences with itv to date, do you think that instructors need to possess different teaching skills from those required for traditional forms of instruction?

1 No, no special skills are required

2 Yes, the following skills are required for itv instruction more than they are for traditional forms of instruction:

_____

_____

D1. (b) Based on your experiences with itv to date, do you think that teaching assistants need to possess different teaching skills from those required for traditional instruction?

1 No, no special skills are required

2 Yes, the following skills are required for teaching assistants assigned to itv instruction more than they are for traditional forms of instruction:

_____

_____

D2. Have there been course meetings held on campus as part of your itv course(s)?

1 No, my itv course(s) didn't include any on-campus meetings -> ***Skip to Question D6.***

2 Yes, my itv course(s) did include on-campus meetings which were:

1 Voluntary

2 Compulsory

3 Voluntary in some, compulsory in others

D3 (a) How many on-campus meetings were scheduled for your itv course(s)?

_____ for _____ course(s)

D3. (b) How many on-campus meetings have you been able to attend? _____

D4. If you have been unable to attend some of the on-campus meetings which of the following best describes the reason for your inability to attend?

1 I live too far away from campus to attend such meetings
2 The meetings were scheduled at times when it was impossible for me to attend because of other family or work-related responsibilities
3 The meetings were scheduled at times that conflicted with other courses I am taking
4 My overall workload made it difficult for me to attend the on-campus meetings
5 I do not have a reliable means of transportation to ensure that I can get to the meetings
6 Other --> *please specify:* _____

D5. In your opinion, do the on-campus meetings serve a useful academic purpose?

1 I cannot say since I was unable to attend any of the on-campus meetings
2 Yes, the on-campus meetings are academically useful in the following ways:

_____

3 No, I did not find the on-campus meetings academically useful.

D6. In overall terms, what aspect of studying via itv do you like the most?

_____

D7. In overall terms, what aspect of studying via itv do you like least?

_____

D8. Which of the following categories best describes your use of itv:

1 On-campus student registered in at least one itv course --> ***Skip to Question D10***
2 Student in the local viewing region studying off-campus exclusively through a "V" section registration (i.e., on cable)
3 Student living outside the viewing region relying on the Tapes-to-You service

D9. Some students who are currently studying off-campus have suggested that the establishment of a "Study Buddy" system would help both academically and to reduce the sense of isolation felt by many students. Are you interested in such a system?

1 Yes 2 No

D10. Based on your experiences to date in itv courses, please rate each of the following aspects of your course(s): *If you are enrolled in more than one itv course, please answer in overall terms.*

	Poor				**Excellent**	**N/A**
Academic rigour of your course(s)	1	2	3	4	5	6
Coverage of information on course outline	1	2	3	4	5	6
Presentation of course material	1	2	3	4	5	6
Promotion of effective class discussions	1	2	3	4	5	6
Questioning techniques used by your instructor(s)	1	2	3	4	5	6
Use of in-class media (videotapes, overheads,etc)	1	2	3	4	5	6
Use of guests to present course material	1	2	3	4	5	6
Use of teaching assistants (TA)	1	2	3	4	5	6
Use of CHAT for class communication	1	2	3	4	5	6
Accessibility of instructor	1	2	3	4	5	6
Accessibility of TAs	1	2	3	4	5	6
Availability of reference material	1	2	3	4	5	6
Use of voice mail for contacting the instructor	1	2	3	4	5	6

D11. a Most students have favourite courses and dreaded courses. How would you describe the things that make your favourite itv course enjoyable? ***If you have only ever enrolled in one itv course, skip to Question D12.***

D11. b How would you describe the things that make your least favourite itv course unenjoyable?

D12. Based on your experience in your course assignments to date, how would you rate yourself in terms of the following:

	Very Weak				Very Strong	N/A
Overall writing skills	1	2	3	4	5	6
Reading comprehension (ability to handle complex written material)	1	2	3	4	5	6
Critical thinking (analysis of material rather than simple recall of concepts and facts)	1	2	3	4	5	6
Ability to organize time and material effectively to prepare for and successfully complete assignments and/or tests and exams	1	2	3	4	5	6
Numeracy and statistical skills	1	2	3	4	5	6
General presentational skills	1	2	3	4	5	6
Seminar presentational skills	1	2	3	4	5	6
Laboratory skills	1	2	3	4	5	6
Computing skills	1	2	3	4	5	6
Class participation	1	2	3	4	5	6
Performance on examinations	1	2	3	4	5	6
Research skills (effective use of Library and other research resources)	1	2	3	4	5	6
Skill in essay design and writing	1	2	3	4	5	6
Skill in handling theoretical (rather than factual) course content	1	2	3	4	5	6

Section E: Communication with Instructors and Teaching Assistants

E1. Have you contacted your itv instructor(s) to discuss course-related questions/issues?

1 No ---> Have you not contacted your itv instructor(s) because of some difficulty you face in doing so?

1 No

2 Yes ---> Please describe any difficulties: _____

_____

2 Yes ---> Approximately how many times have you contacted your itv instructor(s) using the following methods? (*Please answer for each method)*

___ In-person meeting during office hours

___ Telephone discussion during office hours

___ On-campus meetings scheduled for the course

___ Email messages (via CHAT or otherwise)

___ Voice mail service provided for itv courses

If you have not contacted your instructor OR you have contacted your itv instructor(s) exclusively through in-person meetings during office hours, skip to Question E3.

E2. For any of the methods other than the traditional in-person office hour meeting, please indicate your degree of satisfaction with this method using the scale provided. *If you have not used the method of contact, circle "6" (Not applicable)*

	Very Dissatisfied				**Very Satisfied**	**N/A**
Telephone discussion during office hours	1	2	3	4	5	6
On-campus meetings scheduled for the course	1	2	3	4	5	6
Email messages (via CHAT or otherwise)	1	2	3	4	5	6
Voice mail service provided for itv courses	1	2	3	4	5	6

If you are dissatisfied with any of the means of contacting your itv instructor(s) listed above in Question E1 please describe below the reasons for your dissatisfaction:

_____

_____

E3. Have you contacted your itv instructor's teaching assistant(s) to discuss course-related questions/issues?

1 Not applicable, there are no teaching assistants in my itv course(s)

2 No ---> Have you not contacted the teaching assistant(s) because of some difficulty you face in doing so?

1 No

2 Yes ---> Please describe any difficulties: _____

_____

2 Yes ---> Approximately how many times have you contacted the teaching assistant(s) using the following methods? (*Please answer for each method)*

___ In-person meeting during the instructor's office hours on campus

___ Telephone discussion during instructor's office hours

___ On-campus meetings scheduled for the course

___ Email messages (via CHAT or otherwise)

___ Voice mail service provided for itv courses

If you have not contacted teaching assistants OR you have contacted your teaching assistants solely through in-person meetings during office hours, skip to Question F1.

E4. For any of the methods other than the traditional in-person office hour meeting, please indicate your degree of satisfaction with this method using the scale provided. *If you have not used the method of contact, circle "6" (Not applicable)*

	Very Dissatisfied				**Very Satisfied**	**N/A**
Telephone discussion during office hours	1	2	3	4	5	6
On-campus meetings scheduled for the course	1	2	3	4	5	6
Email messages (via CHAT or otherwise)	1	2	3	4	5	6
Voice mail service provided for itv courses	1	2	3	4	5	6

If you are dissatisfied with any of the means of contacting teaching assistant(s) listed above in Question E3, please describe below the reasons for your dissatisfaction:

_____

Section F: Your Use of Computers and Electronically Mediated Forms of Communication

F1. Students vary in terms of their "comfort level" using computers and electronically mediated forms of communication such as e-mail and audio teleconferencing. Using the scale provided below, please describe your **"comfort levels"** for each of the listed items below. If you have no experience with an item, circle "6" "Not Applicable"

	Low				High	N/A
Using a personal computer in any way	1	2	3	4	5	6
Using a word processor for papers	1	2	3	4	5	6
Using spreadsheets/statistical software	1	2	3	4	5	6
Using e-mail to contact instructor/fellow student	1	2	3	4	5	6
Using e-mail to participate in discussion groups	1	2	3	4	5	6
Using software to connect with the Internet	1	2	3	4	5	6

F2. Do you have your own telephone line or have access to a telephone line at home that can be used for e-mail and online information searches via a modem?

1 Yes 2 No

F3. Do you own a personal computer?

1 No

2 Yes ---> Is your computer equipped with a modem? 1 Yes 2 No

F4. a Do you have communications software that allows you to connect to the Internet or the World Wide Web either through Carleton University's CHAT or UNIX systems or independently?

1 No

2 Yes ---> What type of communications software do you have on your pc?

1 A World Wide Web browser (such as Netscape, Microsoft Internet Explorer, Mosaic)

2 A national online service (such as Compuserve, America On Line, etc.)

3 A local service provider (such as Sympatico, Internet Access, Istar Internet, etc.)

4 Software (such as Procomm or VIPCU) to connect to the University's systems

F4. b Do you use the World Wide Web for any of your courses?

1 No 2 Yes ---> How do you use it? _____

Section G: The Use of CHAT and Other Forms of Mediated Communication for itv Courses

Carleton University Computing Services provides students with access to the Carleton Hotline for Administration and Teaching (CHAT) as a means of easy communication with instructors, teaching assistants, fellow students, and in some instances, students in similar course at other universities and colleges. Students use CHAT in a variety of ways: to contact their professor, to participate in discussion groups, to retrieve course information, to search for course related information via the Internet, Word Wide Web, etc.

G1. Have you ever used CHAT in any of your courses (in any academic year)?

1 No, I have never used CHAT in any of my courses —> Please indicate below the main reason why you have not used CHAT ***and then skip to Question G5.***

_____

2 Yes —> In how many courses have you used CHAT? _____

G2. Are you currently making use of CHAT in your itv course(s)?

1 No, I am not using CHAT in my itv course(s) —> Please indicate below the main reason why you are not using CHAT in your itv course(s) ***and then skip to Question G4.***

_____

2 Yes, I am making use of CHAT in my itv course(s) —> Please indicate how you typically use CHAT (circle as many as apply)

1 To contact my instructor
2 To contact teaching assistants
3 To participate in CHAT course discussion groups
4 To retrieve course information (outline, deadlines for assignments, etc.)
5 To search for information using gopher, the Internet, World Wide Web, etc.
6 To collaborate with fellow students outside of formal online discussion groups
7 To maintain contact with friends and family
8 Other —> *please specify:*

_____

G3. How often do you use CHAT in your itv course(s)

1 Never
2 Rarely
3 Once in a while
4 Frequently
5 Very frequently
6 Almost daily

One of the things we are interested in learning more about is how you feel about CHAT discussion groups, and/or any collaborative exchanges using CHAT which either you or the instructor has established in your itv course(s).

G4. Comparing your experiences participating in CHAT discussion groups with your participation in traditional "face-to-face" on-campus discussion groups, please indicate the degree to which you agree with each of the following statements using the scale provided.

	Strongly Disagree	**Strongly Agree**
CHAT discussion groups are less stressful for me to deal with than face-to-face discussion groups.	1 — 2 — 3 — 4 — 5 — 6	
Using CHAT e-mail and the other technologies for information searches is more difficult for me than traditional forms of research.	1 — 2 — 3 — 4 — 5 — 6	
Face-to-face discussion groups provide more intense and stimulating communication of ideas than CHAT.	1 — 2 — 3 — 4 — 5 — 6	
CHAT discussion groups allow me to participate in discussion more thoughtfully at my own pace.	1 — 2 — 3 — 4 — 5 — 6	
Traditional face-to-face discussion groups build a better rapport among participants.	1 — 2 — 3 — 4 — 5 — 6	
CHAT discussion groups permit a more personal expression of ideas.	1 — 2 — 3 — 4 — 5 — 6	
CHAT and other electronic modes of groups discussion seem too impersonal to me.	1 — 2 — 3 — 4 — 5 — 6	
Innovative use of CHAT by my instructor(s) has made possible more interesting collaborative learning experiences.	1 — 2 — 3 — 4 — 5 — 6	
CHAT helps me develop the ability to write in the discipline I am studying.	1 — 2 — 3 — 4 — 5 — 6	
I enjoy using CHAT	1 — 2 — 3 — 4 — 5 — 6	

G5. Have you ever used any other form of technologically mediated communication (such as audio teleconferencing, etc) in any of your courses (at Carleton or elsewhere)?

1 No, I have never used any other form of mediated communication in courses

2 Yes, I have used other forms of technologically mediated forms of communication in courses I have taken ---> *Please describe these below:*

_____

_____

G6. To what extent have you had difficulty with each of the following aspects of life as an itv student? *Circle the most appropriate number for each item.*

	No Difficulty at all	**A Great Deal of Difficulty**	**N/A**
Understanding course material	1 — 2 — 3 — 4 — 5		6
Handling the workload	1 — 2 — 3 — 4 — 5		6
Studying effectively	1 — 2 — 3 — 4 — 5		6
Handling stress levels	1 — 2 — 3 — 4 — 5		6
Learning how to write papers	1 — 2 — 3 — 4 — 5		6
Balancing school and family/job responsibilities	1 — 2 — 3 — 4 — 5		6
Preparing for or taking exams	1 — 2 — 3 — 4 — 5		6
Maintaining my emotional health	1 — 2 — 3 — 4 — 5		6
Feeling connected to the class	1 — 2 — 3 — 4 — 5		6
Maintaining my physical health	1 — 2 — 3 — 4 — 5		6
Getting the academic advice or direction I needed from my instructor(s) or other faculty	1 — 2 — 3 — 4 — 5		6
Getting the advice or direction I needed from University staff (e.g., in your academic department, the Library, registrarial offices, admissions office, residence, health services,)	1 — 2 — 3 — 4 — 5		6

Section H: Some Information on Your Personal and Educational Background *It is important that we have a clear idea of the mix of students taking itv courses in terms of their demographic and educational backgrounds. Our ability to plan forms of student support, delivery services and course offerings depends on this.*

H1. What is your sex?

1 Male 2 Female

H2 What is your marital status?

1 Single
2 Married
3 Separated
4 Divorced

H3. How many dependents do you have living with you on a regular basis? _____

H4. Which of the following statements best describes your current housing?

1 University residence
2 Parents'/Guardian's/Relative's home
3 Rental unit including kitchen and bath occupied by you (and if applicable, your family)
4 Rental unit including kitchen and bath occupied by you and one or more persons other than your family)
5 Rental unit that is not self contained (e.g., room in a house where kitchen and bath are shared with one or more neighbours)
6 Dwelling you own (e.g., condominium, townhouse, or detached house)
7 Boarding with a family
8 Other *please specify:* _____

H5. What level of education have you successfully completed?

1 High school certificate or less
2 Some post-secondary other than university
3 Some university
4 Completed bachelor's degree
5 Some graduate-level study
6 Completed master's/doctoral degree
7 Completed professional degree(medicine, law, etc)

H6. What is your current employment status?

1 I am a student in the traditional age range (18-24) with no paid employment

2 I am a student in the traditional age range (18-24) with a part-time job (fewer than 35 hours a week)

3 I am a student in the traditional age range (18-24) with a full-time job (35 hours a week or more)

4 I am over 24 years of age with a full-time job (35 hours a week or more)

5 I am over 24 years of age with a part-time job (fewer than 35 hours a week)

6 I have retired from the labour force

7 I am a full-time homemaker with no paid employment

8 Other —> *please specify:*

_____

H7. How many hours do you normally work for pay ? *This question refers to the average number of hours per week, so if the number of hours changes from week to week, please indicate the average number of hours over the weeks you have been working.*

1 I am not employed at a paying job —> ***Skip to Question H9***

2 Employed 1-10 hours per week

3 Employed 11-15 hours per week

4 Employed 16-20 hours per week

5 Employed 21-34 hours per week

6 Employed 35 hours or more per week

H8. What is your occupation? *Please list your job title and briefly describe your work (e.g., secondary school teacher, salesman – sells electronic equipment, doctor –general practitioner, businessman – own your own retail business, executive assistant in a government department, clerical worker in a large business, homemaker, etc..)*

_____

H9. What is your approximate annual family income?

1 Less than $35,000

2 $35,000 to $54,999

3 $55,000 to $74,999

4 $75,000 or more

Finally, we would appreciate receiving any comments you might have on your experiences as a Carleton University itv student. In particular we would be interested in hearing how we might be of help to you. We look forward to hearing from you.

Comments: