IMPLEMENTATION OF A TOKEN RING LAN: A CASE OF A UNIVERSITY BUSINESS SCHOOL

Linda E. Duxbury
Carleton University

Anthony Koziol
Supply and Services Canada

This paper describes one of the first attempts to implement IBM Token Ring Network (TRN) technology in a multi-class computing environment. This paper summarizes the problems experienced we encountered in planning for and implementing the LAN. These are summarized below. The paper concludes with a summary of the lessons learned from this implementation.

The literature is full of advice on how to plan for and implement a Local Area Network (LAN). There are articles which tell one how to define users’ needs, develop application profiles and help potential users pick the most appropriate LAN technology to suit their particular computing environment (Currie, 1988; DEC, 1982; McNamara, 1982; Petrosky, 1986; Tanenbaum, 1982; Panko, 1988; Hordeski, 1987; Sprague & McNurlin, 1986). While useful, these books and articles do not adequately address the unique problems faced by organizations who must select and implement one LAN in a multi-class user environment. Such an environment has several distinct groups of potential users who have conflicting and often mutually exclusive computing needs, different backgrounds in computing, and different motivations for using computing technology. Selecting a LAN for such an environment is extremely difficult as it involves compromise to ensure that all user groups will be satisfied enough to use the system. Managers of multi-class user environments often encounter implementation problems not encountered with homogeneous user populations.

This paper describes one of the first attempts to implement IBM Token Ring Network (TRN) technology in a multi-class computing environment. As pioneer users of this technology, we encountered a number of problems in planning for and implementing the LAN. These are summarized below. The paper concludes with a summary...
of the lessons learned from this implementation. This paper should be of special interest to those interested in installing a LAN in a multi-class user environment.

The Implementation Site

The planning and implementation processes described in this study occurred in a medium sized Canadian university business school. During the past decade there have been several factors which have pushed the school towards increased computerization: (1) a greater curriculum emphasis on the acquisition of computer skills, (2) increased computerization of the university meant that the support staff of the main computer centre were overloaded and could not provide adequate support to the business school, (3) the acquisition of mainframe computing resources for teaching purposes was difficult if not impossible to obtain, and (4) a greater number of faculty required easy access to powerful computing facilities to support their research efforts.

In the summer of 1986, a steering committee consisting of interested faculty members was struck to study the problems outlined above and to recommend solutions. A feasibility study suggested that the acquisition of micro-computers by the school would provide the most cost effective way of increasing the school’s computing capabilities while simultaneously freeing it from dependence on the computer centre. A “computer manager” with experience in microcomputers was hired by the school to provide the technical expertise necessary to guide the analysis and implementation process.

The Computing Environment

The first question that needed to be addressed was whether the school’s needs would be better satisfied by the implementation of a LAN or the acquisition of individual micro-computer work stations? Two factors were considered important to the resolution of this issue: (1) what did potential computer users at the school want and need, and (2) what computing resources were currently available.

The first question was not easy to answer. It became clear early on that the business school had three classes of users (faculty, students and support staff) each of which had quite distinct computing needs and very different motivations for learning and using computing technology. To complicate the issue, users within each of these three major groups could be further sub-classified according to their levels of computer literacy.

Faculty wanted access to computer technology which would meet their research needs, increase their ability to communicate with others both on and off campus, and help them produce written documents. All faculty indicated that they wanted access to high quality printers and electronic mail capabilities both inside and outside the campus. They also all wanted individual computers located within their offices for easy access. Confidentiality of material stored on a LAN (i.e., examinations, grades) was a primary concern for this group.

Within the faculty group, there were large differences in computer expertise. Computing needs varied accordingly. Some faculty required high speed computing facilities with large amounts of memory and access to sophisticated application packages (i.e., linear programming and statistical packages, decision support and expert systems and compilers). Micro-computers would not supply enough power, memory, etc. for this group. Other faculty wanted applications such as spreadsheets and word processing which could easily be implemented on micro-computers. This group did not need the more powerful computing facilities. A third subgroup had little to no computer experience and their primary need was for a system that was easy to use.

Budgetary constraints meant that it would be impossible, initially, for the school to provide sufficient computing resources to satisfy the needs of the entire population of business school students. The steering committee decided to focus
Related Content

The Human Side of Information Systems Development: A Case of an Intervention at a British Visitor Attraction
[www.igi-global.com/chapter/human-side-information-systems-development/4428?camid=4v1a](www.igi-global.com/chapter/human-side-information-systems-development/4428?camid=4v1a)

The Effect of Usability Guidelines on Web Site User Emotions
[www.igi-global.com/chapter/effect-usability-guidelines-web-site/18282?camid=4v1a](www.igi-global.com/chapter/effect-usability-guidelines-web-site/18282?camid=4v1a)

Hasselt: Rapid Prototyping of Multimodal Interactions with Composite Event-Driven Programming
[www.igi-global.com/article/hasselt/179553?camid=4v1a](www.igi-global.com/article/hasselt/179553?camid=4v1a)

Contextualized Learning: Supporting Learning in Context
[www.igi-global.com/chapter/contextualized-learning-supporting-learning-context/18185?camid=4v1a](www.igi-global.com/chapter/contextualized-learning-supporting-learning-context/18185?camid=4v1a)