Managing the NICS Project at the Royal Canadian University
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EXECUTIVE SUMMARY

This case describes the installation of an IBM mainframe computer at the Royal Canadian University. The goal of the described project was to establish a Numerically Intensive Computing Service (NICS) in order to provide “first-class” computing facilities to the researchers. Due to a number of factors, NICS failed to meet its objectives and the university abandoned the project within the first two years of its operations. The factors that contributed to its failure include: advancements in computing technology and changes in the computing style of end users; political and other non-technical considerations in selecting the system; and the weak and adversarial relationship between the computer center staff and the senior university administrators. These factors, with a special emphasis on organizational issues, are discussed throughout the case. At the end of the case, the reader is invited to provide solutions for managing the current failure situation and minimizing its negative consequences.

BACKGROUND

The University

The Royal Canadian University (RCU) was established over 70 years ago. It is currently one of the largest universities in North America and employs about 2,000 faculty members in more than 100 academic departments, schools, and research centers. More than 30,000 students are currently enrolled at RCU. RCU’s annual revenue exceeds $300 million. Provincial government subsidies and research grants account for about 85 percent of RCU’s revenues and student tuition constitutes the remaining 15 percent. RCU considers itself one of the premier research institutions in North America. Currently, the university receives about $100 million annually in research grants and contracts. About 100 spin-off companies, with more than $700 million in annual revenues, have been established by RCU to market technology and know-how generated by its researchers.

RCU’s administration structure includes the president, the chancellor, the board of governors and the university senate. The president of the university is RCU’s chief executive officer and is responsible for overseeing its entire operations. The chancellor is elected by the university community and represents the university on official occasions. The 12 appointed and elected members of the board of governors are responsible for the administration of RCU’s property and revenue. The senate, which has more than 60 appointed and elected members, is responsible for the academic governance of the university.

The daily operations of the university are managed by the president, five vice-presidents and
twelve deans (see Figure 1). The Vice-President (VP) of Academic and Provost oversees the operations of the academic units of the University. The VP of Administration and Finance oversees many of the administrative departments of the University, including Finance, Human Resources, Plant Operations, Security, the Bookstores, Planning and Development, and Purchasing. The VP of External Affairs is responsible for all external university relations, fundraising and development. The VP of Research oversees the research activities of the University and manages the relationships with grant agencies and private research organizations. The VP of Student Services oversees many of the support operations of the University, including the Registrar, Athletics, Computing, Telecommunications, Housing, Libraries, and Student Services.

**History of Computing at RCU**

In the mid-1950s, the university president established a committee to assess the university’s interest in “computing machines and the study of automation in general.” After a review of RCU’s needs, the committee recommended the purchase of a computer for academic use. Contributions from local organizations in exchange for future computer usage were sought to help pay for its cost. A number of local firms declined the university’s request because they did not see a reason for using such a machine! One of them even replied that “with reference to your letter of August 20th, I confess that I am unfamiliar with the electronic computer and its possible uses.” Despite this lack of awareness in the business community, RCU managed to raise $20,000 in contributions from local organizations and acquired its first computer for $60,000 in 1957. This computer was an Alwac III E, a first generation, single-user computer capable of performing 250 instructions per second. This was among the first installations of computers in Canada. As expected, the Alwac III E became very successful soon after its installation. In its first two years of operation, it was used by more than 25 university departments and 16 outside organizations.

Due to the increased demand for computing services and the introduction of newer, more powerful machines, the Alwac III E was replaced in 1961 by an IBM 1620 computer. These two trends, the introduction of more powerful machines in the marketplace and the increasing demand for computing services, continued to play a key role in the university’s computer purchasing decisions for a number of years. By the early 1990s, RCU had acquired ten new machines, each providing two to 15 times the computing power of its predecessor. These frequent computer purchases were made necessary by RCU’s annual increase in mainframe usage, which is estimated to be about 20 percent.

The arrival of the first computer in 1957 was accompanied by the creation of RCU’s first computing center (CC). The center was developed to support the computing needs of the academic community. A director (who later became the president of the university) and two computer
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