Managing Information Security on a Shoestring Budget

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EXECUTIVE SUMMARY

As organizations continue to deploy mission-critical, network-centric information systems, managing the security of such systems has become very critical. Building and managing such security infrastructure can be potentially very expensive, especially for small and medium-sized organizations. The Indian Institute of Management, Lucknow (IIML), the premier teaching and research business school in India, embarked on implementing a robust security management infrastructure with a limited budget on hand. The case examines how IIML successfully implemented the security infrastructure by appropriately developing security policies and selecting a proper combination of freeware and proprietary software components. Since security management is not a one-time activity and uses intensive technology, a careful analysis is required to assess whether the maintenance of the security infrastructure can be done in-house or outsourced. The case illustrates the trade-offs involved and presents experiences of IIML in outsourcing the post-implementation phase to a Security Service Provider. The case also highlights the challenges organizations face while implementing freeware security products and outsourcing security services.

BACKGROUND

The Indian Institute of Management Lucknow (IIML) is one of the six national level management institutes set up by the Government of India at Lucknow, India, in 1984. The Institute's mission is to help improve the management of the corporate and the non-corporate sectors and also the public systems in the country, through pursuit of excellence in management education, research, consultancy, and training. In order to fulfill its objectives, the Institute undertakes a diverse range of academic and professional activities.

IIML has a large Information Technology (IT) infrastructure and has an annual budget of about 10 million Indian Rupees (INR) (equivalent to about $200,000) allocated in recent years for the development of information technology resources. The details of the annual budget allocated for the computer services of IIML for the year 2001-2002 is given in Appendix A. Students, faculty, and staff of IIML use Internet resources quite extensively for teaching, research, consulting, and administrative activities. The IT infrastructure of the Institute is distributed across the sprawling 20-acre campus. There are about 400 client machines, about 10 high-end servers running various operating systems, applications, and services, catering to the needs of students, faculty, and staff of the Institute. There are about 600 users on the campus.

The Computer Center (CC) at the Institute is responsible for all IT services on the campus and maintains 24-hour computer labs housing about 200 machines for the students, and also hosts the servers and networking equipment. The Computer Center employs one Manager and six systems and programmer analysts who are involved in the maintenance of IT services of the Institute. Most of the Computer Center staff has been with IIML since the Institute started Computer Center operations in 1986. Even though some of the Center's staff do not have academic and professional qualifications in Computer Science or related disciplines, they have acquired expertise in software development and networking through on-the-job training.

The IIML Web site (www.iiml.ac.in) is viewed by prospective students, researchers, and scholars at various institutions and corporations around the world. The web site also provides information to about 80,000 potential candidates who apply every year for the MBA program offered by the Institute. Apart from the World Wide Web (WWW), email is another Internet application that is widely used by faculty, students, and staff of the Institute. Email communication by students and faculty spans geographical boundaries and is one of the mission-critical Internet services of the Institute. The Institute Intranet is connected to the Internet via two Internet-access links. There is a plan to network all the student hostel rooms and faculty residences in the coming academic year to provide campus-wide networking. This will further increase the population of client machines by 500. The Institute also has plans to offer distance education programs to corporate executives in the near future.

SETTING THE STAGE

In a recent security survey report released by Internet Security Systems (ISS, 2002), it is reported that Internet risk was, in general, high in 2001 and is getting worse. ISS noted 830 million alarm events, and dealt with 2,185 security incidents in 2001 alone. ISS also points out that 70% of the security attacks happened through the widely used WWW services. IIML was also one of the thousands of affected organizations. The IIML web site was defaced a number of times between May and August 2001, and a large number of man-hours was spent to restore the damaged web pages. A spate of virus attacks caused considerable damage leading to data loss, increased clean-up costs, and a subsequent drop in productivity levels of the users. These attacks impacted the normal function of the users and caused considerable drain of computer center resources. IIML had installed simple security services that could not prevent the above-mentioned security intrusions. To address the above-mentioned security threats, a three-member security planning team was formed in August 2001. The team, including Mr. Mohapatra, the Computer Center Manager, set out to prepare a framework for the implementation of a comprehensive information security management system for IIML.

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