

Chapter 1

Introduction

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[Howard Selland, President of Aeroquip Corp.] issues a blistering attack on the reliability and hidden costs of today's software. He recently calculated the full cost of upgrading his company's 50-person research lab in Ann Arbor, Mich., to Microsoft Corp.'s Windows 95 from Windows 3.1. The bill was \$20,000 a person, or a total of \$1 million. Such is the seductive pull of technology, however, that Aeroquip just kept rolling out the new [technology] (Wysocki, 1998).

Windows 3.1. Windows 3.11. Windows 95. Windows 98. Windows 2000. Will it ever end? Should it ever end? The “it,” of course, is the seemingly endless chain of software versions released by virtually every company in the software industry. New versions of existing software provide updates, corrections, and enhancements that are designed to significantly increase the productivity of individual users, which should in turn lead to increased productivity at the organizational level. In recent years, however, the software industry has faced growing resistance to the rapid release of software versions due to high implementation and conversion costs (Wysocki, 1998). Unfortunately, many organizations are forced to upgrade to current versions in order to maintain compatibility and interoperability among not only internal systems but also links to external suppliers, customers, etc., in an effort to maintain consistent and functional levels of information technology (IT) infrastructure development.

Until recently, the problems and challenges associated with the rapid changes in IT have not been studied in great detail (Benamati, Lederer, & Singh, 1997); however, recent studies have shown that the speed with which companies are introducing new IT products is having a substantial impact on the management of the IT function in organizations

(Lederer & Benamati, 1998). The recognition of the problems associated with new IT is consistent with the problematic nature of IT infrastructure development which is often cited as one of the major problems of IS management in organizations (Brancheau, Janz, & Wetherbe, 1996). With increasing demands on infrastructure components such as hardware and software, there does not seem to be a simple way of maintaining a responsive IT infrastructure because endless upgrades to meet the demands not only incur significant monetary costs, but also they are practically impossible to support with staff and expert knowledge. Thus, in general, infrastructure problems represent one of the largest domains of open problems in the IS field (Zmud, 1997).

The problem of maintaining a responsive IT infrastructure is often attacked with numerous hardware and software upgrades to meet increasing demands on the IS staff and the information system (IS) in general; however, there has been relatively little research in industry or academia to evaluate the efficiency and effectiveness of such a solution. Thus, it seems reasonable to question the logic behind the endless hardware and software upgrades to which many organizations are resigned. Accordingly, in order to help practicing IT managers better understand the individual and organizational impacts of software upgrades, this book presents a view of the state-of-the-art in knowledge of the organizational management of software upgrades, including the results of a study that surveys a large number of organizational software users. Specifically, the book seeks to address the following major questions:

- Do software upgrades enhance the productivity of employees and an organization as a whole?
- What problems typically arise during the implementation of software upgrades?
- What steps can an organization take to minimize productivity losses during software upgrades?

The investigation of these questions is important to a wide variety of people and organizations, specifically (1) end-users seeking to become more productive from software upgrades, (2) managers deciding whether or not to purchase a software upgrade for an organization, (3) software vendors wishing to understand customer perceptions of upgrades, (4) information systems professionals needing to determine an optimal strategy for upgrading software, and (5) researchers studying phenomena associated with implementation of technology in organizations.

The book is organized into three major parts. Part I provides an introduction to the most current organizational research on software upgrades along with a set of factors that, based upon current knowledge, should be good predictors of successes/failures associated with software upgrades. Part II presents some basic research findings about users and their experiences with upgrades, and Part III provides a more in-depth look at some research results along with a discussion of upgrade strategies that can be deduced from the findings. In addition, Part III discusses some future trends and possible new technologies that could change the nature of software upgrades.

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