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Managing more with less – a real-time example of optimized resource allocation

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Abstract

There is a common theory that the larger the number of computer systems and associated applications in use, the greater the requirement for computer system resources. The objective of this paper is to review the techniques which can be used to manage large numbers of applications and systems with a small number of technical resources. A Case Study will be given to explain how these techniques have been used to manage a small technical staff (GIMS) which supports several divisions at a textile company in its process automation effort. © 1996 Elsevier Science Ltd.

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1. Introduction

Re-engineering, downsizing, re-structuring... these are the buzz words that permeate the Information Systems departments of every major company, regardless of the business sector – private or public. Frequently Information Systems groups have grown so large that not only are they non-productive, but the time to complete projects is actually impaired because of the hierarchical structures utilized in project management. To correct sluggish performance and to reduce costs, Information Systems (IS) groups are increasingly being asked to re-structure their organizations, taking advantage of “newer” technology to improve productivity. Cost reductions are a by-product of this effort, primarily due to the reduction in computer system resources and the migration to smaller, more real-time computer systems.

There have been many articles written on the subject of *re-engineering* or *down-sizing* as a “new” technique for reducing IS costs. The move to

client-server computing is also touted as necessary for the successful downsizing process. These articles indicate that there is a marked trend in both the private and public sectors toward this “new” information systems business ethic. And indeed a transformation is taking shape via the migration from large main-frame systems to smaller dedicated server based systems which utilize CASE Tools, SQL-Query based relational databases, and other products of the client-server environment in the Information Systems departments in every aspect of industry and government.

In the technical programming arena, smaller numbers of staff have always been the norm: therefore *downsizing* is very seldom pragmatic. Large main-frame systems are rarely if ever utilized for technical computer system applications. Typically, small dedicated servers are deployed to address CPU response time and I/O handling requirements of real-time applications. In effect, the restructuring and downsizing effort which is being implemented in traditional

