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#### **Authors**

Wright, William F. Smith, Rodney Jesser, Ryan et al.

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# SUCCESSFUL IMPLEMENTATION AND USE OF ENTERPRISE SOFTWARE:

# CENTER FOR RESEARCH ON INFORMATION TECHNOLOGY AND

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University of California, Irvine 3200 Berkeley Place

Irvine, California 92697-4650

and

Graduate School of Management

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# COMPAQ COMPUTER

### **CORPORATION**

An Academic Case Study

**AUTHORS:** 

William F. Wright

Email: wfwright@uci.edu Tel: 949-824-7017

161. 949-624-7017

**Rodney Smith** 

Ryan Jesser

Mark Stupeck

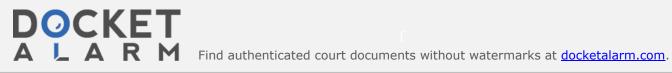
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# Successful Implementation and Use of Enterprise Software: Compag Computer Corporation<sup>1</sup>

#### I. Introduction

#### Business Strategies and Use of Enterprise-Wide Information Technology

Intensifying global competition and increasingly sophisticated consumer preferences require that companies respond quickly and effectively to market opportunities. In this economic climate, effective implementation of a business strategy depends upon insightful use of enterprise-level information technology to redesign business processes, improve supply chain management and increase the value provided to the customer. To accomplish these goals, managers need timely and comprehensive information to make good marketing, production and distribution decisions. These strategic needs have motivated many businesses to implement enterprise resource planning (ERP) software.

Packaged software products provided by Baan, Oracle, Peoplesoft, SAP AG and other vendors provide effective ERP solutions. The potential benefits of implementing ERP software can be very compelling for management:

- (a) Common business software applications (e.g., for procurement, production scheduling, inventory management and financial accounting) are used for all organizational units worldwide;
- (b) ERP software facilitates business process redesign or reengineering efforts, permitting the enterprise to more effectively improve business processes, reduce costs and execute fundamental business decisions;
- (c) Real-time access to information is provided on the major economic activities of the enterprise for all organizational units worldwide.

Currently, the popular SAP AG R/3 ERP software provides the most comprehensive coverage of business processes and economic events. Using the R/3 software, executive management can monitor and lead the entire enterprise at the levels of business processes (e.g., worldwide production and forecasting) and customer demand (e.g., by product line and by geographical region). Managers and professionals also can be more aware of the economic status of their units, and be more responsive to the needs of their customers. These benefits of a successful R/3 implementation can enhance the competitive position of a firm significantly.

#### Objectives of this Academic Case Study

An academic case study is intended to present a well-reasoned and theoretically sound analysis of how an important issue was framed and resolved by an actual firm. The issue for the current study is how strategic business use of enterprise-wide software, especially SAP R/3, can improve the economic performance of a large-scale manufacturing company. We provide a comprehensive, richly detailed analysis of how

<sup>&</sup>lt;sup>1</sup>This research has been supported by grants from the U.S. National Science Foundation, the Industry-University Cooperative Research Program, and IBM Global Services.



changes in Compaq's business strategy and its use of enterprise-wide IT transformed the company.

#### Why Focus on Compaq Computer Corporation?

Compaq has relied on strategic use of enterprise-wide IT to enhance its competitive position. Compaq experienced rapid growth in the 1980s, gaining a well-deserved reputation for producing high quality (and high cost) computers. In the 1990s, however, the computer marketplace became increasingly competitive in every market segment. Competitors such as Dell, Gateway, and Micron started delivering high quality products at low prices through mail order operations. Giant corporations such as IBM, Hewlett-Packard, and DEC were vying for market share in the large and medium business computer market. Large electronics companies like Packard-Bell and NEC were producing high volumes of low cost computers for the retail market.

Compaq felt the effects of this competition: it lost sales and market share. In 1992, its annual revenues dipped by more than \$300 million to \$1.5 billion while its operating costs continued to rise. Earnings per share dropped by over 70%. Compaq's management needed to respond--to develop a new business strategy that would allow them to compete successfully while remaining financially strong. The success of any change in strategy would depend directly heavily on how wisely Compaq used information technology across, and into, the entire organization. These issues constitute the theme of this case study.

#### Organization of the Case Study

This case study is organized as follows. The economics and competitiveness of the PC industry, and the role of information technology, are evaluated in section two. In section three, we concentrate on changes in Compaq's business strategy and its use of enterprise-wide information technology to implement strategic changes. Next, the impact of the strategy changes and use of IT on the economic performance of Compaq are evaluated using a Balanced Scorecard causal and performance analysis (Kaplan and Norton, 1996). The final section provides a summary of our insights and conclusions.

#### II. The Personal Computer Industry: Competition and Strategic Use of IT

#### Overview

It is not an exaggeration to assert that rapid and relentless economic Darwinism has prevailed, and continues to prevail, in the personal computer industry. "Compaq participates in a highly volatile industry that is characterized by fierce industry-wide competition for market share. Industry participants confront aggressive pricing practices, continually changing customer demand patterns, growing competition from well-capitalized high technology and consumer electronics companies, and rapid technological development carried out in the midst of legal battles over intellectual property rights." This statement from Compaq's June 30, 1997 SEC 10Q report describes accurately the highly competitive conditions in the industry.

These competitive conditions and demands have taken their toll on a number of firms. Companies such as Apple Computer, AST Research and Packard Bell are fighting for their survival. Others are leaving the market (e.g., Unisys Corporation) or have been acquired (e.g., Digital Equipment and Tandem Computer, both of which were acquired by



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