

UC Irvine

I.T. in Business

Title

Successful Implementation and Use of Enterprise Software: Compaq Computer Corporation

Permalink

<https://escholarship.org/uc/item/5tz202t5>

Authors

Wright, William F.
Smith, Rodney
Jesser, Ryan
[et al.](#)

Publication Date

1998-09-17



SUCCESSFUL IMPLEMENTATION AND USE OF ENTERPRISE SOFTWARE:

COMPAQ COMPUTER CORPORATION

An Academic Case Study

AUTHORS:

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

Rodney Smith

Ryan Jesser

Mark Stupeck

**CENTER FOR RESEARCH ON
INFORMATION
TECHNOLOGY AND
ORGANIZATIONS**

**University of California, Irvine
3200 Berkeley Place
Irvine, California 92697-4650**

and

**Graduate School of
Management**

Final Version: September 17, 1998

Acknowledgement:

This research has been supported by grants from the CISE/IIS/CSS Division of the U.S. National Science Foundation and the NSF Industry/University Cooperative Research Center (CISE/EEC) to the Center for Research on Information Technology and Organizations (CRITO) at the University of California, Irvine. Industry sponsors include: ATL Products, the Boeing Company, Bristol-Myers Squibb, Canon Information Systems, IBM, Nortel Networks, Rockwell International, Microsoft, Seagate Technology, Sun Microsystems, and Systems Management Specialists (SMS).

Table of Contents

<i>I. Introduction</i>	3
Business Strategies and Use of Enterprise-Wide Information Technology.....	3
Objectives of this Academic Case Study	3
Why Focus on Compaq Computer Corporation?	4
Organization of the Case Study	4
<i>II. The Personal Computer Industry: Competition and Strategic Use of IT</i>	4
Overview.....	4
Strategic Initiatives by the PC Manufacturers	5
Business Strategies and Use of Information Technology.....	7
<i>III. Compaq: Business Strategy and Use of Information Technology</i>	8
Context and Background.....	8
Compaq Changes its Business Strategy	9
Compaq's Redesigned Business Processes	9
1. Product design and development process.....	9
2. Manufacturing and distribution processes.....	10
3. Pricing process	10
Compaq's Restructured Organization.....	11
Compaq's New Enterprise Information System.....	11
Compaq's Strategy at the End of 1997.....	13
<i>IV. A Balanced Scorecard Analysis of Compaq's Performance and Use of IT</i>	14
Overview.....	14
Financial Accounting Measures of Enterprise Performance.....	14
A Balanced Scorecard View of Evaluating Enterprise Performance.....	15
Performance Results: Financial Outcome Measures	16
A Performance Model of Compaq	22
Compaq Falters in 1998.....	23
<i>V. Summary and Overall Conclusion</i>	25
<i>References</i>	28
<i>Table 1 Selected Financial Measures - Major PC Manufacturers</i>	29
<i>Table 2 IT-Enabled Enterprise Performance</i>	30
<i>Table 3 Selected 1998 (6 months) Financial Measures - Major PC Manufacturers</i>	31
<i>Figure 1 Relative Shares of the PC Market</i>	32
<i>Figure 2 IT Impact on the Value Chain</i>	33
<i>Figure 3 Compaq's Information System Relationships</i>	33
<i>Figure 4 Compaq's Global On-Line Transaction System</i>	35
<i>Figure 5 Compaq's Build-to-Forecast System</i>	36
<i>Figure 6 Compaq's Build-to-Order System</i>	37
<i>Figure 7 Balanced Scorecard Representation of Causes and Effects</i>	38
<i>Figure 8 Compaq's Balanced Scorecard Objectives</i>	39
<i>Figure 9 Compaq's 1997 Performance Based on the Balanced Scorecard</i>	40
<i>Figure 10 Compaq's 1998 Performance Based on the Balanced Scorecard</i>	41

Successful Implementation and Use of Enterprise Software: Compaq Computer Corporation¹

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

¹This 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

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.