The Digital Organization

AlliedSignal's Success with Business Technology

James D. Best

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JOHN WILEY & SONS, INC.

New York • Chichester • Weinheim • Brisbane • Singapore • Toronto

This text is printed on acid-free paper.

Published by John Wiley & Sons, Inc.

Library of Congress Cataloging-in-Publication Data:

Best, James D., 1945–
The digital organization : AlliedSignal's success with business technology / James D. Best.
p. cm.
Includes index.
ISBN 0-471-16159-4 (cloth : alk. paper)
1. Allied-Signal Inc.—Management. 2. High technology industries—United States—Management—Case studies. 3. International business enterprises—United States—Management—Case studies. 4. Management information systems—Case studies. I. Title.
HD9503.B47 1997
658′.05—dc20 96-34960

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

To the staff of the AlliedSignal Computing Technology Center.
Thank you for your skill, dedication, and professional attitude.

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INTRODUCTION

BEGINNINGS

Making money is art and good business is the best art.

—ANDY WARHOL

Larry Bossidy was concerned. A year earlier, a project had been approved to build a new financial information system. He intended to make this state-of-the-art system a key element in his strategy to operate AlliedSignal as "one company" on a global basis. The company needed the new computerized process to reduce the closing cycle, analyze financial trends, measure performance, and allocate corporate resources. Now he discovered the project had stalled due to technical difficulties.

As AlliedSignal's Vice President of computing and network operations, I knew Mr. Bossidy's "concern" would kick off a frenzied effort to get the project moving again. We eventually succeeded in saving most of the foundation work, but the near-disaster taught AlliedSignal that it needed to change the way it managed new computer technology. An investigation revealed far too many mistakes. Management had put too much faith in a new technical solution, did not insist on common codes for key data, selected embryonic development tools from boutique software houses, and did not install the prerequisite infrastructure for enterprise computer systems. AlliedSignal, however, had the good fortune of experiencing this problem several years ago, allowing

the company to learn early that network computing requires discipline and good management.

Speed Demon

Typical of Bossidy, difficulties with one systems project did not dissuade him from his determination to upgrade information systems at AlliedSignal. Instead, he figured out what went wrong and reset the company's course.

Larry Bossidy set a rapid pace for AlliedSignal that forced people to break the old rules and invent new ways of getting things done. In World War II, industry designed and produced unbelievable volumes of goods and services. Even Bossidy can't maintain the urgency of war, but he does drive AlliedSignal faster than anyone else believes possible.

Why the rush? In 1991, when Bossidy left General Electric to be CEO of AlliedSignal, he inherited a menagerie of businesses with moribund performance. Bossidy found AlliedSignal trailing behind world-class companies that were continuing to increase their competitive lead. In a merciless global economy that feasts on the weak, Bossidy needed to catch up in a hurry to survive, then continue sprinting to remain a world player. Speed alone does not make you competitive; you also need to move in the right direction. Purposeless flailing-about creates a black hole into which you pour time, money, and your best people. Bossidy's success comes from knowing where he wants to go and keeping the entire company focused on the business strategy.

Through his leadership, AlliedSignal made a quick transition from a stodgy Fortune 50 company into a premier competitor with a reputation for success. AlliedSignal's earnings have grown at a compound average of 25 percent, the share price has appreciated 279 percent, and the market valuation of AlliedSignal increased from $3.6 billion to $13.4 billion. The company earned these results by having a good business strategy, aggressively innovating new ways to achieve stretch targets, making smart acquisitions and divestitures, careful allocation of assets, meeting customer needs, and aggressively managing every aspect of the

company's operations. Information technology plays a crucial role in each of these business objectives.

Bossidy insists that information technology investments leverage the organization's ability to increase sales, improve productivity, share common solutions, and operate as one company. This tightly coupled approach sets AlliedSignal apart from many other companies. A business perspective, instead of an unfocused zeal for technology, forces rational investment decisions, deployment of technical solutions to the workplace, and the engagement of general management.

AlliedSignal knows how to make information technology contribute to profits. *The Digital Organization* explains how AlliedSignal uses technology initiatives to meet corporate goals. As AlliedSignal's Vice President of Computing and Network Operations, I was responsible for these initiatives. This book presents the perspective of practitioners held accountable for delivering information technology to a company driven to exemplary performance.

The Digital Organization

There is nothing mysterious nor magical about computers. They can be managed as easily as other aspects of the corporation—if you pay attention and manage consistently. Bossidy directed his business leaders to reduce cost, while increasing sales and investing for the future. He directed his computer executives to reduce overall information technology spending, while at the same time provisioning the company with a contemporary infrastructure and new computer applications that leveraged the business strategy. *The Digital Organization* explains how we accomplished this apparent contradiction in priorities.

The postmortem on the troubled financial information project distilled our mistakes down to three tenets that now guide AlliedSignal's deployment of new computer technology: (1) Install a technical infrastructure using aggressive corporate initiatives, (2) select the right technology, and (3) effectively manage computer people. It takes a comprehensive detailed strategy to integrate people, processes, organizational design, and

computer systems into a seamless whole. When all these elements work together, the organization executes with what appears to be effortless ease. A truly digital organization complements the company's structure and processes with information technology that leverages skilled people.

We all want to energize and provision our organizations with the latest and best technology without challenging the national debt or chasing down too many blind alleys. Has AlliedSignal discovered a secret way of achieving this goal? I'm afraid not, but the company has made significant progress. In just a few years, it consolidated mainframes and servers, installed a global enterprise network, provisioned every employee with e-mail and groupware, upgraded site infrastructure, created an Electronic Data Interchange (EDI) processing center, adopted common systems across business units, and used Internet/World Wide Web technology for new and exciting applications. All of this was accomplished without ramping up expenditures. These achievements came from hard work, a good plan, and the application of standard management principles to computer technology.

Quite simply, if your plan makes sense, then you can achieve your objectives with surprising ease. The plans that most companies have for information technology cannot pass this basic test. A digital organization does not happen by accident. If you want information systems truly integrated with your people, processes, and organization, then you need a clear vision, a workable strategy, good plans, and determined execution. If there is a secret to AlliedSignal's success, it is that *it approaches computer technology with the same intensity and management style as every other aspect of its business.*

Tools of the Trade

Computers, networks, and applications are tools of modern business. Computers alone cannot drive profitability, but their absence makes it impossible for a company to be competitive. The information revolution truly has transformed business. Evidence of the explosive influence of computers can be seen in articles and whole sections dedicated to computers in *Forbes, Fortune, BusinessWeek,* and your local newspaper's

business section. The shock wave of computer technology is powered by bright and ambitious entrepreneurs striving to be the next celebrity zillionaire on the cover of *Newsweek*. The computer industry epitomizes raw, aggressive capitalism, with rewards and recognition inciting innovation, invention, and ideas. The assimilation of all this new technology presents an enormous challenge to organizations. It seems impossible to keep up even though we spend huge chunks of money chasing the next piece of wizardry computer entrepreneurs bring to market.

The breadth and persuasiveness of computers rattles the senses. This all developed after World War II with electronic accounting machines (EAM), evolved to electronic data processing (EDP), progressed to management information systems (MIS), burgeoned into information technology (IT), and then exploded into myriad technologies indispensable to modern business. This technology outburst includes not only computers and networks, but voice communications, facsimile, videoconferencing, intelligent copiers, infrared devices, radio frequency units, and all sorts of specialty equipment that includes the ubiquitous microprocessor.

New technology allows us to improve traditional information systems, but more important, it brings to fruition whole new classes of applications. Software houses pump out office suites, work group applications, hands-off transactional processing, workflow management systems, electronic publishing, electronic data interchange, design tools, product management systems, automatic teller machines (ATMs), kiosks, virtual reality, and systems that allow customers to directly process their own transactions. The revolution has expanded beyond information to communications, imaging, document management, and process control. The high technology industries roll out new products in an unprecedented competitive furor. Running a business today means managing this outpouring of new computer technology—and making it all work.

Will Work for Food

Businesses and government want to take advantage of all the new technology, but they keep running into the same problem: legacy systems.

Each part of the organization does things its own way, using arthritic information systems. So management authorizes expensive projects to replace these old systems with new technology. When they don't work, time and money vanish without a trace. At a recent conference, someone sparked a lively discussion when she mentioned a $4 million failure in delivering a new computer system. After several rounds of "Can you top this?" the dubious honors went to an insurance company with a $30 million fiasco. Expensive system failures occur far too often and receive increasing play in the press.

Michael Ruttgers, CEO of EMC Corporation, claims that among his customers, management abandons one-third of new technology projects and three-quarters never fully deliver on their promised benefits. EMC, the largest supplier of off-line computer storage, sponsored a survey, to which 86 percent of the respondents expressed concern over their ability to use information technology to lower cost or increase revenue. The Standish Group, a Dennis, Massachusetts, consulting firm, says their analysis shows only 16 percent of information systems projects complete on time and on budget. The Standish Group confirms EMC's claim that companies cancel nearly one-third of new information technology projects.

Computer Associates CEO, Charles B. Wang, said, "You don't hear or read a lot about the failures, but some have been monumental."

Jeremy Frank, of GartnerGroup, chimes in, "Over half of all client/server projects fail."

Dr. Franklin Moss, President and CEO of Tivoli Systems, Inc., says, "What works in the lab, doesn't work in production."

Ambitious projects crash and burn on an increasingly frequent basis. Some are mismanaged, some stretch technology too far, some run out of money, and others are foolish from the start. Besides the systems that never get off the ground, a greater number get implemented, delivering far less than originally promised. All this frustrates managers, who lash out angrily at anyone within reach, especially the computer people. If this sounds familiar to you, then you've picked up the right book.

Enterprising Solutions

Many huge successes, fortunately, offset the colossal failures. What makes the difference? Enterprise solutions provide the common thread of AlliedSignal's winning strategy. The business trend of adopting best practices relies on propagating systems and process across the entire enterprise. There is a basic law here: Enterprise solutions must be managed at the enterprise level. Corporate initiatives need to build a consistent infrastructure for enterprise applications to ride on. Without consistency, performance can be anemic, applications do not reach some corners of the enterprise, and costs increase as developers accommodate the junk strewn around the company.

The failure of big-ticket projects represents the biggest risk. To preclude this ugly scenario, corporations must initiate comprehensive upgrades of infrastructure and establish enterprise processes and standards for deploying computer technology. Sorry, there is no single silver bullet—slaying this beast will require firing off a great pile of silver BBs. Because technology moves fast, time is the greatest enemy; you need to catch up and then keep up.

The key to success is consistency, not technical eloquence. AlliedSignal accomplished this with far less money than some consultants will tell you is necessary. Speed and thrift require a disciplined approach with clear objectives. Since you don't have a lot of money to throw around, you need to reduce the cost of your existing computer systems to fund the new stuff. I'll describe the innovative ways AlliedSignal funded and rapidly deployed a contemporary infrastructure and corresponding applications on a global basis. A series of fast-paced programs built a solid infrastructure for the company and forced discipline on computer investments. AlliedSignal now demonstrates a keen ability to execute corporate initiatives to provide information technology to the entire enterprise.

Management Is Not a Spectator Sport

People in senior management positions tend to use one set of principles to manage their business, and an entirely different set when it comes to

computers. Why? Because the technology is complex and they've grown frustrated trying to make these machines do what they want. I'm going to explain how to get what you want from computers and how to manage this technology by using what you already know. Good management makes the difference between systems that hum and applications so anemic that they can't get out of their own way. Management frequently places too much reliance on some new piece of technology and forgets what it takes to make systems work. Throughout this book, I'll relate complicated computer issues back to general management principles you've already learned in the field.

My discussion will not get too complicated; I promise not to lose you in a morass of really technical data. I will explain what's working now, what's coming soon, and what you should avoid. Executives and managers do not need to become information technology experts. Most executives have never built a factory, designed a new product, defined a new chart-of-accounts, created a new advertising campaign, or written a legal brief. At least, they have not done all of them. Yet, they manage the professionals who do these things. You'll learn that it is equally important to manage your computer people.

The Digital Organization explains how AlliedSignal manages its technology to control spending and get the information it needs to compete. The book includes many suggestions on how to sift the good from the bad. These tips are important because the technologies discussed here will soon be obsolete, but you'll still be making computer technology decisions. Invention and innovation permeate the computer and related industries. You're going to learn about people who try unsuccessfully to slow down this change process. Some of them may even work for you. They're having a hard time managing the pace and don't even realize that doing so is their job. Confusion, conflict, and chaos reflect an energized and innovative industry that continues to change the way we live and work.

Organizations must learn to effectively deploy information technology. I've written this book for those responsible for delivering computer systems, as well as those who depend on other people's technological skills. I'm going to strip away the hype, explain what is going on, and

guide you in directing information technology issues. I'll also explain how to leverage your previous investments in computers, so you don't need to start from scratch. This prescriptive book explains how to solve today's most pressing problem in business. I'm a practitioner, so everything I recommend I've actually accomplished in the real world.

Hang on, I'm going to move fast and I intend for this to be fun. By the time you finish this book, you will approach your management responsibilities for business technology with confidence and aggressiveness. You'll know how to organize your computer functions, judge the effectiveness of your business technology management, and assess the quality of strategic plans for technology deployment. We're going to demystify all the sacred cows and unmask the technical subterfuge that cost you money and hamper your ability to get the productivity you so desperately need in this no-holds-barred world economy.

CHAPTER 1

A STRATAGEM FOR TURMOIL

Manage Your Strategy

An indefinable something is to be done, in a way nobody knows how, at a time nobody knows when, that will accomplish nobody knows what.

—THOMAS BRACKETT REED

Suddenly, your computers have become awfully ornery. Your old faithful workhorses have grown stiff with age while new technology was blossoming everywhere. Worse, your underlying technical infrastructure may be broken. There's more bad news—your job description says you must fix it. You know you need to shed this old stuff before you can invigorate your organization with new systems, but the task seems daunting. You don't have enough time, money, or able bodies. Additionally, someone has to hold things together while you simultaneously build a new world. You also need to pull this off without depleting the corporate treasury.

You need a plan—a good one. Most strategies for computer technology in the business world combine wishful thinking, dreadful economics, and naive simplicity. If your strategy offers up a clean-sweep agenda, costs more than Bill Gates's home, or relies on some flashy panacea, then you need to start thinking harder. A good strategy pursues a clear goal, drives tactical plans and decisions, conserves resources and, above