

Overview of Enabling Technologies

William G. Scheerer

This issue of the *AT&T Technical Journal* discusses the application of quality, re-engineering, and scientific principles to the business of satisfying customer needs at the highest possible levels. It examines AT&T methodologies—developed internally and through external partnerships—that ensure all processes, organizations, and individuals are working together to develop the best and most competitive responses to customer needs.

Introduction

The papers that follow in this issue of the *AT&T Technical Journal* continually underscore the need for products and services that meet traditional quality objectives and demonstrate reliability, timely delivery, and high value—attributes customers perceive as being most important. This broad view of quality is stressed at all management levels. As a result, AT&T has moved away from segmented, sequential, and narrowly functional processes and toward integrated, concurrent, and multifunctional processes to maximize customer satisfaction wherever and whenever possible. Woven through the fabric of most projects—and crucial to their supporting processes—are important contributions from information technology and information systems. Colleagues' jobs grow in breadth—and individual mobility is enhanced—by focusing on end-to-end process definition and control. Efficient, effective, and fewer interfaces between different work processes are the goal of process design.

To reach these objectives, a leadership position is required in each of these key disciplines:

- Customer satisfaction,
- Quality,
- Sales and service,
- Information technology,
- Research and development,
- Engineering,
- Marketing,
- Manufacturing,
- Software,
- Billing, and
- Finance.

The Changing AT&T Delivery System

The target paradigm for delivery in the 1990s is changing rapidly from that of the 1980s. End-to-end optimization—not local optimization—is viewed as success. Business goals—not purely technical achievements—drive processes, which are measured by their direct impact on customer satisfaction and financial results. Re-engineering is recognized not as a “greenfield start,” but as a process that moves a company dramatically to new business accomplishments, *from where it is*, by using new processes, tools, organizational, and “people” approaches. Information-technology systems are recognized as vital to early implementation of new, re-engineered processes. In fact, information technology itself may well be the driver—as it matures—for newly feasible end-to-end processes that restructure even the core-business definition.

And so, this issue of the *AT&T Technical Journal* focuses on new enabling processes and tools that drive and interact with future business development.

Papers in This Issue

The first paper, titled “Enabling Technologies for World-Class Business Operations,” addresses the important issue of maximizing business stakeholders' returns from business assets. Recognition of the common interests of customers, employees, and shareholders must be balanced with other competing interests. The full array of available organizational strengths, business processes, tools, and information technology must be used to transform and re-engineer a business that is expected to meet its future goals.

The product-realization process is a megapro-cess in itself—end-to-end from customer needs determi-nation to early product delivery. Considering the inter-ests of *AT&T Technical Journal* readers, the process was chosen as one that has experienced enormous, mea-sured productivity and quality improvements during the early 1990s, and that elegantly illustrates the leveraging of enabling technologies to do so. The seven papers in this issue span the engineering, quality, software, infor-mation technology, and customer-satisfaction disciplines.

The last paper in this issue, “CLASSIC and PROSE Stories: Enabling Technologies for Knowledge-based Systems,” discusses re-engineering the order-realization process, particularly for complex system delivery. It reviews the research, process technology, information technology, and tools needed to simplify and synchronize all aspects of the process, and explores methods for providing more timely, less expensive, and higher quality customer-service levels. The order realiza-tion process supports product and service realization and, together, these processes span nearly the entire product or service business.

William G. Scheerer is executive director of Quality, Engineer-ing, Software, and Technologies (QUEST) at AT&T Bell Laboratories in Holmdel, New Jersey. He is responsible for devel-oping new techniques to improve quality and productivity of development, manu-facturing, and business processes throughout AT&T. Mr. Scheerer, who is a senior member of the IEEE, has a B.S. from Syracuse University in New York and an M.S. from the California Institute of Technology in Los Angeles, both in electri-cal engineering. He joined AT&T in 1960.

