

Chapter 2 The Extent of an Organization's Connectivity

Chapter Objectives

This chapter will discuss:

- The evolution from isolated functions to business processes,
- Who requires access to an organization's networks, and
- From where they require the ability to access the networks.

2.1 Access in the Age of the Extended Enterprise

Over the past few decades, the ability to communicate with others electronically has advanced dramatically, leading to first the creation of the Internet and later the World Wide Web. The impact of this phenomenon on organizations concerning the pace of operations and the need for efficiency in their business processes is significant and will only become more so for the foreseeable future.

Originally a project of the U.S. Department of Defense (DoD) Advanced Research Projects Agency (ARPA), its task was to give various DoD activities the ability to share information through networked computers, hence eliminating the need to wait for surface mail to be delivered. As the cost of both computers (also originally developed by the U.S. Government) and connectivity decreased, private industry's ability to implement information technology grew.

Since its invention in the 1950s, the Internet has facilitated communication among an ever-increasing community of users—as costs have decreased and capabilities have risen, the applications developed for the medium have multiplied. One application is integrating the functions of an enterprise into an increasingly seamless data management system. Companies such as SAP and Oracle have developed applications to provide this

data management system. As is typical, the private sector led the way in implementing information technology, but the U.S. Government is now experienced in procuring enterprise resource planning (ERP) systems.

Before IT evolved to the point at which geographically distant parties became able to communicate with each other in beyond talking to each other or faxing each other, the only way to gather information was from the individuals responsible for their particular functionality. These “stove-pipes”, established based on how labor was divided at the time, were only concerned with their specific requirements and had little or no regard as to how their processes related to those of other parts of the organization, as shown in Figure 2.1. With ERP systems, the power of IT to enable an organization's business has literally exploded.

ERP systems give organizations the ability to streamline their supply chain and their front- and back-office business processes into a more “flat” or “seamless” regime leveraging IT's ability to distribute information to authorized (or unauthorized if one's not careful) parties to allow formerly functional smokestack sections of the organization instantaneously. For example, rather than a customer service employee being required to telephone or e-mail a colleague and wait for a response to a query, ERP solutions employ integrated applications with all information relevant to a customer user “case” available as shown in Figure 2.2. This real-time ability to access the most up-to-date information available as well as to generate reports based on that information is, according to Ptak (1999), critical to allowing decision makers to make good business decisions.

A major implication of a process-centric approach to information technology implementation is that an organization will be forced to change its emphasis on how it rewards its employees from doing one's job in isolation to helping to enable the business process or processes in which they reside. In the public sector especially, it is extremely difficult to realize organizational change. Instead, the organization goes through great pains to maintain the status quo. Many in government remember the days when new systems were custom-built and implemented functionality as specifically defined by the procuring organization's requirements. ERP systems, on the other hand, establish its options on already-coded best business practices and forces the organization to choose among available options, with “downstream” choices constrained by those made “upstream.”