

Chapter 11

Building Information Systems and Managing Projects

LEARNING TRACK 2: ENTERPRISE ANALYSIS (BUSINESS SYSTEMS PLANNING) AND CRITICAL SUCCESS FACTORS (CSFs)

Establishing Organizational Information Requirements

To develop an effective information systems plan, the organization must have a clear understanding of both its long- and short-term information requirements. Two principal methodologies for establishing the essential information requirements of the organization as a whole are enterprise analysis and critical success factors.

ENTERPRISE ANALYSIS (BUSINESS SYSTEMS PLANNING)

Enterprise analysis (also called business systems planning) argues that the firm's information requirements can be understood only by examining the entire organization in terms of organizational units, functions, processes, and data elements. Enterprise analysis can help identify the key entities and attributes of the organization's data.

The central method used in the enterprise analysis approach is to take a large sample of managers and ask them how they use information, where they get their information, what their objectives are, how they make decisions, and what their data needs are. The results of this large survey of managers are aggregated into subunits, functions, processes, and data matrices. Data elements are organized into logical application groups—groups of data elements that support related sets of organizational processes.

Figure 11-3 is an output of enterprise analysis conducted by the Social Security Administration as part of a massive systems redevelopment effort. It shows what information is required to support a particular process, which processes create the data, and which use them. The shaded boxes in the figure indicate a logical application group. In this case, actuarial estimates, agency plans, and budget data are created in the planning process, suggesting that an information system should be built to support planning.

The weakness of enterprise analysis is that it produces an enormous amount of data that is expensive to collect and difficult to analyze. The questions frequently focus not on management's critical objectives and where information is needed but rather on what existing information is used. The result is a tendency to automate whatever exists. But in many instances, entirely new approaches to how business is conducted are needed, and these needs are not addressed.

STRATEGIC ANALYSIS OR CRITICAL SUCCESS FACTORS

The strategic analysis, or critical success factors, approach argues that an organization's information requirements are determined by a small number of critical success factors (CSFs) of managers. If these goals can be attained, success of the firm or organization is assured (Rockart 1979; Rockart and Treacy, 1982). CSFs are shaped by the industry, the firm, the manager, and the broader environment. New information systems should focus on providing information that helps the firm meet these goals.

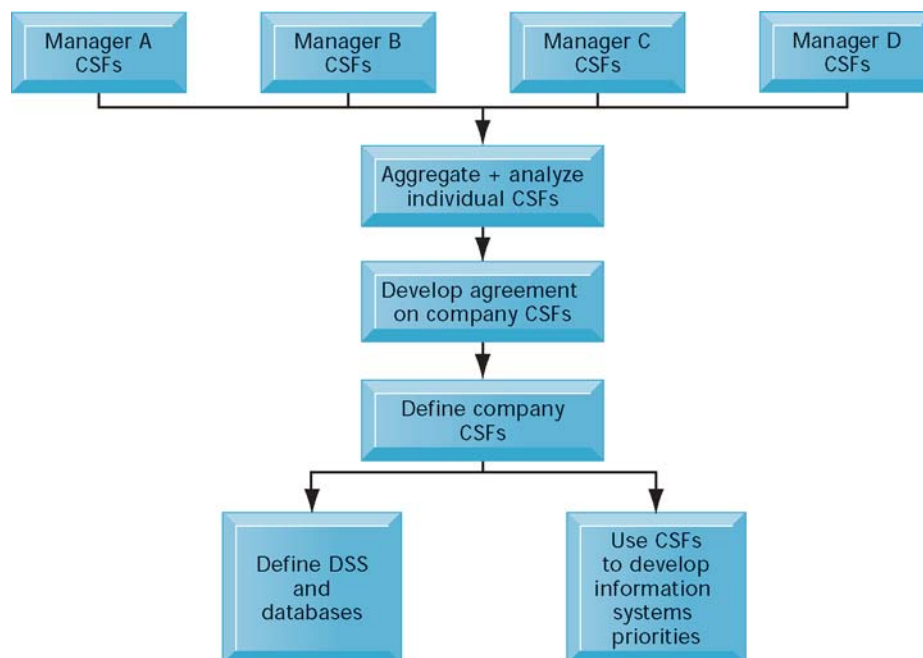
The principal method used in CSF analysis is personal interviews—three or four—with a number of top managers identifying their goals and the resulting CSFs. These personal CSFs are aggregated to develop a picture of the firm's CSFs. Then systems are built

TABLE 11-2 Critical Success Factors and Organizational Goals

Example	Goals	CSF
Profit concern	Earnings/share Return on investment Market share New product Energy standards	Automotive industry Styling Quality dealer system Cost control
Nonprofit	Excellent health care Meeting government regulations Future health needs	Regional integration with other hospitals Improved monitoring of regulations Efficient use of resources

Source: Rockart (1979).

often become confused when distinguishing between individual and organizational CSFs. These types of CSFs are not necessarily the same. What may be considered critical to a manager may not be important for the organization as a whole. This method is clearly biased toward top managers, although it could be extended to elicit ideas for promising new systems from lower-level members of the organization (Peffer and Gengler, 2003).

FIGURE 11-4 Using CSFs to develop systems.

The CSF approach relies on interviews with key managers to identify their CSFs. Individual CSFs are aggregated to develop CSFs for the entire firm. Systems can then be built to deliver information on these CSFs.