

# IT/Strategy Alignment

## *Identifying the Role of Information Technology in Competitive Strategy*

C. Lawrence Meador

*Working Paper No. 9403*

*Portions of this paper originally appeared in MIS Quarterly*

## ***Aligning Information Technology with Competitive Strategy***

Today, successful competitive strategy and corporate results are likely to focus on a small number of performance attributes including speed, flexibility, quality and scale. All four areas of strategic focus are profoundly affected by an organization's effective use of information technology to facilitate, enhance and accelerate strategic execution. The traditional view of information technology's (IT) role in competitive strategy is largely reactive - that is, a response to existing competitive strategy and business process, but not a critical factor in shaping that strategy and process. A more sensible approach is to position IT in a pro-active role where the competitive strategy is not viewed as a prior given, but rather as something that should be challenged, extended and perhaps modified, in light of emerging technologies and applications.

For most firms, an IT strategy does not actually exist in a formal sense. Instead, so called "strategic" information systems plans, application/data/technology architectures and IS management processes, each as development standards and reporting relationships, are all derived from the plans, processes and requirements of the business as it exists today. There is no overall direction or philosophy for the firm's use of technology and no sense that IT played a significant role in determining which strategy might be most effective, profitable and feasible.

Today however, the perspective of IT strictly as a support function in competitive strategy is increasingly out-dated. Leading firms are now seeking ways to exploit IT to transform their basic businesses, enhance their relationships with suppliers and customers, and create new market opportunities. While the "IT for competitive advantage" excitement of several years ago has subsided to some extent, many companies recognize the important role that IT can play in making the enterprise more competitive.

In fact, the lack of enthusiasm for the notion of competitive systems in academic circles may result from the very interrelated nature of IT and business strategy that we propose here. Unlike some of the oft-cited examples of firms developing so-called strategic systems, our research suggests that the most effective and sustainable examples of IT use

occur when IT is woven into the very fiber of the firm. In many ways, IT is most strategic when it is most mundane, having thousands of small impacts throughout the firm rather than one colossal, and often, easily duplicated success.

## ***The Traditional Approach to Information Technology Planning***

If the objective is to incorporate IT into every aspect of the firm's strategic thinking, then the traditional approach to IT planning is lacking in three dimensions:

- - - 1. The rapidly evolving and changing IT environment is not explicitly considered as a lever to change either the competitive strategy or the underlying business processes and infrastructure. It is often said that IT represents the single most powerful tool for redesigning the enterprise, but the way we typically plan and implement IT rarely allows for this higher level discussion. IT considerations are usually introduced only after the general themes have been developed.
    - 2. The competitive environment and strategy are not defined in terms that are helpful for identifying opportunities to use IT strategically. At best, a short list of critical success factors that help to focus attention on important areas is developed. However, little effort is made to describe how the firm will position itself in the competitive marketplace, and how it will relate to its customers, suppliers and competitors. Because IT is not really considered in this strategic context, there is little hope of identifying best practice for a particular business process either within the industry or in other arenas.
    - 3. In most of the important examples of strategic IT use, it is the technology architecture, not one single application, that provides the real competitive benefit. Traditionally however, we consider the architecture only as an internal question to be answered after we have determined which applications and data must be supported. To take full advantage of the emerging technologies that are likely to be important to the firm, we must develop a meta-architecture that provides a framework for future IT use.

Because the relationship between the firm's competitive strategy and its use of IT is developed through several layers of planning, analysis and design, the likelihood that IT will, in fact, have any strategic impact is small. There is no strategic touchstone to which IS executives can refer as they make decisions about new applications, technology and process. As there are no overarching principles that can be applied to the hundreds of detailed decisions that must be made each year. Each one is made independent of the others and perhaps optimized locally, but without a clear sense that it supports the broadest vision of the firm. In other words, there is no alignment between the firm's use of IT and its competitive strategy.

In an ideal world, there would not be a need for a separate *IT/Strategy Alignment* exercise because all competitive strategies would include IT in the same way they include marketing, production and finance. For most firms however, this is not yet the case. Therefore, *IT/Strategy Alignment* can be a very useful exercise prior to undertaking strategic IT planning, architecture development and other necessary tasks.

## ***Strategy Versus Planning***

At the simplest level, an IT strategy expresses the firm's basic beliefs about its use of IT. It is not an action plan or a set of decisions, but rather a collection of fundamental principles that guide future decision making. For example, an IT strategy might include such principles as:

- - - - "All new product development will explicitly consider ways to embed IT capabilities into product design and delivery";
      - "Because imaging technology is so critical to us, we will invest in leading edge systems and aggressively pursue new and experimental applications, without requiring formal cost benefit justification"; and
      - "All product divisions will have responsibility for application development and acquisition, but all decisions about technology platforms and infrastructure will be made by corporate IS."

An IT strategy helps managers to define the decision making boundaries for future action, but stops short of determining the actions themselves. This is the fundamental difference between IT strategy and IT planning. IT strategy sets the priorities that govern decision making by users and data processing professionals. It forms the policy framework for the firm's use of IT, and describes how the firm's senior executives will relate to the IT infrastructure. IT planning on the other hand, focuses on the execution of the IT strategy - in Drucker's terms, on "continuous decision making ... considering the 'futuraity' of those decisions."

Timing also plays a vital role in distinguishing between IT strategy and IT planning. Typically, business and IT strategies have time horizons that extend many years in the future. Strategic IT plans, on the other hand, typically focus on the next two to three years. But strategies are quite easy to change, and in fact, often change overnight with an acquisition or change in management. The execution of those strategies through detailed plans however, can take years to effect.

One approach to considering the relationship between IT use and competitive strategy is suggested by John Henderson and N. Venkatraman.<sup>1</sup> The alignment approach to IT strategy is based on the common sense premise that the effective use of IT requires consistency between competitive strategy and IT strategy. In other words, a set of IT principles are established that align the opportunities and limitations of the technology marketplace with the company's competitive strategy so that the strategy is facilitated. IT and business strategies are then translated into their own sets of plans, policies, processes and organization structures that must be consistent - both with the underlying strategies and with each other.

(<sup>1</sup> J. Henderson and N. Venkatraman, *IT Strategy Alignment*, MIT Sloan School of Management CISR Wkng Ppr 90-22.)

## ***What Does "Information Technology" Include?***

Like many terms in everyday use, information technology can mean different things to different people. Therefore, before presenting *IT /Strategy Alignment* in detail, it may be helpful to define the technologies we are including. Because IT strategy ought to consider the broadest possible scope, our definition of IT includes:

- - - - 
      - Transaction processing applications;
      - 
      - Information processing and reporting applications;
      - 
      - Decision support systems;
      - 
      - Executive support systems;
      - 
      - Professional productivity and groupware tools;
      - 
      - Knowledge-based systems and artificial intelligence;
      - 
      - Process automation and robotics;
      - 
      - Voice and data communications;
      - 
      - Design and manufacturing automation; and
      - 
      - Embedded computer technology (as in "smartcards" or ATMs).

This definition comprises a range of technologies somewhat broader than the transaction processing and management information systems that are the traditional focus of information systems planning. This wider definition reflects the accelerating integration of information systems with telecommunications and the bold new applications of IT in areas such as manufacturing, design, and control.

## ***Effective Implementation is Essential***

As a final introductory note, we should point out that our experience has shown that even the most clever strategy will fail without effective implementation. A consistent and focused program of innovation can make almost any strategy a huge success, while even the most novel strategy will fail if processes, plans, and organizational behavior are not consistent. Therefore, the objective of the *IT/Strategy Alignment* approach is to develop an IT strategy that is consistent with the competitive strategy; focused on a few important missions, and feasible given resources and constraints.

The *IT/Strategy Alignment* approach is not just designed to uncover the single best possible IT strategy; rather, it is meant to facilitate discussions about management beliefs and industry practices by:

- - - - Asking the relevant questions and helping individuals structure their thoughts and beliefs;
      - Considering a range of answers to the questions posed, based on company experience and the experience of other firms;
      - Developing consensus around the principles that seem best in addressing the demands of the competitive environment; and
      - Developing an ongoing (perhaps annual) review program to ensure implementation is tracking the strategy developed, and to modify principles as conditions change.

The *IT/Strategy Alignment* process must provide a non-threatening vehicle to isolate and then evaluate commonly-held views of IT use within the organization. If, for example, a non-standard vendor proposes to replace all of the client's old systems with new, integrated ones, should the proposal be considered or dismissed out-of-hand? The process must encourage flexible and creative thinking, and unfreeze (at least for a time) views of what is possible, impossible, wrong, consequential or inconsequential.

## *IT/Strategy Alignment Process*

As we begin to describe the *IT/Strategy Alignment* approach, it is useful to draw a distinction between the content of an IT strategy and the process by which we develop that strategy. While there are a number of content dimensions of IT strategy, we believe that three are particularly important:

- - - - Positioning and scope of IT activities;
      - Resource requirements and constraints; and
      - IT management and partnership.

The fundamental difference between *IT/Strategy Alignment* and traditional strategic IT planning is the elevation of IT as part of the firm's strategy, rather than just a response to it. To some extent, *IT/Strategy Alignment* can be thought of as the firm's linkage between a hostile competitive environment and the available technologies that position the firm for success. The technology architecture represents the infrastructure of that technology as applied to the specific opportunities of the business.

The actual *IT/Strategy Alignment* process consists of three phases as depicted in *Figure 1*:

- - - *Phase I -- IT Strategy Formulation*

- *Phase II -- IT Planning*

- *Phase III -- IT Quality Improvement & Innovation Programs*

Figure 1 depicts the Strategy, Planning, and Quality Improvement program for information technology that we believe most organizations must undertake. Overall, these activities might be termed "a competitive improvement program for IT" which positions information technology as a central feature in the way a company does business and competes.

**Figure 1**

*Strategies, Plan & Tactic*

**Figure 1**

*Strategies, Plan & Tactic*

**"Where We Need to Go"**

<b>Phase I - - IT Strategy</b>		
Positioning	Core Competence	Management



**"What We Need to Get There,  
and When We Need It"**

<b>Phase II - - IT Plan</b>			
Strategic Data & Technology Platform	Strategic Development Capability	Core Application Architecture & Implementation Plan	IT/Business Partnership & Education Plan

### ***Phase I -- Assess current alignment between IT and competitive strategy and formulate the new IT Strategy***

Before defining the specific ways that IT will be used within the business, it is important to uncover and address the competitive and technology strategy issues facing the business. In this phase of the project we therefore identify and make explicit the organization's business strategy and its executives' basic views about the role of IT in executing that strategy, while recognizing that IT can influence the strategy, as well as be influenced by it. Developing an IT strategy also begins the important task of developing an effective partnership between IS and business unit managers, by ensuring that each side understands the problems and opportunities facing the business. The IT Strategy forms the policy framework for the organization's use of IT, and it describes how business executives will work with IS staff.

There are a number of ways that IT strategies and business strategies might be misaligned, but as a starting point we consider three dimensions:

- - - - ***Ends and Means*** *At one level, the purpose of a strategy and plan is to ensure that the business has the means (resources, organization, and process) to reach its ends (goals, objectives, and mission). Therefore, one measure of alignment is the extent to which the organization can reach its desired ends given existing IT capabilities.*

*Time* Another measure of alignment is the extent to which the time horizon and pace of change is consistent between the business operations and IS. For example, if the business expects to compete on the basis of the speedy introduction of new products or product enhancements, then IS must be configured so that it can respond rapidly.

*Objectives and Values* A common form of misalignment occurs when the objectives and values of the business are inconsistent with the objectives and values of IS management. This often occurs because a single "corporate" IT Strategy is applied across business units with different strategies and plans, or because IS performance measures are inconsistent with business objectives. We have often found that the root causal factor is that senior operating managers in the business have not conveyed their priorities and critical success factors to IS management in terms that are adequately concrete, specific and actionable.

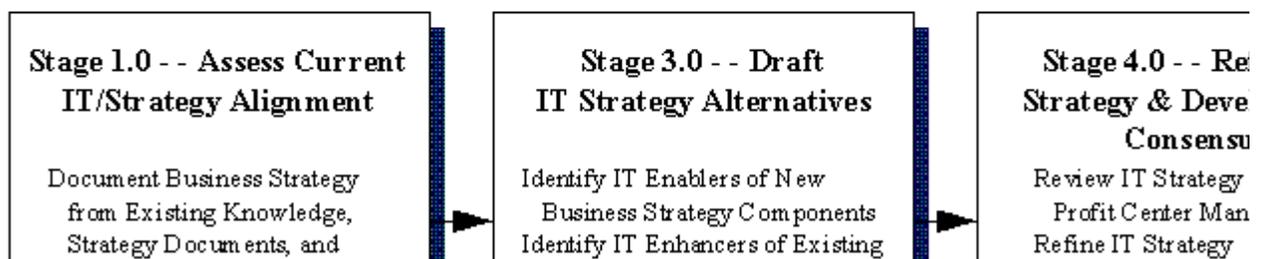
While the objective of this phase is obviously the development of a practical IT Strategy that can be implemented, it is important to note that many strategies and plans often fail because they focus on yesterday's problems and technologies. The strategy needs to anticipate likely technology developments in the next 3-5 years to ensure that the company stays "ahead of the curve." We must avoid exquisite strategies and plans for the IT equivalent of a Maginot line.

The actual work in the IT Strategy phase is performed in four stages and eighteen work steps as outlined in *Figure 2*. Again, it is important to note that work in this phase should build upon written strategy and planning documents that have been created by the organization. This avoids redundant data collection.

**Figure 2**

*Phase I -- Develop IT Strategy*

**Figure 2**  
**Phase I -- Develop IT Strategy**



### *Stage 1.0 -- Assess Current IT/Strategy Alignment*

The *IT/Strategy Alignment* process begins with a strategic IT needs assessment & problem diagnosis that allows executives to provide insight into their own critical needs, objectives, and priorities. When possible, interviews are conducted with members of each of the following groups: senior management, senior functional professionals, staff analysts, and IS management.

Interview checklists and questionnaires are carefully designed in consultation with one or two senior executives to ensure that all important areas of activity are covered. Broad areas of coverage should include:

- - - - A brief description of the objectives, scope, and plan of the project and a description of the project methodology;
      - Major business objectives/priorities/decisions;
      - Areas for improved IT support (applications and/or services);
      - Interfaces with other groups and organizations (internal and external);
      - Projections of future needs;
      - Policy issues such as authority, accountability, and degree of direct use; and
      - Feedback on the interviews.

The questionnaires are usually employed in short preliminary sample interviews with a few selected managers, and then revised based on this experience and feedback from other participating managers. These questionnaires gather largely impressionistic data, and as a result we have developed several descriptive and nonparametric techniques to structure managers' reports of their perceptions and preferences.

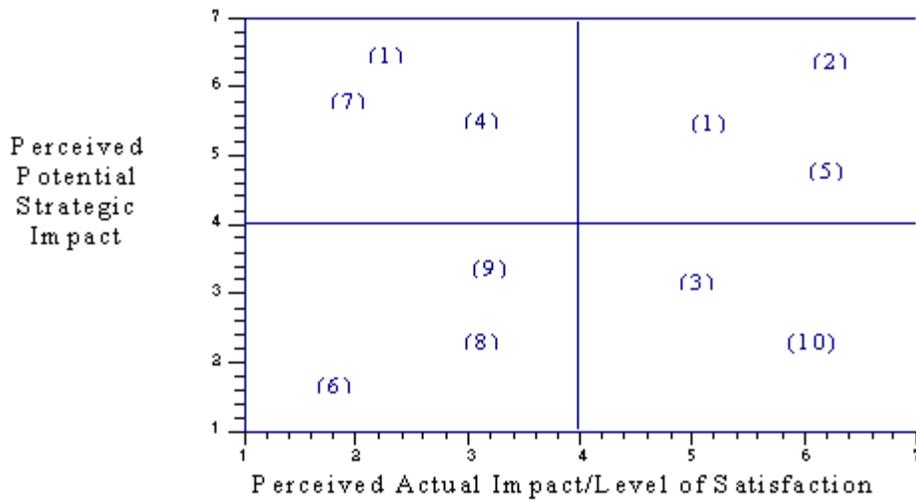
We have found it particularly helpful to have the respondents rate lists of issues and/or functional features on two separate dimensions: the strategic impact or "importance" of an area, and their perceptions of performance or satisfaction with that dimension. High priority issues and features are those that, for instance, are given very high importance but low performance/satisfaction ratings. Aside from making quantitative analysis possible, the use of rating scales facilitates comparison of results from different respondents.

Three of these analytic techniques are displayed in *Figures 3, 4, and 5*. In *Figure 3*, aggregate questionnaire responses are arrayed along the dimensions of "importance" and "performance." This technique is particularly helpful in identifying high payoff opportunities (those of high importance and poor performance in the upper left quadrant), as well as pointing out areas where excessive resources are being committed (those of low importance and high performance in the lower right quadrant). In the ideal situation, responses of the management team would be aligned along the diagonal axis from lower left to upper right, indicating appropriate levels of performance given levels of strategic impact.

### *Figure 3*

#### *Phase I -- Develop IT Strategy*

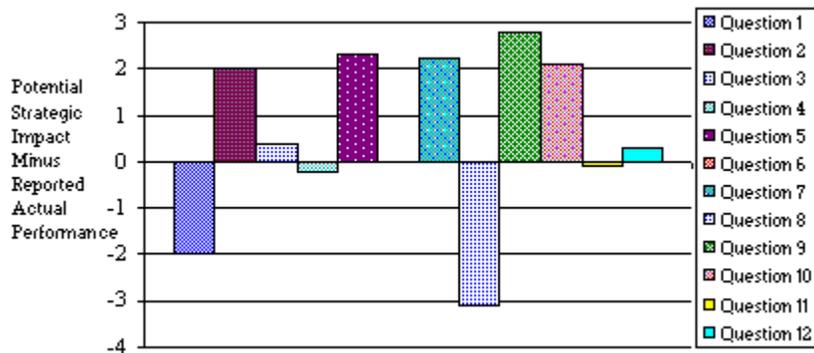
**Figure 3**  
 Strategic IT Needs Assessment & Problem Diagnosis  
 IS Improvement Opportunity Assessment



In *Figure 4*, the "gap" between performance and impact is displayed in a different format to demonstrate more clearly those areas that need the most attention, and in *Figure 5*, these gaps are presented for subunits within the organization. In our experience, there are often quite dramatic differences of opinion between business units along the dimensions measured, and this technique makes these differences more apparent.

**Figure 4**

*Strategic IT Needs Assessment & Problem Diagnosis*  
*Potential Versus Actual Strategic Performance*

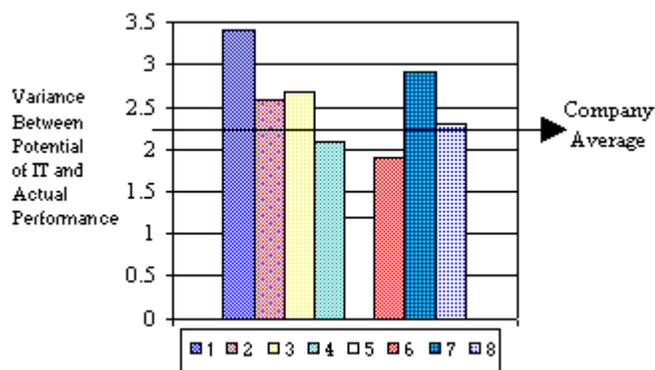


After identifying the organization's business strategy (which is often implicit and sometimes inconsistent), it is helpful to conduct an executive workshop where the strategy is described and its implications for IT explored. This workshop could be facilitated by a relatively neutral agent or perhaps consultant, and is "seeded" with business strategy insights gained from the interviews and questionnaires, existing written strategy documents, and some external interviews. The existing "IT Strategy" (really the implicit working assumptions for the organization) is then defined with the help of IS personnel, and areas of misalignment are identified.

**Figure 5**

*Strategic IT Needs Assessment & Problem Diagnosis*

*Analysis of Subunit Variation*



Stage 2.0 -- Identify IT Impacts on the Business Strategy

In keeping with the focus on "strategically significant" uses of IT, this stage focuses on important technology innovations that might be critical to the business. A brief review of competitor's IT use is performed to identify the "state-of-industry-practice" for important business areas, and a focused technology scan is also performed at a broader level to identify the state-of-commercial-practice in particularly critical areas (i.e. rapid application development and image processing, etc.).

- - *Stage 3.0/Stage 4.0 -- Identify and Refine IT Strategy*

Based on the results of Stages 1.0 and 2.0, a draft IT Strategy is developed as a "straw man" for further discussion and revision. Through a series of individual discussions with both IT and business managers, this IT Strategy is refined until it is ready for a second facilitated session where an effort is made to reach consensus about the new direction. Organizations often find that this meeting is later cited as the beginning of a stronger IS/Business partnership that leads to more effective and competitive use of IT.

The IT Strategy deliverable that results from Phase I consists of the following elements:

- - Positioning and Targets of Opportunity;
- - - 
    - 
    - Critical Assumptions
    - 
    - Competitive Role of IT
    - 
    - Goals and Measures of IT Value
    - 
    - Application Strategy and Risk Assessment

- - Core Competencies; and

- - - 
    - 
    - New System Development Competence
    - 
    - Ongoing System Operation Competence
    - 
    - Source of Competence

- - Management and Organization.

- - - 
    - 
    - Planning and Control Responsibility
    - 
    - Execution and Operations Responsibility
    - 
    - IS/Business Partnership
    - 
    - Cooperative Ventures

## ***Phase II -- Develop Profit Center IT Plan***

With the IT Strategy developed, work can begin on Phase II, the development of IT Plans for the business . At one level, the IT strategy describes our objectives for the technology, while the IT Plan defines the IT environment most likely to achieve those objectives. Our goal in this phase, then, is to define a Strategic IT Infrastructure that will enhance and facilitate existing competitive strategies, and potentially enable new strategic actions not previously envisioned. The major deliverable in this phase is a plan that defines how IS and the business will achieve:

- - A technology and data platform that is:
    - - 
      - Responsive and adaptable to the needs of the business;
      - 
      - Compatible (where necessary) across business units; and
      - 
      - Pervasive and widely used throughout the business.
- - Core applications that are modern, stable, reliable, and easily maintained and enhanced.
    - A development environment with:
      - - 
        - Rapid application development/enhancement capabilities;
        - 
        - Powerful development tools; and
        - 
        - A highly trained and competent staff.
- - High levels of user sophistication with IT.
    - Strong IS/business partnership.

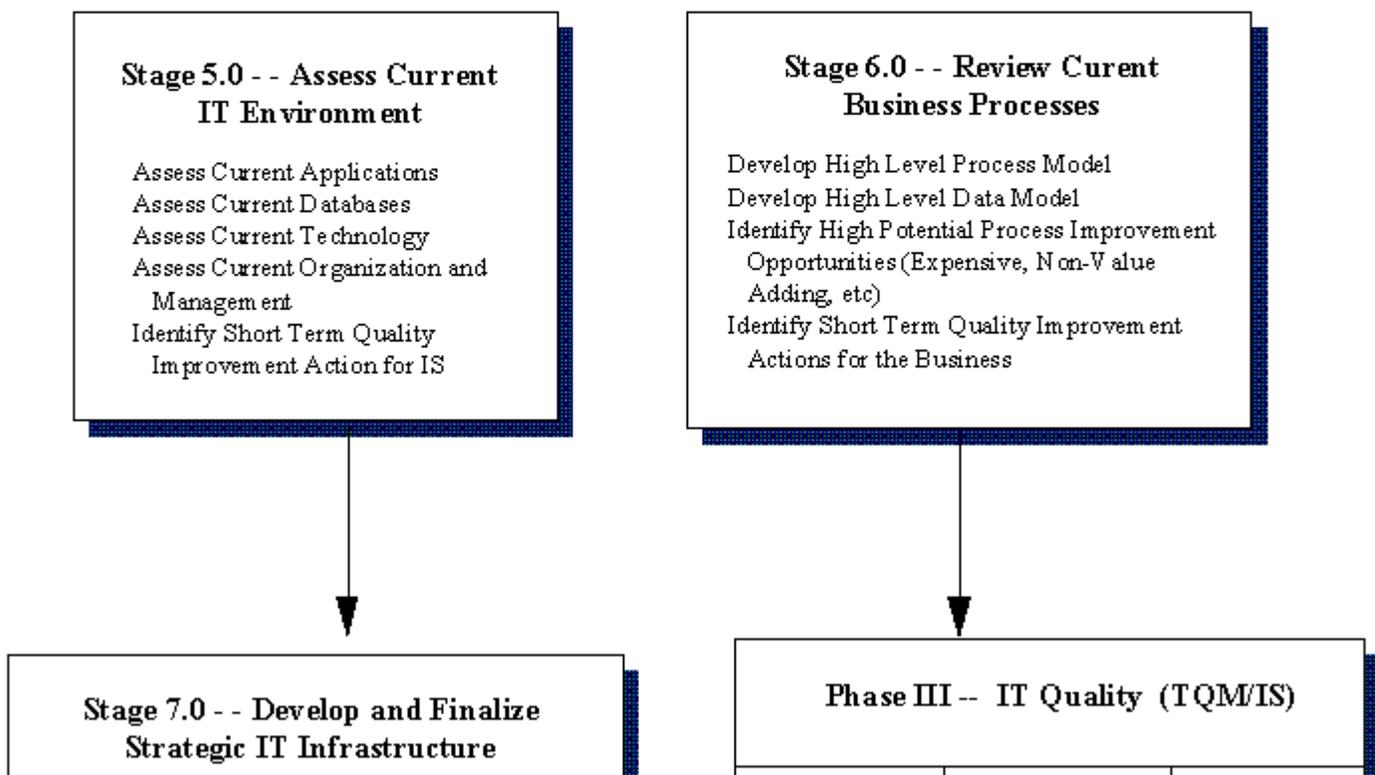
The IT Plan is thus a definition of the future state that will allow the technology to be a competitive tool, given the problems and opportunities facing the business. The plan is a high level design, often referred to as an "architecture" on which to build for the future.

It is important to note that we must carefully manage the level of detail in the planning process, especially in the data and application areas. Many planning exercises get off track by delving too deeply into the specific data and application systems required by each sub-unit, and miss the broader issues of IT/Business linkage. On the other hand, an IT Plan that is not tightly coupled with the details of the business strategy and operations can be superficial and misleading. A business manager will find it difficult to comment on the efficacy of a particular data model or hardware configuration in the abstract. The planning approach is therefore designed to link these IT issues to the manager's business context. The IT Planning phase is performed in three stages with fourteen work steps, as outlined in *Figure 6*.

**Figure 6**

*Develop IT Plan & TQM/IS Program*

**Figure 6**  
**Develop IT Plan & TQM/IS Program**



- - *Stage 5.0 -- Assess Current IT Environment*

The development of an IT Plan begins with an assessment of the IT environment currently supporting the business. This includes an assessment of the applications used by the business, the database/file structures supporting the business, and the technology in use. In addition, we review the organizational structure and management processes used to support the organization's use of IT.

Based on our knowledge coming out of the IT Strategy phase, it is often possible here to identify a few "quick hit" opportunities that could benefit the organization almost immediately. In combination with the earlier strategic needs assessment & problem diagnosis, this stage provides an important evaluation of IT support for the business, and a benchmark against which change can be measured.

- - *Stage 6.0 -- Review Current Business Processes*

As noted earlier, one of the earmarks of an effective IT Plan is the linkage it establishes between the business and the technology. In this phase we therefore interview and observe operational personnel to understand how they actually perform the work of the organization. High level process and data models are then developed to guide our deployment of the technology in ways that are consistent with these models.

As with Stage 5.0, an important deliverable of this stage is the identification of short term improvement opportunities in business process that can yield more or less immediate results. In addition, however, we also look for high potential process "reengineering" opportunities that are larger in scope and impact, and that deserve further investigation.

-

- - *Stage 7.0 -- Design "Strategic IT Infrastructure"*

In this final stage in the IT Strategy and Planning process, the Strategic IT Infrastructure is designed. This includes the definition of a data and technology platform, the design of an effective development capability, and a plan to ensure that "core applications" are solid and robust.

In addition, the IT Plan describes the mechanisms by which IS and the business will establish a true partnership, including consideration of:

- - - - 
      - Structure and Staffing;
      - 
      - Rules and Responsibilities;
      - 
      - Performance Measures and Reporting Systems; and
      - 
      - User and IS Education and Training Programs.

The IT strategic plan that results from this process provides the platform on which to build competitive uses of information technology, and is naturally extended into the specific IT quality programs that will cause change to occur.

### ***Phase III -- Develop IT Quality Programs***

The logical follow-on to the strategy and planning effort in Phases I and II is the development of IT Quality programs (which we call TQM/IS programs) that define the specific actions that will transition the organization from its existing state to its desired "Strategic IT Infrastructure." The TQM/IS programs include initiatives to improve the effectiveness of application development, system operations, and IT management as it relates to the business. Naturally, these programs are an important part of the company's overall quality initiative, with close coordination required between the overall program and the TQM/IS efforts.

While the details of this TQM/IS program are naturally specific to the problems and opportunities facing each company, we have found that many of the following areas often need attention:

- - Development of customized IT strategies and plans for individual business units that are facing unique competitive pressures. These strategies and plans usually address both common applications shared across business units and "strategic" applications that are unique to the individual business unit.
  - Identify appropriate IS responsibilities that balance the distribution of resources to "front line" functions against the capability of managing those resources by front line personnel.
  - Increase the importance of "process oriented" structures that span IS and the user community.
  - Implement an organizational development (OD) plan for IS and the user community to improve relationships across organizational boundaries.
  - Ensure that corporate development, data, and infrastructure standards are consistent with planned organizational structures and processes.
  - Undertake an application development effectiveness program to:
    - Increase the utilization of advanced development technologies; and
    - Increase the use of iterative/protocycling methodologies.
  - Implement an IS productivity and quality measurement process.
  - Refocus IS attention of external issues such as customer satisfaction, market data, and so on.
  - Develop a proactive response to the problems of so called "legacy systems" that are unresponsive to emerging business needs:
    - More sophisticated inquiry and reporting;
    - Common database strategies;
    - Encapsulation of legacy systems and the addition of more powerful user interface capabilities; and
    - Selective replacement.
  - Articulate specific senior management expectations and milestones for IS productivity and quality.
  - Create an IT "R&D" process to identify and demonstrate feasibility of strategic IT capabilities:
    - Process innovations;
    - Information use; and

- 
- Technology change.

## ***IT Strategy Forces a Competitive Perspective***

An IT strategy forces the organization to focus on those activities that will have the greatest impact competitively. These activities may or may not be those with the largest short run financial benefits, and in fact a simple test of the effectiveness of an IT strategy may be whether the firm rejects otherwise attractive projects, such as those with a high ROI or low risk because they are not consistent with the strategy.

Unlike strategic IT planning, information technology strategy alignment is an attempt to take a proactive position on competitive strategy. Here the competitive strategy is not viewed as a given, but rather as something that should be challenged, and perhaps modified, in light of emerging technologies and applications. At the simplest level, an IT strategy expresses the firm's basic beliefs about its use of IT. It is not an action plan or a set of decisions, but rather a collection of fundamental principles that guide future decision making.

## ***Organizational Development***

While Organizational Development is not a phase in the *IT/Strategy Alignment* methodology per se, it is an expertise that is needed throughout the process at varying stages, in varying degrees, depending on the project and client situation.

### ***Phase I -- IT Strategy***

- - - 
    - *Process* Professionally structured interviews generate insights based on the perspectives of management, end users, and internal customers/suppliers. Structured data collection from all participants regarding goal clarity, perceptions, attitudes, motivational factors and behavioral contingencies supplement interview data.

*Benefits* Organizational development involvement assures that the strategy formulation and planning process represents an optimum fit with the organization. When redesigning business processes, idealistic notions about "what might be possible" can become a serious liability. Risks associated with implementation problems are minimized when a consensus is reached on the vision of objectives. Attitudes and perceptions of all players are assessed and profiled to facilitate a smooth transition from planning to implementation.

*Deliverables* Overall findings from interviews and from the structured data collection efforts are fed back to project managers and participants with

*anonymity insured. Consensus building and commitment are developed through team oriented, focus-building workshops. A robust project plan is constructed with organization development components integrated.*

## *Phase II -- IT Plan and Phase III -- TQM/IS*

- - 
  - 
  - *Process* Business requirements are clearly defined within the context of organizational realities. These requirements are translated into concrete specifications of technology and organizational change. Organizational support structures and reward systems are analyzed and adapted to meet future organizational requirements.

*Benefits* Plans for changes in organizational policies and practices are developed to create maximum support for and gain acceptance of end users. Project team efforts are well focused and efficient. Energy is not wasted pursuing different priorities. Expectations within and between the client organization and the consulting team are consistent.

*Deliverables* Systematic feedback from plan review sessions track progress toward the formulation of strategies, plans and IS improvement programs. These feedback reports are shared and discussed with both facilitators of the process and the organization's project managers. Consensus building workshops are held where necessary to clarify progress to date, reconfirm the vision, focus expectations from different perspectives and specify roles for the remainder of the project. The implementation plan is prepared carefully, with full knowledge of the organization's expectations and concerns regarding rollout. Key implementation leaders are carefully selected and well prepared. Required training and development resources are identified and preparations made.

## **Summary**

The research and consulting base from which we have derived this methodology for *IT/Strategy Alignment* comes from our experience with some 200 organizations in the US, Europe and Asia over the past two decades. We hope to see IT strategy and planning eventually become part of and fully imbedded in the normal organizational business strategy and planning process and indeed there will still be a need to have some form of structured process to ensure quality and consistency. Many other viewpoints have been offered over the years on various aspects of IT strategy and planning (see Bibliography). Ours is one of those. We have said before that we do believe that the use of an explicit, consistent and repeatable methodology has value in structuring specific strategy development and planning processes as well as institutionalizing successful practices. Improvements from an established baseline may be easier and more relevant, as well as more effective, than always starting from scratch.

## **Information Technology and Competitive Strategy Bibliography**

Alexander, Christopher, Notes on the Synthesis of Form, Harvard University Press, Cambridge, 1964.

Anthony, Robert, Planning and Control Systems: A Framework for Analysis, Harvard University Press, Cambridge, 1968.

Chandler, Alfred D., Strategy and Structure: Chapters in the History of American Industrial Enterprise, Harvard University Press, Cambridge, 1962.

Davenport, Tom, Process Innovation: Reengineering Work Through Information Technology, Harvard Business School Press, Boston, 1992.

Earl, Michael J., Management Strategies for Information Technology, Prentice Hall, New York, 1989.

Ghemawat, Pankaj, *Sustainable Advantage*, Harvard Business Review, September/October, 1986.

Goold, Michael and Quinn, J. J., *Strategic Control: Milestones for Long-Term Performance*, The Economist, 1990.

Goold, Michael and Campbell, Andrew, *Many Best Ways to Make Strategy*, Harvard Business Review, November/December, 1987.

Hammer, Michael, Manifesto for the Business Revolution, Harper Collins, May, 1993.

Hax, Arnaldo and Majluf, Nicolas, Strategic Management: An Integrative Perspective, Prentice-Hall, Englewood Cliffs, NJ, 1984.

Henderson, Bruce, *The Origin of Strategy*, Harvard Business Review, November/December, 1989.

Henderson, John and Venkatraman, N., *Information Technology and Business Strategy Alignment*, Working Paper, Center for Information Systems Research, Sloan School of Management, MIT, 1989.

Jones, Capers, Applied Software Measurement: Assuring Productivity and Quality, McGraw-Hill, New York, 1991.

Jones, Capers, Programming Productivity, McGraw-Hill, New York, 1986.

Judson, Arnold S., Making Strategy Happen: Transforming Plans into Reality, Basil Blackwell, Cambridge, MA, 1990.

Keen, Peter G. W., Competing in Time: Using Telecommunications for Competitive Advantage, Ballinger Publishing Company, Cambridge, 1988.

Keen, Peter G. W. and Scott Morton, Michael S., Decision Support Systems: An Organizational Perspective, Addison-Wesley, Reading, 1978.

King, William, *Strategic Planning for MIS*, MIS Quarterly, March 1978.

Kuhn, Thomas S., The Structure of Scientific Revolutions, The University of Chicago Press, Chicago, 1962.

Maidique, Modesto, *Entrepreneurs, Champions, and Technological Innovation*, Sloan Management Review, Winter, 1980.

McFarlan, F. Warren, *Information Technology Changes the Way You Compete*, Harvard Business Review, May/June, 1984.

McFarlan, F. Warren, McKenney, James L., and Pyburn, Philip J., *The Information Archipelago -- Plotting a Course*, Harvard Business Review, January/February 1983.

McGee, James, Prusak, Laurence and Pyburn, Philip, Managing Information Strategically: Increase Your Company's Competitiveness and Efficiency by Using Information as a Strategic Tool, John Wiley, New York, 1993.

McKinnon, Sharon and Bruns, William, The Information Mosaic, Harvard Business School Press, Boston, 1992.

Meador, C. Lawrence and Pyburn, P. J., *Outsourcing IT: Operational Improvement or Strategic Imperative?*, MST Working Paper, February 1, 1993

Meador, C. Lawrence, *Outsourcing: Where Do We Go From Here?* InformationWeek, February 24, 1992

Meador, C. Lawrence and Oliff, Michael D., *Restructuring/Integrating Manufacturing*, InformationWeek, December 17, 1990.

Meador, C. Lawrence and Mahler, Ed G., *Choosing an Expert Systems Game Plan*, Datamation, August 1, 1990.

Meador, C. Lawrence, Guyote, Martin and Rosenfeld, William, *Decision Support Planning and Analysis: The Problems of Getting Large-Scale DSS Started*, MIS Quarterly, June 1986.

Meador, C. Lawrence, and Mezger, Richard A., *Selecting an End User Programming Language for DSS Development*, MIS Quarterly, December 1984.

Meador, C. Lawrence, Guyote, Martin and Keen, Peter G.W., *Setting Priorities for DSS Development*, MIS Quarterly, June 1984.

Meador, C. Lawrence and Ness, David, *Decision Support Systems: An Application to Corporate Planning*, Sloan Management Review, Winter 1974.

Mintzberg, Henry, *Crafting Strategy*, Harvard Business Review, July/August, 1987.

Nolan, Richard and Gibson, Charles, *Managing the Four Stages of EDP Growth*, Harvard Business Review, 1974.

Ohmae, Kenichi, *Getting Back to Strategy*, Harvard Business Review, November/December, 1988.

Parsons, Gregory, *Information Technology: A New Competitive Weapon*, Sloan Management Review, Winter, 1984.

Porter, Micheal E., *From Competitive Advantage to Corporate Strategy*, Harvard Business Review, May/June. 1987.

Porter, Michael E., *How Competitive Forces Shape Strategy*, Harvard Business Review, March/April, 1979.

Porter, Michael E., Competitive Advantage: Creating and Sustaining Superior Performance, The Free Press, New York, 1985.

Porter, Michael E., Competitive Strategy: Techniques for Analyzing Industries and Competitors, Free Press, New York, 1980.

Prahalad, C.K. and Hamel, Gary, *The Core Competence of the Corporation*, Harvard Business Review, May/June, 1990.

Pyburn, Philip J., *Linking the MIS Plan with Corporate Strategy: An Exploratory Study*, MIS Quarterly, June 1983.

Pyburn, Philip J., *Redefining the Role of Information Technology*, Business Quarterly, Winter 1992.

Quinn, James Brian, *Managing Strategic Change*, Sloan Management Review, Summer, 1980.

Rappaport, Alfred, *Selecting Strategies That Create Shareholder Value*, Harvard Business Review, May/June, 1981.

Roberts, Edward and Berry, Charles, *Entering New Businesses: Selecting Strategies for Success*, Sloan Management Review, Spring, 1985.

Rockart, John F. and DeLong, David W., Executive Support Systems: The Emergence of Top Management Computer Use, Business One Irwin, Homewood, 1988.

Rockart, John F., *Chief Executives Define Their Own Data Needs*, Harvard Business Review,  
March/April 1979.

Schwartz, Peter, The Art of the Long View, Doubleday, New York, 1991.

Scott Morton, Michael S., The Corporation of the 1990's -- Information Technology and Organizational Transformation, Oxford University Press, New York, 1990.

Senge, Peter, The Fifth Discipline: The Art and Practice of the Learning Organization, Doubleday, New York, 1990.

Stalk, George, *Time -- The Next Source of Competitive Advantage*, Harvard Business Review, July/August, 1988.

Strassman, Paul A., Information Payoff, The Free Press, New York, 1985.

Stringer, Robert A. and Uchenick, Joel, Strategy Traps and How to Avoid Them, Lexington Books, New York, 1986.

Synnott, William R., The Information Weapon: Winning Customers and Markets With Technology, John Wiley & Sons, New York, 1987.

Vincent, David R., The Information-Based Corporation, Dow Jones/Irwin, New York, 1990.

Winston, Patrick H., and Prendergast, Karen A., The AI Business: Commercial Uses of Artificial Intelligence, The MIT Press, Cambridge, 1984.

Wiseman, Charles, Strategy and Computers: Information Systems as Competitive Weapons, Dow Jones Irwin, Homewood, 1985.

Zuboff, Shoshanna, In the Age of the Smart Machine: The Future of Work and Power, Heinemann Professional Publishing, 1988.

## ***Journals and Reviews Relevant to IT Strategy***

- - Computerworld
  - 
  - European Journal of Information Systems
  - 
  - Forrester Reports
  - 
  - Harvard Business Review
  - 
  - InformationWeek
  - 
  - International Review of Information Management
  - 
  - Journal of Information Systems
  - 
  - Journal of Management Information Systems
  - 
  - Journal of Organizational Computing
  - 
  - Journal of Strategic Information Systems
  -

Organization Science

-

Release 1.0

-

Sloan Management Review



[www.it-consultancy.com](http://www.it-consultancy.com)  
Copyright © 1997, 1998, 1999 De Vos Consultancy.  
All rights reserved.  
Revised: March 23, 1999.

