Information Technology Strategy: Three Misconceptions

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ABSTRACT

The core intent in developing an IT strategy is to ensure that there is a strong and clear relationship between IT investment decisions and the organization’s overall strategies, goals, and objectives. In the course of developing an IT strategy, an organization may fall victim to three major misconceptions about IT strategy. Those misconceptions are:

- The IT strategy should be solely derived from a thorough review of organizational strategies and plans.
- The IT strategy should be dominated by a focus on defining needed application systems.
- The IT strategy is better if it is developed by using a rigorous methodology.

These misconceptions are dangerous. While they are right, they are not completely right. Hence, a dogmatic approach embracing these misconceptions risks an incomplete IT strategy or a strategy that is not as aligned with the organization as it should be.

KEYWORDS

- IT strategy
- IT management
- IT value
- Emerging technologies
- IT effectiveness
- Planning methodologies

The core purpose in developing an IT strategy is to ensure that there is a strong and clear relationship between IT investment decisions and the organization’s overall strategies, goals, and objectives.

Developing a sound IT strategy can be very important for one simple reason—an organization defines the IT agenda incorrectly or partially correctly, it runs the risk that significant organizational resources will be misdirected. Some, and perhaps most, resources may not be devoted to furthering strategically important areas. This risk has nothing to do with how well an organization executes the chosen IT direction. Being on time, on budget, and on specification is of diminished utility if the wrong thing is being done.

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tion may fall victim to three major misconceptions about IT strategy. Those misconceptions are:

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**Deriving the IT Strategy**

The IT strategy often is derived directly from the organization’s strategy. For example, if the organization is interested in improving patient safety, then the IT strategy will focus on applications such as computerized practitioner order entry (CPOE), electronic medication administration records, and error reporting. If the organization intends to improve patient service, then the IT strategy will focus on applications such as patient portals and new clinic scheduling systems.

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This strategy development approach depends on a fundamental assumption—once we know the organization’s strategy, we can deduce the IT strategy. This view of strategy formation can be limited by its failure to understand three other lines of thinking that can contribute to the definition of IT strategy. A strategy for IT can be based on continuous improvement of core processes and information management; determined by examining the role of new information technologies; and derived by assessing strategic trajectories.

**IT strategies based on continuous improvement of core operations and information management needs.**

There are a small number of core operational processes and information management tasks that are essential for the effective and efficient functioning of the organization. For a hospital, these processes might include patient access to care, ordering tests and procedures, and managing the revenue cycle. For a restaurant, these processes might include menu design, food preparation, and dining room service.

This line of thinking requires the organization to define its core operational processes and information management needs. The organization assesses the performance of these processes and develops plans to improve performance of these processes. The organization defines core information needs, identifies the gap between the current status and its needs, and develops plans to close those gaps. These plans often will point to an IT agenda.

These plans may be derived from the organization’s strategy, but not always. There can be ongoing efforts to improve processes, regardless of the specifics of the organization’s strategic plan. For example, every year an organization may undertake initiatives designed to reduce costs or improve service.

As a result, the IT strategy is partly driven by a relentless year-in, year-out focus on improving core operational processes and addressing critical information management needs.

**IT strategies determined by examining the role of new information technologies.** This approach involves determining whether new IT capabilities enable the organization to consider new approaches or significantly alter current approaches to its strategies. For example, wireless technologies may enable the organization to consider applications that previously were not effective because there was no good way to address the needs of the mobile worker. For example, medication administration systems now can be used at the bedside rather than forcing the nurse to return to a central work area to document administration.

In this vector, the organization examines new applications and new technologies and tries to answer the question, “Does this application or technology enable us to advance our strategies or improve our core processes in new ways?” For example, applications that support the communication between a physician and his or her patient through the Internet might enable the organization to think of new approaches to providing care to the chronically ill patient. Holding up new technologies in the spotlight of organizational interest can lead to decisions to invest in the new technology.

**IT strategies derived by assessment of strategic trajectories.** Organizational and IT strategies invariably have a fixed time horizon and fixed scope. These strategies might extend two to three years into the future, outlining a bounded set of initiatives to be undertaken in that time period.

Assessment of strategic trajectories asks the question, “What do we think we will be doing after that time horizon and scope? Do we think that we will be doing very different kinds of things, or will we be carrying out initiatives similar to the ones that we are doing now?”
There may be a plan to introduce decision support into a computerized practitioner order entry application. The decision support could point out drug-drug interactions and drug-lab test interactions. Answering the question about trajectories for decision support might indicate that patients’ genetic information eventually will be part of the decision support approach, because genetic makeup can have a very significant effect on patients’ drug tolerance.

The trajectory discussion may be grounded on IT applications such as the example above. The trajectory also may be grounded on today’s organization with an effort being made to envision the organization as it would like to be in the future. That vision of an organization may point to IT strategy directions and needs. For example, a vision of an organization with exceptional patient service might point to the need to move to applications that enable patients to book their own appointments.

The strategic trajectory discussion often is quite forward-looking and can be very speculative about the future. The discussion might be so forward-looking and speculative that the organization may not act today on the discussion. On the other hand, such discussions can point to initiatives that can be undertaken within the next year to better understand the future and to prepare information systems for it.

The Focus on Applications

Most IT strategy efforts focus on the development of an application agenda as the outcome. In other words, the completion of the IT strategy discussion is an inventory of systems such as the electronic medical record, customer relationship management systems, and clinical laboratory systems that are needed to further overall organizational strategies. However, the application inventory is a component of the larger set of IT strategy outcomes.

The application discussion does not stop when an inventory is completed. There are additional strategic discussions that must be held. These discussions focus on the following key areas.

**Sourcing.** What are the sources for our applications? What criteria determine the source to be used for an application? In other words, should we buy or build applications? If we buy, should we get all applications from the same vendor or will we get them from a small number of approved vendors?

**Application uniformity.** If we are a large organization with many subsidiaries or locations, to what degree should our applications be the same at all locations? If some have to be the same but some can be different, how do we decide where we allow autonomy? This discussion is often a tradeoff between local autonomy and central desires for efficiency and consistency.

**Application acquisition.** What processes and steps should we utilize when we acquire applications? Should we subject all acquisitions to very rigorous analyses?

Should we use a request for proposal for all application acquisitions? This discussion is generally an assessment of the way in which IT acquisitions should follow whatever degree of rigor is applied to non-IT acquisitions, such as diagnostic equipment.

**Infrastructure Concerns**

Infrastructure is composed of the organization’s information technology foundation, such as operating systems and networks, and the architecture in place to ensure that the foundation achieves desired objectives.

Infrastructure needs may arise from the strategic planning process. An organization desiring to extend its systems to community physicians will need to ensure that it can deliver low cost and secure network connections.

Organizations placing significant emphasis on clinical information systems must ensure very high reliability of their infrastructure; computerized practitioner order entry systems cannot go down.

The IT strategy discussion must focus on the addition or enhancement of broad infrastructure capabilities and characteristics. Capabilities are defined by completing the sentence “We want our applications to be able to….” Those sentences could be completed with phrases such as “be accessible from home,” “have logic that guides clinical decision making” or “share a pool of consistently defined data.”

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Characteristics refer to broad properties of the infrastructure, such as reliability, agility, supportability, integrability, and potency. An organization may be starting to implement more mission-critical systems and must ensure high degrees of reliability for its applications and infrastructure. The organization may believe that it is in the middle of significant environmental uncertainty and thus places a premium on agility. The strategy discussion intends to answer questions such as, “What steps do we need to take to significantly improve the reliability of our systems?” or “If we need to change course quickly, how do we ensure an agile IT response?”

**Data Strategies**

Strategies surrounding data can involve the degree of data standardization across the organization, accountability for data quality, and stewardship and determination of database management and analyses technologies.

Data strategy conversations may originate with questions such as, “We need to better understand the costs of our care. How do we improve the linkage of our clinical data
and our financial data?” or “We have to develop a much quicker response to the outbreaks of epidemics. How do we link into the city's emergency rooms and quickly get data on chief complaints?”

In general, strategies surrounding data focus on acquiring new types of data, defining the meaning of data, determining the organizational function responsible for maintaining that meaning and quality, integrating existing sets of data, and identifying technologies used to manage, analyze, and report data.

**IT Staff Issues**

IT staff are the analysts, programmers, and computer operators who daily manage and advance information systems in an organization. The IT strategy discussions can highlight the need to add skills to the IT staff, such as Web developers and clinical information systems implementation staff.

**“IT planning involved shared decision-making and shared learning between IT and the organization.”**

Organizations may decide that they need to explore outsourcing the IT function in an effort to improve IT performance or obtain difficult-to-find skills. The service orientation of the IT group may need to be improved.

In general, IT staff strategies focus on acquiring new skills, organizing the IT staff, sourcing the IT staff and solidifying the characteristics of the IT group, such as innovative, service-oriented, and efficient.

**IT Governance**

IT governance is composed of the processes, reporting relationships, roles, and committees that an organization develops to make decisions and manage the execution of those decisions, regarding IT resources and activities. These decisions include setting priorities, determining budgets, defining project management approaches, and addressing IT problems.

The IT strategy surrounding governance focuses on issues such as:

- Determining the distribution of the responsibility for making decisions, the scope of the decisions that can be made by different organizational functions, and the processes to be used for making decisions.
- Defining the roles that various organizational members and organizational committees have for IT, for example, which committee should monitor progress in clinical information systems, and what the role of a department head is during the implementation of a new system for the department.
- Developing IT-centric organizational processes for making decisions in several key areas, including IT strategy development, prioritization and budgeting, project management, and IT architecture and infrastructure management.
- Defining policies and procedures that govern organizational use of IT. For example, if a user wants to buy a new network for use in a department, what policies and procedures govern that decision?

**Governing Concepts**

Governing concepts refer to the views or concepts that guide how an organization thinks about IT. These views can cover a wide range of an organization’s IT resources. For example:

- Do we believe that IT is fundamentally a tool to accomplish our real objective—process re-engineering, or is IT a competitive weapon in its own right? Is possessing a technology of value, even if re-engineering does not occur?
- Should we view electronic prescribing as a competitive advantage or should we view it as a regional utility? If we view it as the former, we should proceed unilaterally. If we view it as the latter, we should put together a regional collaborative to develop it.
- When we say that we want to integrate our systems, what does integration mean to us? Common data? Common interfaces? Common application logic?
- Should IT be a tightly controlled resource, or should we encourage multiple instances of IT innovation? What would cause us to choose one approach over another?

All of these views or concepts are correct, because they all can be effective. However, after an organization chooses a concept or concepts, it tends to think about the technology that way, often to the exclusion of other ways of thinking about it.

There is no one formula or cookbook for arriving at governing concepts. Concepts emerge from complex and poorly understood phenomena involving insight, discussions between members of the organization’s leadership, examination of the strategic efforts of others, an organization’s successes and failures (and the reasons it assigns for success and failure), and the organizational values and history that form the basis for judging views.

**IT Strategy Methodologies**

Methodologies can be helpful in developing an IT strategy. These approaches can make the process more rigorous, politically inclusive, comprehensive, and more likely to produce a set of desired outcomes.

However, organizations that have a history of IT excellence would appear to evolve to a state where their align-
Original Contributions

The planning process is "methodology-less." A study by Earl of organizations in the UK that had a history of IT excellence found that their IT planning processes had several characteristics.

IT planning was not a separate process. IT planning, and the strategic discussion of IT, occurred as an integral part of organizational strategic planning processes and management discussions. In these organizations, management did not think of having an isolated IT discussion during the course of strategy development, any more than they would run separate finance or human resources planning processes. IT planning was an unseverable, intertwined component of the normal management conversation.

IT planning has neither a beginning nor an end. Often, the IT planning process starts in one month every year and is done a couple of months later. In the studied organizations, the IT planning and strategy conversation went on all of the time. This does not mean that an organization does not have to have a temporally de-marked process designed to form a budget every year. Rather, it means that IT planning is a continuous process reflecting the continuous change in the environment, and in organizational plans and strategies.

IT planning involved shared decision-making and shared learning between IT and the organization. IT leadership informed organizational leadership of the potential contribution of new technologies and constraints of current technologies. Organizational leadership ensured that IT leadership understood the business plans and strategies and constraints. The IT budget and annual tactical plan resulted from sharing analyses of IT opportunities and setting IT priorities.

These results imply that there is no method per se for developing IT strategy. Rather, the development of IT strategy is a never-ending series of discussions and debates that include mutual learning; it occurs across a range of settings, including senior management meetings and brief conversations in the hallway.

The limitations of IT strategy methods also are illustrated in surveys, across industries, of top management challenges. Invariably, these surveys find senior executive concern with the linkage of the IT agenda to the organization’s strategy. This linkage is difficult for many reasons—business strategies often are not clear or are volatile; IT opportunities are poorly understood; or the organization is unable to resolve the different priorities of different parts of the organization.

These reasons are often not correctable through a methodology. No methodology, for example, can answer the question “What is the value of a RHIO?”—there is not enough experience in the country for anyone to answer that question. An unclear business strategy can be a reflection of environmental uncertainty. Methodologies may not be able to bring certainty.

These sources of difficulty always will challenge the development of IT strategy, and there is unlikely to be any approach that can remove them.

Summary

Developing an IT strategy is a critical organizational process. This process will become more important as the strategic necessity of IT increases.

IT strategy should be based on a derivation of needs from the organization’s strategy. After all, IT is a tool of which the value is based on its ability to support organizational plans and activities. However, this derivation is not the only approach for identifying important IT investments. The IT agenda can be significantly influenced by efforts to improve core organizational processes and information needs, the opportunities created by new technologies, and a discussion of strategic trajectories.

The centerpiece of any IT strategy is an inventory of applications that need to be acquired and implemented. Applications are where the IT rubber meets the organizational road. However, the IT strategy needs to go well beyond the definition of applications. Application sourcing approaches, infrastructure characteristics, data standardization, governance, and the way an organization views IT are all essential elements of the IT strategy.

Strategy planning methods can enhance the planning process. They can add a discipline, comprehensiveness, and transparency to the process. However, real strategy is crafted in many conversations, in many settings, that go on all the time. No methodology can capture this dynamic. Moreover, IT strategy must occur in the middle of imperfection that can include unclear organizational strategy, poor understanding of IT opportunities, and political behavior. No method can fully compensate for these imperfections.

The development of IT strategy is a critical and complicated process. While this process will never be easy, it should not be unnecessarily impeded by misconceptions.

About the Author

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References


Note:

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