



# Applying Strategic Thinking beyond IT Management

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**IT managers need clear strategies to rapidly fix problems. They need to think strategically to maximize opportunities, handle risks, and widen the lead.**

It's much easier to fix problems and manage crises without thinking, planning, or taking purposeful action. Many times, we don't consider all the important ramifications when we make IT management decisions—for example, we install a new email server only to learn that the hardware isn't easy to upgrade. The unintended consequences that can arise from such decisions can ultimately affect success.

By building a knowledge foundation while thinking about the big picture, we can expand our view of different situations and ensure that we're taking into account all the important factors before making decisions. This includes examining assumptions about the past, present, and future so that unexpected events don't affect our judgment. This is the basis of *strategic thinking*, which is an attempt to think through the many "what if" scenarios that can

stem from our actions and defeat our best intentions. Such assessment uses key requirements, including a definite purpose, an understanding of the environment, and creativity in developing effective responses to changes.

Obviously, we can't prevent every unintended consequences, but we can create dynamic plans that let us adapt and evolve as we pursue our goals. Such plans can in turn help us get organized and focus on doing the right things in the most effective order. In this sense, strategic thinking is a planning process that applies innovation, strategic planning, and operational planning to the development of business strategies that have a greater chance for success. As an IT manager working in a university environment for more than a decade, I've found that strategic thinking plays a critical role in successful project implementation and management.

## Strategic versus Long-Range Planning

Sometimes, strategic planning can omit the important step of innovative thinking. We might make the mistake of focusing only on stopping something—our only action is a reaction. Instead, we must think, plan, and act strategically by clearly defining goals and objectives from the beginning. *Goals* are something we achieve in the long run, whereas we aim to accomplish our *objectives* more immediately. Consider a project that attempts to address the overall problem of network security (goal): it could lead to a firewall implementation (objective) that brings about a plan to subnet the network systematically via infrastructure design (objective).

Strictly speaking, strategic thinking is a reflective dialogue about the future. We must imagine how events will play out and then devise effective responses.

I still remember what happened when my university started to implement a border firewall almost a decade ago. At the time, the firewall had to fulfill two objectives:

- maintain consistency with a high-availability architecture and
- eliminate single points of failure.

However, budget constraints didn't permit a cluster server implementation. As a result, we had to find a low-cost alternative that didn't significantly compromise either objective. In addition, this solution had to be flexible, scalable, and last for at least five years because changing an enterprise firewall isn't a trivial task.

Without the cluster option, we changed to a combination of disk-to-disk backup with system imaging and a RAID 5 server configuration. This setup offered an inexpensive yet viable way to ensure fast recovery and redundancy and still let us create a full image of the system as frequently as we needed along with a disk-to-disk backup of any images we created. Our implementation proved to be successful, and we're still using it today. We've performed five firewall software upgrades since then, and it takes only six minutes to recover the system when we experience any serious software problems. We keep spare hardware parts in stock for any larger problems.

As this example shows, IT departments should perform analyses and evaluations on projects from their initiation through development, implementation, and estimated cost of operation. They should then review the project periodically or whenever the project undergoes a significant change. Each organization has unique goals, priorities, and budgets, so it should have future plans that account for technological upgrades

and equipment acquisition consistent with these strategies and budgets.

Long-range planning is slightly different because it involves planning for a goal or set of goals over a certain period time—several years, for instance—with the assumption that current knowledge about future conditions is sufficiently reliable to ensure the plan's reliability over the duration of its implementation. Strategic

these circumstances in advance. Over time, IT managers must stay abreast of changes to make the best decisions at any given point, but project managers should also have the knowledge, skills, and experience required to manage the project's scope, complexity, and risk profile. A strong educational background and continuous education are crucial.

Another important factor is the organization's technological en-

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### **Strategic Thinking and Strategic Management**

The risks associated with projects are commonly related to a project's size and duration—larger, more complex projects can take longer and are thus inherently more risky. To combat this, IT managers should reconstitute large projects into sets of smaller, more manageable pieces and coordinate them to ensure continuous improvement.

We describe a process as strategic when it involves preparing the best way to respond to circumstances in the organization's environment, regardless of whether we know

environment: project management culture should be encouraged within IT departments, whereby team members share their experiences and exchange the lessons they've learned. Meetings, workshops, and other training can be organized to fulfill this goal. After all, we can safely assume that new demands will be raised and put forward from time to time.

The training and development of IT professionals should include the following objectives:

- encourage a continuous learning culture,
- facilitate an exchange of information with industry, and
- provide a forum for discussing project planning and management issues with peers.

Team member responsibilities should also be clearly specified. I fully believe a team leader must realize the team's latent strength

to bring out the very best from each member. Trust is the key element—team members can always trust a great leader because that person should be able to turn a bad team into a reputable one. Strategic management keeps an organization relevant, so team members should be encouraged to act as a creative feedback loop on projects. In these dynamic times, you're more likely to succeed this way than if you follow the traditional approach of "if it isn't broken, don't fix it."

To avoid project delays, responsibilities should be clearly defined. IT departments should establish appropriate accountability frameworks if problems aren't resolved promptly, and project managers should allow for different variables, to add a touch of realism.

Ultimately, the purpose of IT projects is to help a business operate more effectively and efficiently, so IT managers and other professionals related to core business functions must communicate and cooperate during the project's overall process to gain the expected benefits. To this end, IT managers shouldn't set tasks beyond their compass: it helps to hold meetings with users to discuss issues, concerns, and plans, especially when the system is first conceived or during reevaluation throughout the project.

**R**egardless of the circumstances, IT managers must be ready for the unexpected. We must understand the top priorities and determine how the

organization's needs and priorities are evolving. But we must also learn to be patient and sensitive to opportunities that could contribute to the way the organization does business.

Although our jobs require us to respond effectively and efficiently to the daily issues that face any network system, we can contribute considerable value to our work by looking outside the box and continuing to suggest creative ways to help shape and improve workplace efficiency. After all, we work in this technological field not because it's easy, but precisely because it's hard. ■

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**USEFUL COMPUTER SECURITY: MAY/JUNE 2008**

Usability is a growing concern in designing systems and applications that operate securely. Although usable security work has focused on improving user interfaces, security is systemic: one person alone can't make a system secure. Negotiating, instituting, and maintaining real-world security procedures and practices is a social activity, and the resulting social protocols often form a key component in enforcing security policy.

**MESH NETWORKING: JULY/AUG 2008**

The growing importance of personal-area, municipal, community, and sensor networks has led to increasing research and development of a broad class of wireless "mesh" network technologies that self-organize ad hoc networks to route data across multiple hops. Mesh networks have the potential to be an easy-to-deploy, low-cost robust networking solution in environments where deploying traditional fixed infrastructure is infeasible or expensive.

**SERVICE MASHUPS: SEPT/OCT 2008**

The Internet and its related technologies have created an interconnected world in which users can easily exchange information, process tasks collaboratively, and form communities to achieve efficiency and improve performance. Service mashups – information sharing and aggregation to support content publishing for new modern Web applications – are important. Designing and developing novel and modern Web applications based on easy to accomplish end-user composition of services becomes paramount.

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