The Role IT Strategy Plays in your Future

How much emphasis should be placed on IT strategy? Business and technology leaders are seeking guidance on this complex question. An IT strategy is extremely important because it defines your target state, allows you to make better funding decisions and helps ensure the long term growth and prosperity of your company.

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Defining the Problem and a Case of Change

Information Technology (IT) has become the heart of practically every successful business in the world. It is the major factor that distinguishes a company from its competition and determines its productivity and efficiency. With more and more advances in technology and more things being automated, an increasingly greater percentage of companies' annual budgets are being allocated to IT. But are companies realizing optimal return for their IT investment and are their systems as efficient and effective as they need to be? Regretfully for most companies, the answer to that question is *no*.

The Current State of Many IT Systems

Most companies react to day-to-day problems, competitors' actions, and government regulations but lack a vision and a strategic plan for evolving their business and IT systems. This is occurring at a time when there are unprecedented demands for business change, rapid advancements in technologies, and IT organizations being asked to do more with smaller budgets. This focus on shorter term business need prevents IT organizations from keeping pace with advancing technologies. Over time the company's systems get older and more complex and the gap between existing and modern architectural concepts and technologies gets wider. As a result a growing percentage of the IT budget is required to operate and maintain existing systems, and development efforts take longer and are more expensive to complete. When the overall IT budget is fixed or shrinking and operational costs are rising, less capital is available for enhanced functionality and modernization. And the downward cycle continues.

Below are several factors that have contributed to the situation many companies find themselves:

> Aging Business Applications - At the core of many IT systems are older purchased or in-house developed applications. These applications have been modified extensively over time by many different people. Quick delivery of functionality was demanded and enhancements were usually completed in the fastest possible way, often compromising sound development practices. Now these older systems are poorly documented, contain a lot of redundant or unused code, and have become overly complex.
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> Mergers and Acquisitions - Many companies have grown through mergers and acquisitions. When this occurs new systems are created by merging the best code and functionality from the individual companies. Again speed was of the essence. This increases the technologies and applications that must be supported, with some being older and/or redundant. Once this complexity and redundancy is added to the combined system, rarely do companies allocate the time and funds to consolidate and eliminate it.

The Impact of Aging and Redundant Technologies and Business Systems

The impact of aging and redundant technologies and business applications is felt by almost everyone within a company. The business organizations begin questioning the value of the IT systems and services they are paying for. They feel that their systems are becoming less reliable and the IT organization is not responsive to their needs. Operating, maintaining, and enhancing these systems has become extremely time consuming and costly, yet the business areas do not fully comprehend the need to fund modernization efforts. IT leaders try to be responsive and provide the highest quality of service, but they are constrained by aging, cumbersome IT infrastructure and applications. The business and IT areas understand the situation they are in, but don't know what to do to resolve it.

Evolving Toward a Target State

An IT strategy and a commitment to evolution are required to produce reliable and efficient IT systems. An IT strategy is an executable plan that clearly illustrates and articulates the desired target state (the makeup and characteristics of the desired IT systems) and provides a roadmap (a plan including actions and investments) required to achieve the target state. An effective IT strategy will define a target state that includes newer and more efficient architectural concepts and technologies.

The benefits of migrating toward modern architectural concepts and technologies are dramatic and ultimately will result in quicker development and lower operating, maintenance, and development costs. This is because the older architectural concepts and technologies were based on large monolithic programs written in languages such as Cobol, Assembler, and RPG. Newer systems are based on modern architectural concepts like Service Oriented Architecture (SOA) and use more current programming languages like Java and C#. The newer architectural concepts are based on programs called services (small single purpose components) that are shared across the enterprise. When fully implemented, a change to a single service will apply the change across the entire enterprise. While this is an extremely simplistic definition of the technology evolution, the benefits result in lower operating and maintenance requirements and quicker and less expensive development projects.

The long term benefits of defining and evolving toward a target state outweighs the costs of developing that strategy. The cost of developing a vision and strategy is primarily the people (architects and strategy experts or strategists) that have their eye toward the future. While there is a considerable cost in evolving your systems, you will be spending money on incremental enhancements whether or not you have a vision and strategy. When you follow a strategy, your investments will be positive steps toward reaching your vision. Without the strategy, your investments will be focused on the short term, acerbate the current situation, and have a limited shelf life.

System Characteristics and Impacts

Below is a detailed look at the characteristics and impacts of the current state in which many companies find themselves contrasted with the target state they wish to achieve.

At the highest level, IT can be viewed as a three legged stool consisting of people, processes, and technologies. The "technologies" leg can be further subdivided into an "infrastructure" layer (generic hardware and software that provides the foundation of your systems and is common across industries) and a "business specific" layer (hardware and software that provides the business functionality specific to a particular industry or company). If any of these legs are unstable, the entire stool is unstable.

Characteristics Table

Layer		Current State	Desired State
Technology	Business Specific applications	Generally includes a combination of older and newer business systems. The older systems were developed using older architectural concepts and programming languages. These aging systems are becoming very complex and costly to operate, maintain, and enhance.	Business systems evolve toward more standard and newer architectural concepts and technologies. These new systems are much more efficient and easier to maintain. Over-time the older systems are phased out.
	Infrastructure	The infrastructure layer must include hardware and software products to support all systems that are in production or being developed. This includes older and newer systems as well as the systems built using different technologies from mergers and acquisitions. This results in a considerable number of products that provide redundant capabilities or are becoming obsolete.	The overall number of technologies is reduced because redundant products are eliminated. The older or obsolete products are replaced by newer more efficient products.
Processes		Many organizations lack adequate standards and procedures. Routine activities are performed inconsistently and errors are frequent.	Corporate-wide and departmental standards and procedures are developed and enforced. Metrics are used to evaluate and enhance processes. Errors are reduced.
People		The operations and development areas must have in-house expertise or vendor support for all the technologies, products and systems. People become vested in the status-quo and are reluctant to change.	The migration to fewer and more standard products and technologies reduces risk and support costs and provides more staffing flexibility. When people are aware of the company's direction toward newer architectural concepts and technologies, they get excited about learning new skills and helping to evolve these systems.

The characteristics defined above have a real impact on a company's bottom line. It may be difficult to quantify the impact, but the impact can definitely be described. The overall result of having and following a strategy should be harmony and effective evolution to your desired target state. Funding incremental changes without a vision will generally result in continued frustration and further deterioration. Below is a more detailed look at individual impacts associated with these characteristics.

Impact Table

Grouping	Current State Impacts	Desired State Impacts
Operating Cost	Annual operating costs are considerably high because of: • The number of redundant products (licensing costs) • The internal staff required to support these products. • Overly complex programs that require more computing power.	Annual operating costs are greatly reduced because: • There are fewer products that need to be supported • More efficient applications require less computing power.
Development Costs	Development takes longer and is more costly because: • More time is required to analyze and enhance code. • Changes often have to be made in multiple places.	Development costs and timeframes are greatly reduced because services are simpler and they impact change across the entire enterprise.
Quality	• More complex systems provide more opportunities for defects to be introduced. • Excessive time is required to identify and correct problems.	Less defects make it into production and errors are easier to identify and correct
Risks	There are many risks associated with older technologies, including: • Products that are no longer supported by vendors. • Difficulty finding staff experienced in the older products and languages.	Risks from obsolete technologies, production defects, people support and project delays are greatly reduced.
Customer Satisfaction	• Too many defects make their way into the production. • More time is required to identify and correct errors.	• Quality is greatly improved because errors are reduced • New functionality is delivered to customers quicker.
Relationships between business and the IT organization	Because of high operating expense, poor quality, and slow response by technology, there is considerable frustration between business and technology areas.	Systems are easier to maintain, quality improves, and the costs for services are reduced. Technology is viewed as being more responsive to business needs.
Progress in Meeting long range Business Objectives	Additional business features and functions are added to the system, but no significant progress is made toward modernization.	While additional business features and functions are developed, there is also incremental progress toward modernization.

How to Develop and Implement a Strategy

In the prior sections we described how aging systems are eating up increasing percentages of company budgets and limiting the company's ability to grow and compete. We also covered the critical role IT strategies play in reversing this trend and allowing companies to realize their optimal profitability and potential. So how is an IT strategy developed? This section discusses the timing and activities involved in developing a strategy.

Timing Options

The strategy process contains initial development, periodic reviews and updates, and ongoing management activities. Don't invest in the initial development unless you plan keeping it current and using it on a continuous basis to guide your decisions. Successful companies view strategic planning as repetitive and ongoing activities that are an integral part of management processes.

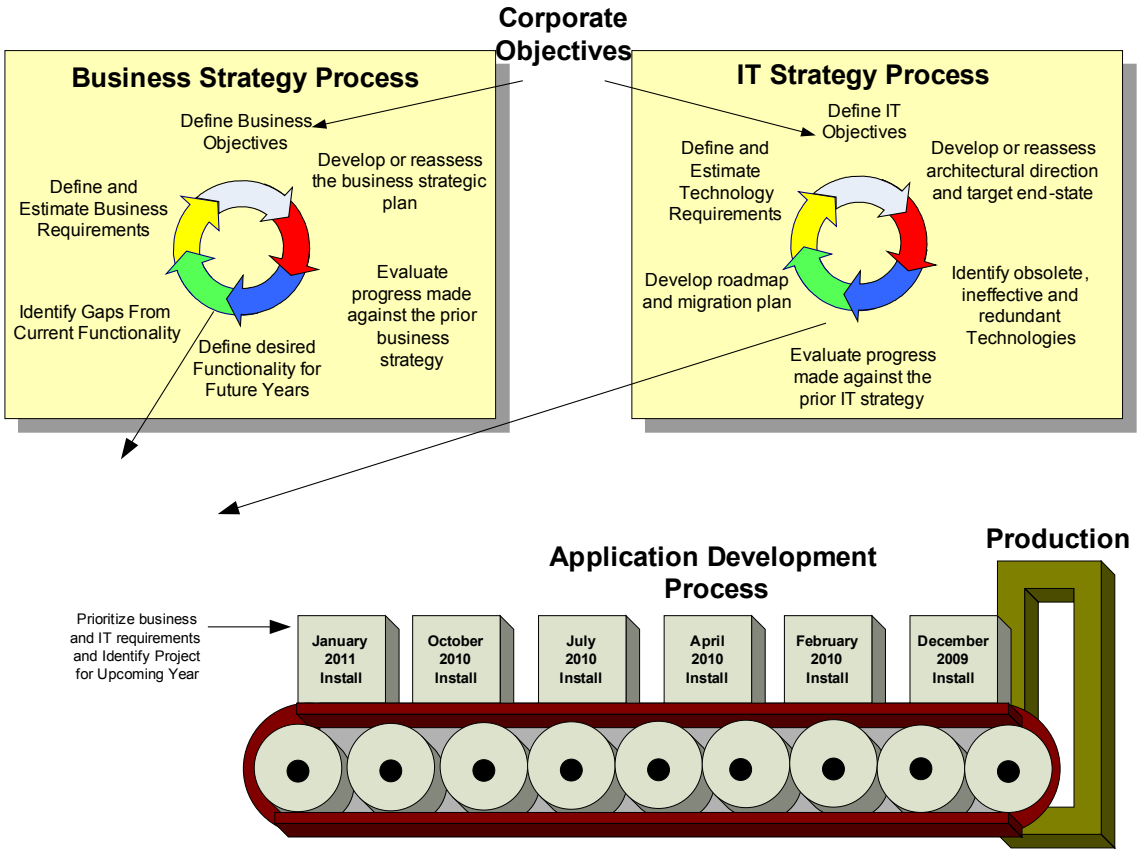
Initial Development - An effective strategy should include a definition of an ideal state that would optimally support your business, but the focus should be a target state that can realistically be achieved in a given timeframe (e.g. 5 years in the future). It may take a considerable amount of time and effort to develop the initial version.

Periodic Reviews and Updates – The strategy should not be considered a one-time event. It is a journey that should be reviewed and revised along the way. Because technologies, regulations and your competition are always evolving, you must always be re-planning and adjusting your strategy. Some companies create a 5 year strategy and reevaluate and rebuild that strategy every two years.

Ongoing Management Activities - There are also ongoing activities. For example, C-Level executives should use the strategic plan to define annual goals and reconcile accomplishments for the prior year back to the strategic objectives. On an annual basis development planning for the upcoming year will occur. This planning activity should review the strategy roadmap and determine which requirements will be developed in which projects. Unexpected projects will also be started and depending on the urgency, could also include business and/or technical requirements.

Business and Technology Strategy Development

Because the business and technology views are radically different, it is easier to have separate but complimentary and overlapping strategy development efforts. The business strategy concentrates on the direction of the company and identifies the business features (business requirements) required to support that direction. The technology strategy focuses on the age, complexity and effectiveness of the current technology. It identifies technical enhancements (technical requirements) required to maintain efficiency and effectiveness and to support the business direction. The following diagram illustrates the separate business and technology strategy efforts. It also shows the outputs from these efforts (the business and technical requirements) going through a prioritization and scheduling effort before being processed in the "Application Development Process" (where the requirements are developed and installed into production).



The business and technology strategies can be developed in parallel, but there must be cooperation and interaction between the business and technology areas through-out. Below are more detailed descriptions of the strategy development efforts and the required interaction between business and technology areas.

The Business Strategy – The business strategy determines the functionality needed for the company to grow and prosper. It identifies gaps between the current and needed functionality and defines the actions required to close the gaps. With the help of the technology team, the optimum approach for satisfying these requirements is determined, the efforts are sized, and cost estimates are produced.

The Technology Strategy - The people developing the technology strategy must have a solid understanding of the direction IT is evolving to, including the newer and more effective technologies and architectural concepts (e.g. Service Oriented Architecture) that are being used. In addition, they must know which of the current technologies are redundant or are becoming obsolete and have a plan for migrating away from them. The process of developing the technology strategy is similar to the business strategy, which involves defining gaps, requirements to satisfy those gaps, approaches and cost estimates.

Interaction between Business and Technology – It is extremely wise to have the technology group support the business in developing the business strategy. Older systems are not generally well documented and the business area does not have an adequate understanding of the systems to develop the strategy alone. The technology group will help define the gaps and business requirements and identify options and estimates. The age, complexity, and effectiveness of the current systems should be considered in defining options. Evolution of the technology without an understanding of the business functionality doesn't make sense. You would not want to invest in technologies that support functions that are low usage or may become extinct. The technology was built to support the business, and the business area generally controls the funding. The business area needs to understand the IT strategy, the evolution plan, and the payback for their investment. The payback will not be immediate, but over time it will definitely impact quality, costs, development timeframes, and future ability to adapt and compete.

Prioritization, Governance and the Application Development Process

Project planning is an annual activity that determines the project workload for the upcoming year. The strategy documents make this effort easier and more structured with better development plan. During the strategy process a considerable number of business and technical requirements with approaches and cost estimates were developed. Also included was a roadmap showing proposed development timeframes. Armed with this information and information on available funding the Governance Board should finalize the development plans. The Governance board should have representation from both the business area and the technology areas. Most decisions will be easy, but when disagreements occur, they should be escalated to the appropriate level of management. Progress toward the target end state may be slow or fast based on business need and the available funding and resources.

Communicating Your Vision and Getting People Involved

Once you have a clear vision and direction it is important to educate your people and get them on board. As stated in the Impacts Table, if your people understand the vision and are excited about the future, they will speed your progress toward that target state.

> "Take away my people, but leave my factories, and soon grass will grow on the factory floors. Take away my factories, but leave my people, and soon we will have a new and better factory." *Andrew Carnegie*

Summary

When technology advancement and business change compete for limited funding, technology advances generally lose out. Over time the company's systems get older and more complex and the gap between existing and modern architectural concepts and technologies gets wider. As a result a growing percentage of the IT budget is required to operate and maintain existing systems, and development efforts take longer and are more expensive. The developmental efforts that are funded could also be incremental steps toward the target state. The benefits of having a vision and working toward that vision are undeniable, but you need that vision. An effective strategy includes both business and technology involvement.

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