

access to an application from a centrally managed facility. Among applications wholly delivered by a provider one can recognize the following:

- Enterprise ASP: ERP, SCM, CRM, e-business;
- Collaborative ASP: e-mail, groupware, conferencing;
- Personal ASP: end-user computing and consumer applications.

Among ASP's benefits one can mention rapid deployment and access to state of the art solutions. ASP's essentially host and manage software for companies and provide technical support for that software. Companies may save money with an ASP by avoiding the purchase of copies of software and periodic upgrades for every computer in the office and by reducing the need to train technical staff to maintain the systems. ASP's reduce the total cost of ownership for applications by 30% to 70% (Mark Hall, www.computerworld.com).

Among ASP's risks it is possible to perceive flawed execution, ASP's low knowledge about organization issues of a given company, its personnel turnover and even the disappearance of a service provider. According to the Gartner Group's report, 65% of ASP's (out of 480) bankrupted in 2000.

Perhaps the simple applications service providers will win the market's acceptance, and the complex ones may cause many problems on both sides of the service contract. The users cannot be misled that ASP's will solve all their IT problems; for on the contrary, they may even create more problems for them.

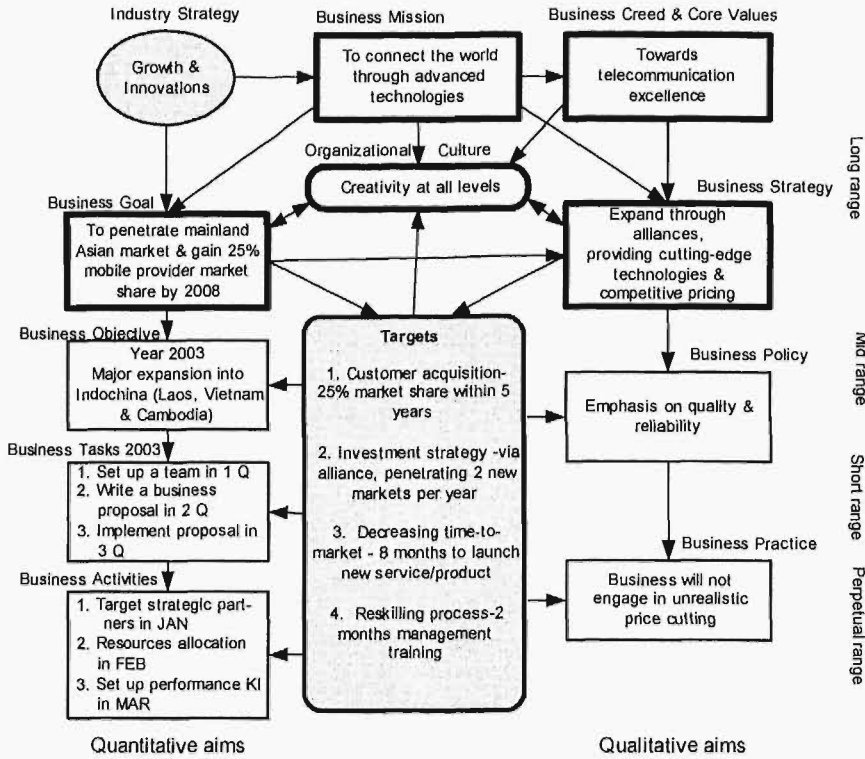
After reviewing an IT office's role in an enterprise organization and in increasing its productivity and effectiveness as well as after looking at IT management trends, let's analyze the central issue of how to integrate business and IT strategies, in the following section.

BUSINESS AND IT STRATEGIES INTEGRATION

Business Aims

If a company does not have well-defined business goals and strategy, then the formulation of IT aims may be difficult. Figure 8-6 illustrates a set of business aims for a telecommunication company².

Figure 8-6: The Network of Singtel Business Aims



Collins and Popras (1997) state that companies that are built to last have strong core ideology which is composed of **core values and purpose** (mission statement). Core values are organizations' essential and enduring tenets, not to be compromised for financial gain or short-term expediency. For example, core ideologies in the visionary companies are as follows:

- IBM:
 - Give full consideration to the individual employee
 - Spend a lot of time making consumer happy
 - Go the last mile to do things right; seek superiority in all we undertake
- Procter & Gamble:
 - Product excellence
 - Continuous self-improvement

- Honesty and fairness
- Respect and concern for the individual

Very often core values can be expressed under a form of a **company creed**; e.g., Ford's creed is "Quality is job #1."

Among core values one can recognize (after Collins and Porras, 1997) management approaches towards "*building a clock or time telling*." Most visionary companies are "clock builders" which are *built to last* and tell the time all the time. Among such companies one can perceive: Ford, IBM, Wal-Mart, HP, 3M, Sony, Procter & Gamble, Merck, and others. They are not pursuing one big idea, but step by step they develop and improve their own organization's might.

Core values also reflect management philosophy which is exemplified as a given management style. Visionary companies which have been transforming from good to great ones apply, according to Collins (2002), Level 5 leadership. At this level³, an executive builds enduring greatness through a paradoxical blend of personal humility and professional will. Such leaders replace their own egos by the larger goal of building a great company. Among such leaders one can mention: Abraham Lincoln, Colman Mockler (Gillette), Darwin E. Smith (Kimberly-Clark), and others.

Another management philosophy of visionary companies moving from good-to-great is first to get the right team of people (Who) and then figure Where to go with business. One "genius" with helpers cannot do it; everything falls when he/she departs.

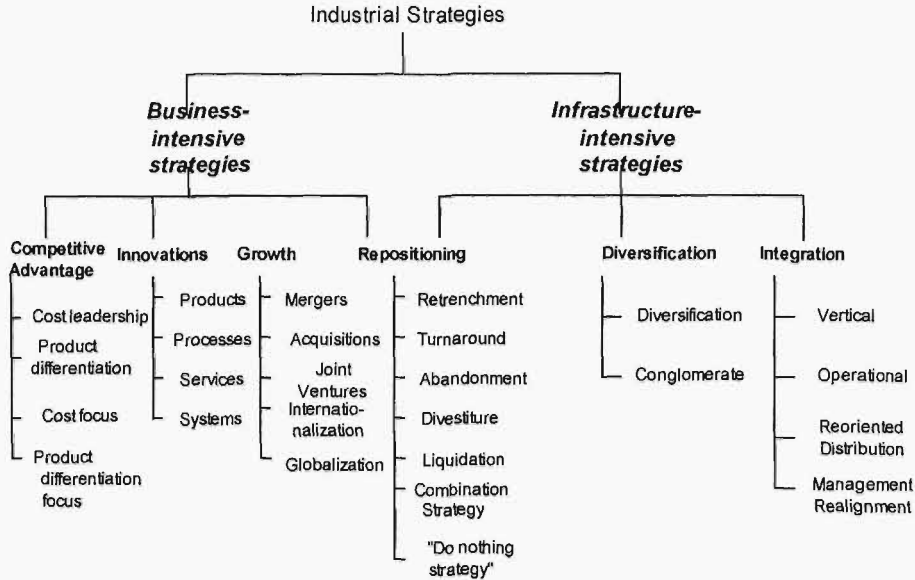
BUSINESS AIMS

A **mission statement** is the set of reasons for a company being in a given business. 3M's mission is "To solve problems innovatively." Walt Disney's mission is "To make people happy." Merck's mission statement is "To preserve and improve human life."

An **industrial strategy** is a prevailing strategy in a given whole sector of the economy. This type of a strategy influences a given company's business strategy. Figure 8-7 illustrates a classification of industrial strategies.

A **business goal** is a long-term aim looking for an expected company's performance within 2-5 years ahead. A firm should have a clear and compelling measurable goal. For example, General Electric's goal is "Become #1 or #2

Figure 8-7: The Classification of Industrial Strategies



in every market we serve and revolutionize this company to have the speed and agility of a small company.”

A business strategy. The concept of business strategy is broad and is the subject of the capstone class in any business curriculum. A business strategy is a plan for how to accomplish a business goal. Napoleon said that “a strategy is a simple act of execution.”

Visionary companies based their strategies on *ala* Hedgehog simplicity⁴ within three circles: 1) What you are deeply passionate about (Gillette’s passion for shaving systems’ simplicity), 2) What you can be the best in the world at (Circuit City’s 4S model: service, selection, savings, satisfaction), 3) What drives your economic engine (Wells Fargo’s stripped-down branches and ATM’s) (Collins, 2002).

Organizational culture is a value-driven pattern of employees and management’s behavior within a company. For example, Hewlett-Packard’s culture is “The HP Way.” Walt-Mart’s culture is “fanatical dedication to its customers.” Marriott’s culture is “dedication-to-service atmosphere.”

To develop a great strategy, a firm must possess a supportive culture. Visionary companies moving from good-to-great have the ability to *confront the brutal facts*. To know even brutal facts is better than to dream. When

Kroger found that it was losing its market share (1959-1973), it began to confront the brutal facts and started to transform its stores into superstores. Through some experiments, Kroger had found that a classic grocery store (100% of Kroger's stores) was extinct. It was a brutal fact that led to the company's successful transformation into a chain of superstores. A twice bigger competitor, A&P, could not face the brutal facts and lost its market share (Collins, 2002). In 2000, similar crisis began affecting the K-mart company, which cannot face the brutal facts and transform into solutions that could allow it to compete with Wal-Mart.

Visionary companies are famous for developing a culture of discipline. The good-to-great companies built a consistent system with clear constraints, but also gave people freedom and responsibility within the framework of that culture. They hired self-disciplined people who didn't need to manage, and then managed the system, not the people. Examples of such culture are at Circuit City and McDonald's, where people can contribute, but at the same time they have to comply with the system's policy and the Hedgehog concept (Collins, 2003).

A **business policy** is a set of rules for how to go about in certain situations. For example, Nordstrom's policy is "Use your good judgment in all situations. There will be no additional rules."

Business targets are key indicators of a balance scorecard, organized by four perspectives: financial, customer, operations, and innovation. Selected targets should exemplify business aims (including short-term objectives – below one year) and operations of business processes, such as tasks and activities.

A **business task** is a short-term operation of a business process that exemplifies how a business objective can be accomplished. It is a measurable operation carried out within a quarter.

A **business activity** is a short-term operation of a business process that exemplifies how a business task can be accomplished. It is a measurable operation carried out within a period shorter than a quarter.

In planning business aims it is necessary to recognize the long-term ones; however, to go beyond generalization, it can be useful to provide examples of mid-term and short-term aims. Of course such exemplification is limited, but it provides some awareness about current issues and challenges.

Once business aims have been defined, one can pass to the planning of IT aims.

IT Aims

The network of IT aims is depicted in Figure 8-8. The IT aims guide the performance of the IT function and locate it among other business functions. In practice, IT aims are usually reduced to a concept of a strategy or objectives, while the IT aims network indicates that there are 14 types of aims and each one has its own merit.

Until we explain each aim's role, one must notice major aims categories and specific relationships among them. On the left of the network there are quantitative aims and on the opposite side there are qualitative aims. The former's accomplishments can be measured, while the latter's serve as a guide for actions. The IT aims are guided by business aims and this relationship is the most important one, since it justifies the reason for the IT organization's existence.

It is important to observe that an IT strategy is a plan about how to accomplish an IT goal. Without correct goals there is no right strategy. These aims function if the right organizational culture and undertakings are in position, supporting a planned IT paradigm, which will define the whole scope of issues associated with the development of IT solutions, knowledge and skills.

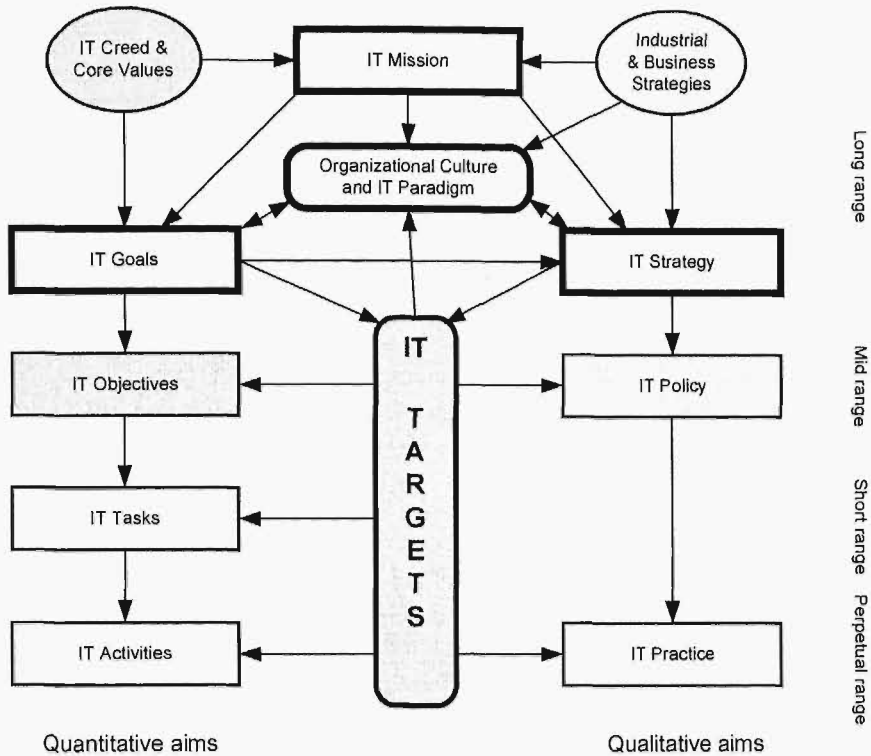
Once long range aims are defined, one can formulate IT targets that are measured key indicators, controlling an organization's performance at all levels of IT management.

Technology as an agent of change is nothing new. The strategic issue is not, what is the role of IT? Rather, the issue is how IT contributes to good-to-great companies that treat IT *differently*. Good-to-great companies apply technology as the change accelerator, not as a creator of momentum (*clock builder*). Circuit City pioneered application of IT to increase denominator for profit per employee. It was not a leader in pharmaceutical R&D—leaving that to Merck, Pfizer, and others that had a different Hedgehog Concept. Walgreen pioneered application of satellite communication to tailor uniqueness of a specific store as a convenient corner drugstore. In such a manner, a company became a giant web of a single corner pharmacy, leading the rest of the industry by at least a decade. Kroger was first in the application of scanners and linked them with the entire cash-flow-cycle, obtaining a competitive advantage in the whole industry at the beginning of the 1980's (Collins, 2003).

Good-to-great companies apply IT in a following manner (Collins, 2003):

- Think differently about technology than their competition,
- Select IT applications carefully,

Figure 8-8: The Network of IT Aims



- If the IT solution fits well into the Hedgehog concept, then the IT solution should be at the level of pioneers; otherwise set for parity or ignore it entirely,
- IT should be a change accelerator, not a creator of momentum,
- Respond to IT with thoughtfulness and creativity, driven by a compulsion to turn unrealized potential into results,

Mediocre companies react to IT by fear and they are left behind.

IT Mission

An IT mission should explain the reason for the IT's existence (*raison d'être*). The IT mission should reflect a given company's business strategy's directions and intentions. It can be structured as follows:

Part I IT's Core Mission, one can recognize three classic missions:

- "IT *supports* core enterprise operations" (e.g., CAD); or
- "IT *fulfills* enterprise operations" (e.g., high volume print of documents such as account statements); or
- "IT is a *strategic* core function of an enterprise" (e.g., customer order application at www.amazon.com).

Part II IT's Supportive Mission:

- E.g., "Automate workers' routines and informate executive judgment."

The IT core mission should be short and clear, emphasizing its role in a business' operations. This role can be supportive, or fulfilling, or strategic. The second part of the IT mission can provide directions at the levels below business critical operations. In the provided example IT aims at the issue of what to automate and informate

IT Creed

An IT creed is a philosophy guiding IT operations and workers. It should be a simple, catchy slogan such as "Information is Power," "Information Unlimited," "Friendly Computing," "Beat the System," "Be There," "Quality Data," or "Information Culture." Of course, there should be some relationship between a business creed and an IT creed. For example, if Ford Corporation's creed is "Quality Job no. 1," then its IT organization could apply an IT creed: "Quality Information is Job no. 1."

IT Culture

A human culture is very important for the process of implementing IT aims. We have already discussed issues about how to set up the IT strategy-supportive culture. Very talented professionals usually work in IT organizations and they cannot be managed by a "police" style control of their activities. The right style in IT is management by a culture, which motivates workers to high performance.

IT Paradigms

A paradigm, according to Kuhn (1970), is "a pattern," "model," or "accepted example" of current practice, which includes law, theory, applica-

tion and instrumentation together. Barker (1985) gives a different definition. He describes a paradigm as a set of rules and regulations that (1) describes boundaries and (2) tells you what to do to be successful within those boundaries. A paradigm shift occurs when the “rules” change and therefore the means of success change also.

In IT development, a shift of paradigm introduces new rules (“era”) of development. However, in some case, two or more paradigms can exist coincidentally, since IT grows at a very fast pace. One can recognize the following paradigms in the last 50 years⁵:

- Off line intra-enterprise paradigm (1950’s) – punch cards and automated routine processing;
- On-line intra-enterprise paradigm (1960’s-1970’s) – remote-networked processing;
- Integrated intra-enterprise paradigm (1980’s) – ERP with common database processing;
- Agile inter-enterprise paradigm (1992’s) – computer-integrated operation processing;
- Communicated inter-enterprise paradigm (1995’s) – the Internet-based processing;
- Virtual inter-enterprise paradigm (1996’s) – cyberspace office and remote processing;
- Informed inter-enterprise paradigm (1998’s) – portal and data mining processing;
- Electronic inter-enterprise paradigm (2000’s) – Web-based integration of all processing;
- Mobile inter-enterprise paradigm (2001’s) – wireless-based handheld devices access.



The next enterprise level of development includes the previous enterprise level’s solutions being either intact, improved, or replaced. Each level of the

enterprise development requires new IT professional knowledge and skills. Furthermore, it also requires a new approach to IT strategy. Companies which feel that their IT staff is not up to a new IT paradigm very often seek outsourcing and ASP services.

The relationships between IT paradigms and missions are illustrated in Table 8-2.

Table 8-2: The Relationships Between IT Paradigms and Missions

PARADIGM	SUPPORTIVE MISSION	FULFILLMENT MISSION	AA Soft. org STRATEGIC MISSION
Off-line intra-enterprise	X	X	
On-line intra-enterprise	X	X	
Integrated intra-enterprise		X	
Agile inter-enterprise paradigm		X	X
Informed inter-enterprise		X	X
Communicated inter-enterprise	X	X	
Mobile inter-enterprise	X	X	
Electronic inter-enterprise			X
Virtual inter-enterprise			X

Competitive Advantage

Table 8-2 helps to understand how a business strategy's direction is translated into IT's directions. For example, if a business strategy perceives IT as a supportive function only, then a CIO has only three options to pursue: off-line enterprise or on-line enterprise or communicated enterprise. In the 21st century this CIO probably will choose the communicated enterprise option. As such, it shapes the IT solutions and its budget.

The business strategy, which perceives the IT function as a strategic one, provides for the CIO a set of four paradigm options to choose from: agile inter-enterprise, virtual inter-enterprise, informed inter-enterprise, and electronic inter-enterprise. Depending upon the kind of an industrial sector, certain paradigms can be easily eliminated. For example, for the banking sector the agile and virtual enterprise paradigms are not right. Then the choice is between the two remaining paradigms and will depend upon the existing culture and management priorities as well as on the available budget.

IT Goals

Goals are long-term aims in a horizon range of two to five years and they serve as a mechanism to evaluate the organization's performance. A goal is an

end towards which managers lead the organization and its business units. “Goals” are very often confused with “objectives,” which are mid-range-oriented, in a range below one year. A goal is an aim that differentiates an organization from an undirected crowd of people.

IT goals should be compatible with the chosen IT paradigm; their examples are illustrated in Table 8-3.

Table 8-3: Examples of IT Goals Driven by IT Paradigm

PARADIGM	Examples of IT Goals
Off-line enterprise	Switch from hand design to the CATIA CAD system within 16 months
On-line enterprise	Provide remote monitors for every office worker within 2 years
Integrated enterprise	Implement IBM DB2 database for 8 Peoplesoft ERP applications within 2.5 years
Informed enterprise	Implement IBM Datawarehouse and Data Mining software within 16 months
Agile enterprise	Implement the IBM CIM package for Glenn Plant within 2 years
Communicated enterprise	Implement the Extranet for all of a company's stakeholders within 16 months
Mobile enterprise	Implement Wireless Application Protocol-based server within 2 years
Electronic enterprise	Implement e-enterprise within 3 years
Virtual enterprise	Implement Lotus Notes groupware for all R&D workers within 16 months

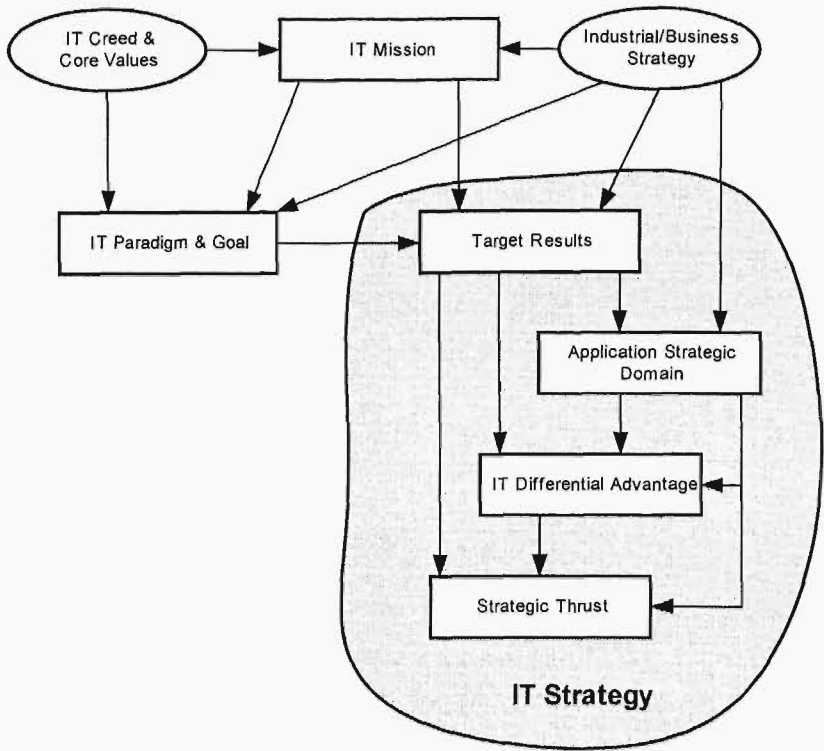
IT Strategy

An IT strategy is a plan about how to implement IT goals. Napoleon once said, “Strategy is a simple act of execution.” Perhaps for him. To better define the IT strategy components let’s take look at its model in Figure 8-9. The IT strategy model is composed of the following choices:

- *Target Results* which translate the strategy into action;
- *Application Strategic Domain* which sets the developmental direction;
- *IT Differential Advantage* which puts a company in the competitive position;
- *Strategic Thrust* which defines the transition steps from the previous to the next stage of IT development.

Let’s examine each of the above choices that constitute an IT strategy.

Figure 8-9: A Model of IT Strategy



IT Targets

The IT strategy has to be explained in a language of measured key indicators; for example, defined within the framework of the *balanced scorecard* (Kaplan and Norton, 1996). The balanced scorecard translates mission, goals, and strategy into four different perspectives: financial, customer, internal business process, and learning and growth.

Based upon existing industrial practice (Table 8-1) the IT balanced scorecard is presented in Table 8-4.

The selection of IT targets and their values is subjective and depends upon a company's business and IT aims. The balanced scorecard will influence the choices for the remaining components of the IT strategy.

Application Strategic Domain

The selection of application strategic domain should be coordinated with the IT paradigm and goals as well as with the targets. Table 8-5 illustrates a matrix of seven IT paradigms and four main business strategies. Cross-sections of the table list recommended strategic domains of applications⁶. Of course these domains are only some examples of theoretical directions that can be different in every specific case.

Table 8-4: The Example of the IT Balanced Scorecard

KEY INDICATORS	PERSPECTIVES			
	FINANCIAL	CUSTOMER	INTERNAL BUSINESS	INNOVATION, LEARNING & GROWTH
F1. IT budget as percentage of projected revenues	X%			
F2. IT spending per employee	\$Y			
F3. Profits from e-business operations	Z%			
F4. Income from IT services to other firms	W%			
F5. Share of IT budget for IT services and outsourcing	A%			
F6. Share of IT budget for salaries and benefits	B%			
C1. Inquiries handled electronically, without intervention		C%		
C2. Percentage of customers included in supply chain		D%		
B1. Suppliers included in e-SCM			E%	
B2. Portion of workweek IT executives meet with line-of-business and departmental managers			F%	
V1. Share of IT budget for research and development				G%
V2. Share of IT budget for new products and technology				H%
V3. Portion of knowledge workers using intelligence tools				L%

Table 8-5: The Selection of Application Strategic Domain

Business Strategies		IT Paradigms								
		Off-line Enterprise	On-line Enterprise	Integrated Enterprise	Agile Enterprise	Informated Enterprise	Communicated Enterprise	Mobile Enterprise	Electronic Enterprise	Virtual Enterprise
Competitive Advantage	Differentiation	EPM	CAM	SCM	CAD CAM	KMS eDOC	WFS	WAP	eBiz	EIP
	Focus									
Innovations		CAD	CAD EUC	CAD	CAD CAM	KMS WFS	WFS	WAP	WFS	WFS
Growth		TPS	TPS	ERP	CAD CAM	KMS	eDMS	WAP	eBiz	SCM
Alliance	Repositioning			ERP	CAD CAM	KMS	WFS	WAP	B2B	WFS
	Diversification									
	Integration									

IT Differential Advantage

If the IT organization is to continue to attract a company's business units and their management, it must perform certain functions within industry practice with distinction. Rapid deployment of applications, a sophisticated matrix of applications, a low information processing cost, better user friendly software, and better information quality can all serve to differentiate a particular IT organization from the industrial pack.

IT management may choose the right differential advantage by choosing between in-house and outsourcing of the planning, development, maintenance, information, data and network centers' services. By focusing on all or part of these centers it is possible to implement expected solutions.

Strategic Thrust

This consideration steers a course between strategic moves that are either too aggressive or too passive. Examples of application-intensive and business-intensive strategic thrusts are as follows: