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diagram

*Consultant. Risto Launo
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UNIDO TRAINING MANUAL

**How to create information support
for a company
to develop competitiveness**

"Fortune favors a company with absorptive capacity"

The Information Superhighway: A new synergistic view of the world

Changing society

Society is developing into the global information society. Social, economic and cultural factors have great impact on this development. It is necessary to extend the benefits of the global, synergistic society to both "have" and "have-not" countries. Governments world-wide are examining ways of reducing costs and improving service delivery through effective and innovative use of online information technology. It is important to establish procedures for conducting electronic administrative business between governments, companies and citizens.

Changing organizations

Organizations throughout the world are changing rapidly, due to the extensive use of new technologies. The rapid growth of Internet, electronic networking systems such as EDI-systems, the penetration of ISDN-based applications have demonstrated the enormous potential of new global networking possibilities.

The use of networks has brought about new ways of working and has made teleworking possible. In these fast-changing organizations, one can already see the virtual organizations emerge. It is possible to conduct electronic administrative business with partners, competitors and customers.

Changing technology

The vast changes in information technology and telecommunications have a large impact on society as a whole. Telematics, the use of multimedia, the use of interactive communication through computer networks have led to a new world in cyberspace, parallel to our physical world, a new reality, which we could call "virtual reality".

Information infrastructures are to connect people to one another and a vast array of information through the integration of and synergy between technology, human, financial information and other resources, policies and standards.

Information and the information superhighway

Information enables businesses, institutions and people to better achieve their profit or not for-profit objectives. Existing digitalised information becomes a large distributed virtual collection of the knowledge of mankind, available to the public that travels the information superhighway.

The information society lead to a greater need for education: this can be addressed by improved language learning and increased understanding between information, knowledge and communication professionals. It also has an effect on the information professional: the new information infrastructure calls for a different training. Multifunctional and crossfunctional training will address this need.

GOAL AND STRATEGY OF THE MANUAL

The **goal** of the Manual is to train the trainers of the information area from various countries. The trainers are going to teach information specialists in their own countries, in the area of different industrial branches and companies about the latest developments in the information field. The goal is also to create synergy between information specialists and further the international understanding, networking and global contacts. As our civilization moves more and more from the industrial age towards the information age with its virtual organizations, these ideals will become even increasingly vital.

The **strategy** to attain this goal is to use many different types of training methods which both give the knowledge about the latest developments in the information field and also activate the participants in using different working methods.

TRAINING METHODS

The training program can be organized by face-to-face training or by electronic media by using Internet network and electronic mail.

The methods used in face-to-face training program are:

- ◆ Lecturing
- ◆ Working in teams on a certain project
- ◆ Participants' own presentations on a subject that has been given to each participant before the seminar
- ◆ Workshops
- ◆ Working in computer classes
- ◆ Training exercises

The use of Internet network provides flexibility of time and distance. It allows the participants to learn virtually anywhere in the world at any time that suits them. There are several actors in this kind of training. Learners are supported by tutors and other students. The learners need on-going technical and pedagogical support in the telematic environment. From the learners' perspective the major advantage of telelearning is that it provides more flexibility in time, and place than classroom courses. The major disadvantage of telelearning is its lack of personal contact. It requires a high learning motivation. The learners have to self-organize the learning process and they have to learn how to use new learning technologies.

This is why the best way to train is to combine these two methods. The best result are achieved by using face-to-face training to go through all the topics and by using e-mail and other training possibilities of Internet to support learners in their individual training projects. Remote tutoring via e-mail has proved to be very effective and highly accepted by learners.

VISITS

- ◆ Presentation from the Information Manager or the Information Resources Director concerning the Information Service
 - ◆ Questions and discussion
 - ◆ Tour to the Company and Information Service
-
-

CASE STUDIES

Working in groups with cases of industry federations and large and small and medium-sized companies

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1. INDUSTRY WORLDWIDE AND ITS INFORMATION SUPPORT

The techno-industrial system has entered a new age, that of information and communication and synergy between them.

The transition to this new era brings in its wake major industrial and also economic and social challenges.

The successful accomplishment of this transition requires a fresh equilibrium between the private and public sector.

1.1 Future Global Trends in ... Industry

THE TRENDS IN INDUSTRY AND ECONOMY

- ◆ The need for information increases
- ◆ Business is international and global
- ◆ Focus on new geographical areas
- ◆ Organizations decentralized
- ◆ Business towards shorter-term focus
- ◆ Focus on core matters
- ◆ Cooperation and cost-effectiveness increasing
- ◆ Lifelong learning

1.2 View of the ... Industry in a ... Country and Presentation of the Companies in the Field

1.3 Individual/Organizational Presentations

1.4 Presentation of UNIDO and INTIB Network

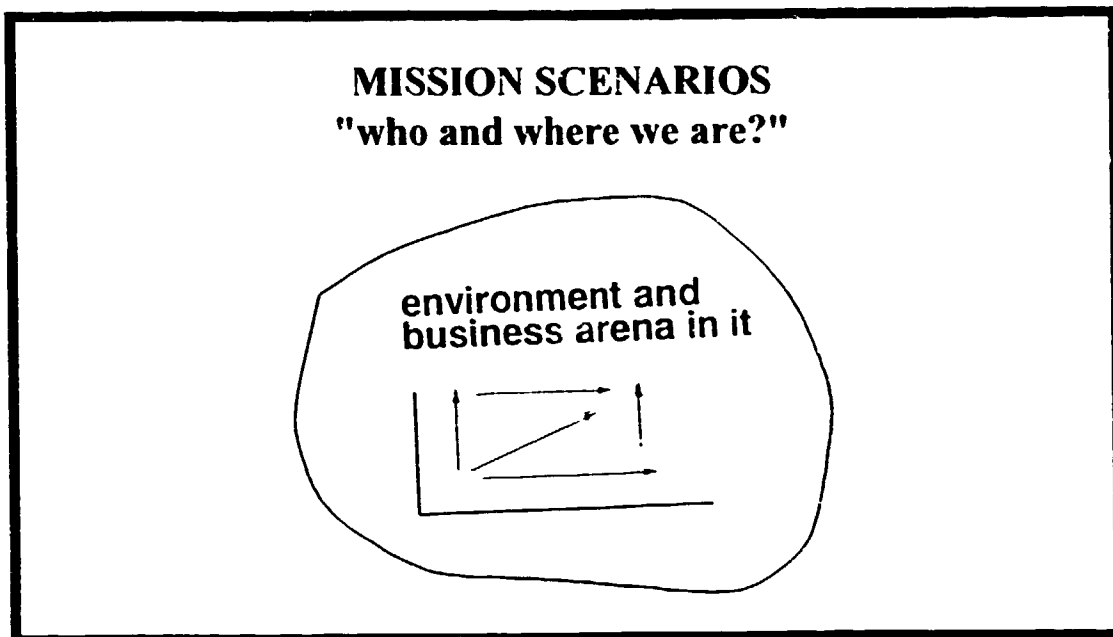
2. PROCESSES AND RE-ENGINEERING

2.1 Understanding your Business

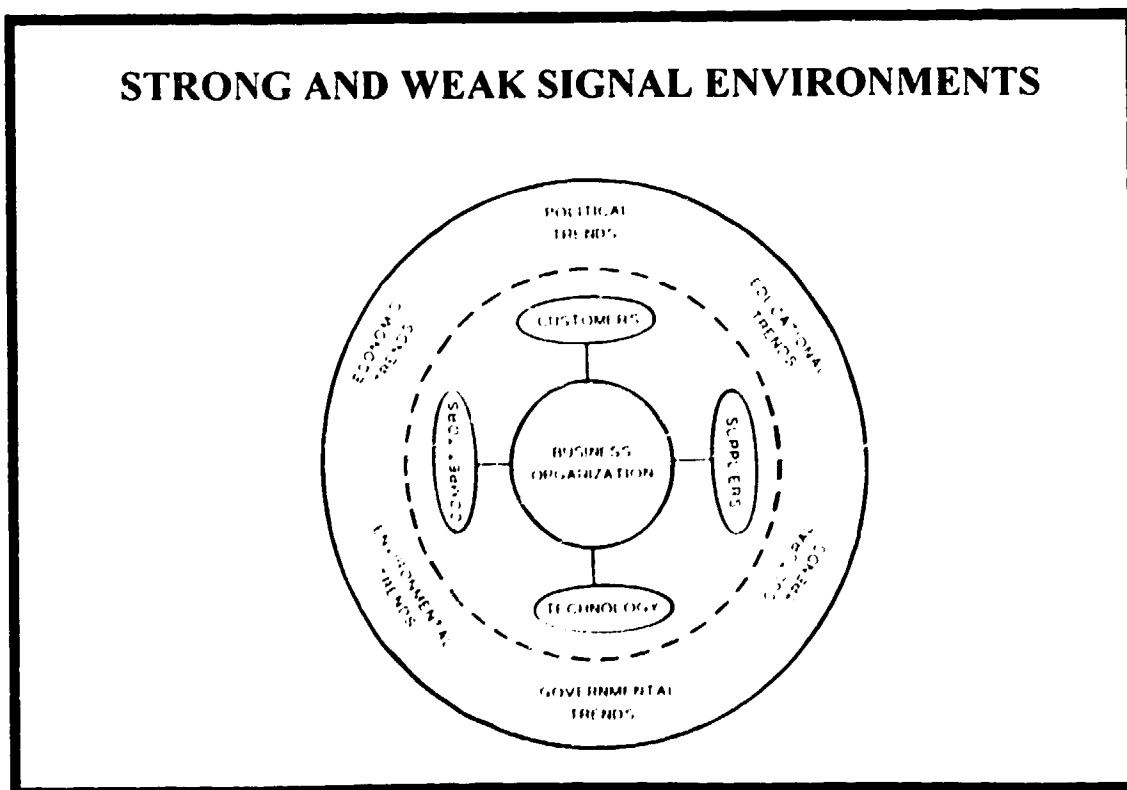
It is critical for your work in your information functions to understand the business your company is in. To check your understanding please answer the following questions:

- ◆ Who are your customers?
- ◆ How does your organization listen to the customers?
- ◆ How has it reorganized its operations to serve customers better?
- ◆ What kind of relationship does your organization have with industry regulations?
- ◆ How does it communicate its concerns and ideas to them?
- ◆ What do the owners expect from the organization?
- ◆ Who are your suppliers?
- ◆ Is the number of suppliers you use falling?
- ◆ How do you think suppliers regard your organization?
- ◆ How do you communicate with suppliers?
- ◆ How are changes and results communicated to employees?
- ◆ How are their ideas for performance improvement gathered and implemented?
- ◆ Who else should you be listening to?
- ◆ Does your organization have rigid organizational structure? If so, how does it ensure that the product or service you provide gives the best returns?
- ◆ Are business goals and targets set for individual functions?
- ◆ Is competition between functions intense to the point of unhealthiness?
- ◆ Does your organization have a mission statement? If so, is it widely understood, acted on, and does it involve all your constituencies?
- ◆ Do you have a job description? If so, how does it help you to deliver a better service to internal and external customers?
- ◆ Why is your organization in business?
- ◆ How would you sum up how your organization thinks it can be, or is, successful?
- ◆ On how many occasions has your organization reorganized or restructured its operations?
- ◆ Did it succeed the last time it was reorganized?
- ◆ How many performance improvement initiatives does your organization have underway?

One key factor in competition is the environment. We don't need to know only who we are but also where we are.

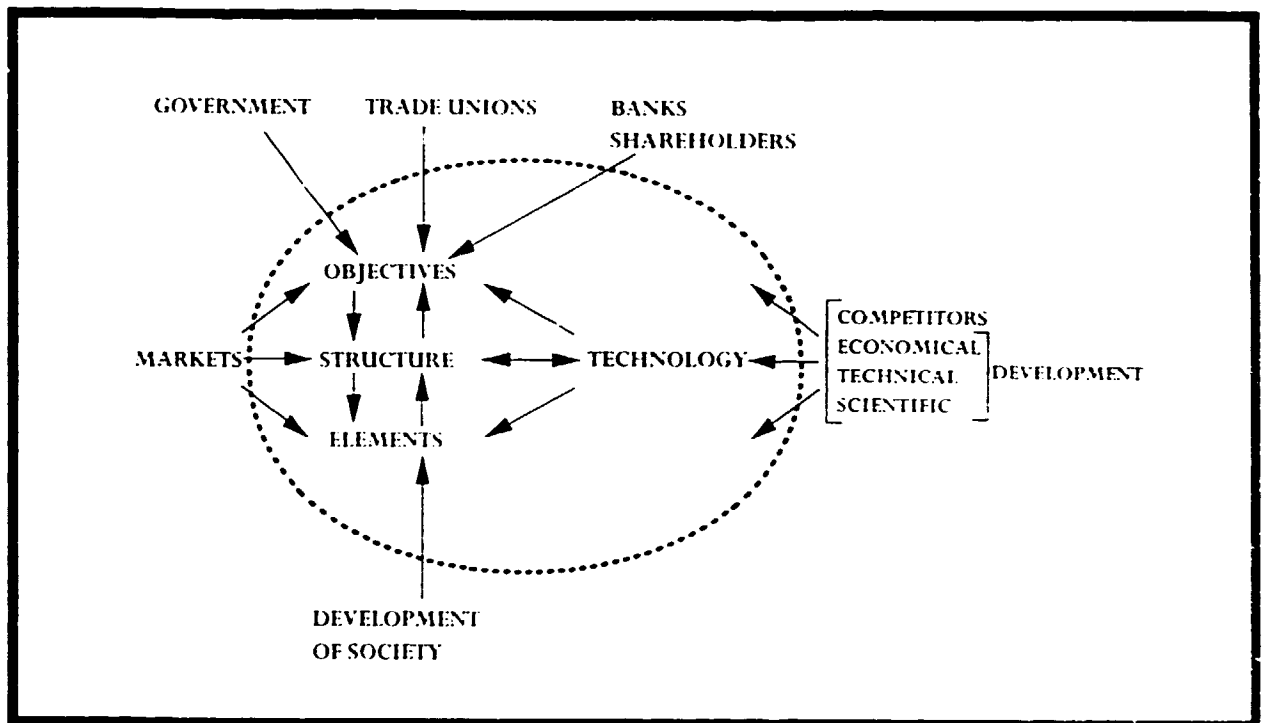


The business environment is divided in two areas. The inner circle contains customers, competitors, suppliers and technology. This circle gives most of the strong signals. In the outer circle there are the signals coming from the surrounding society. It is essential to the business to be able to analyze both the strong and weak signals and see how they influence the future.



The environment has changed dramatically concerning technology. Internationalization is one major change as well as new expectations of customers. Product life cycles have become shorter and shorter which means that also the competence needed for the products becomes obsolete at the same speed. And organization must be able to create and purchase new information as well as new competence continuously.

The next figure shows the factors that influence a company.



2.2 Re-engineering, Processes and Quality

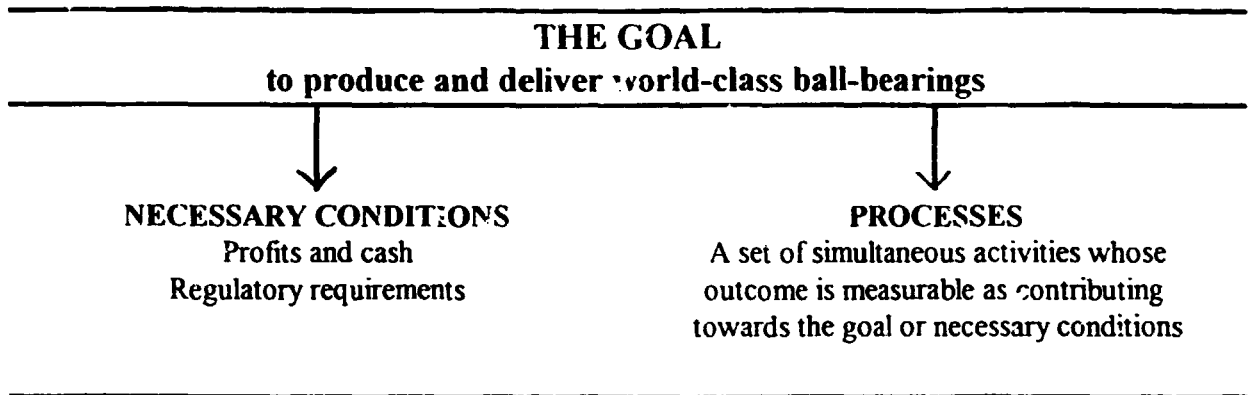
What is re-engineering?

What are processes?

All organizations have processes and they are easily understood. But often people may not recognize the fact that their activities form a part of a process. Process is not horizontal. It is a chain of work - different machines, computers, people with different skills. A process can enter or leave a function or department at any level. It's dynamic, not static.

The goal of most companies is to make money and that means that the business processes are the core processes to be focused on.

What is the goal of your company?



How to identify the core processes in your company? By mapping processes organizations can establish the key processes on which they need to focus. How to develop the functions supporting the core processes.

WHAT IS RE-ENGINEERING?

"It is about changing anything which provides a block to improving today's business performance, even if it means going back to the drawing board."

Eddie Obeng & Stuart Crainer: Making re-engineering happen

What does it really mean?

It means understanding processes, core and supporting processes, process management: Total Quality Management; SCM Supply Chain Management, Lean Management, ABM Activity Based; Management are a part of both core processes and management of supporting processes

Re-engineering is to get us moving from functions to processes.

If the goal is to make money, the business processes are the core processes to be focused on.

There is a need to re-engineer existing organizational processes because the traditional static structural perspectives contribute to a growing gap between environmental change and organizational inertia.

The Ashridge Management College has the following core processes:

Primary processes:

- 1 Client process - the activities the college carries out with organizations which use its tailored and open services.
- 2 Consumer process - describes the steps experienced by people passing through the college's delivery system.
- 3 Customer process - all the activities the college carries out with organizations which use its courses and facilities.
- 4 Money collection process - all the activities for the collection of money from clients, customers and staff.

- 5 Products process - all the ways in which new products are offered to the market and existing products are upgraded.
- 6 Market information process - the ways in which the market learns of the college's offerings and the college learns of competitive offerings and market demands.
- 7 Operations expenses payment process - all processes designed to pay for the cost of generating throughput.

Secondary processes:

- 1 Delivery preparation process - all the activities leading to and during service delivery.
- 2 Resource planning process - all the activities designed to give the college control over its future - use of resources of people, facilities and information is invested.
- 3 Management process - the ways in which the college synchronizes its activities and generates improvements by identifying issues which get in the way of goals; making the best use of resources to achieve the goal; ensuring all activities are co-ordinated and focused in line with strategy; securing the motivation of the college's people to work towards eliminating the issues which get in the way of achieving the goal.
- 4 Staff development process - the way in which staff are developed, including recruitment, selection and de-recruitment.
- 5 Product mix decision process - the ways in which the college decides how the money collected.
- 6 Strategic management process - the ways in which the college identifies future constraints by securing the enthusiasm of employees and commitment and analyzing "what if" scenarios.

WORKSHOP

- 1 What are the core processes in your own company?
- 2 Try to figure out the most important primary and secondary processes.
- 3 What are the core constituencies?
- 4 Make a process visible.
- 5 Create a vision for the process.
- 6 Re-design the process.
- 7 Implement the re-designed process project by project.

2.3 Benchmarking

A new method to develop the business is benchmarking.

BENCHMARKING

Working definition:

"The search for best industry practices that will lead to superior performance."

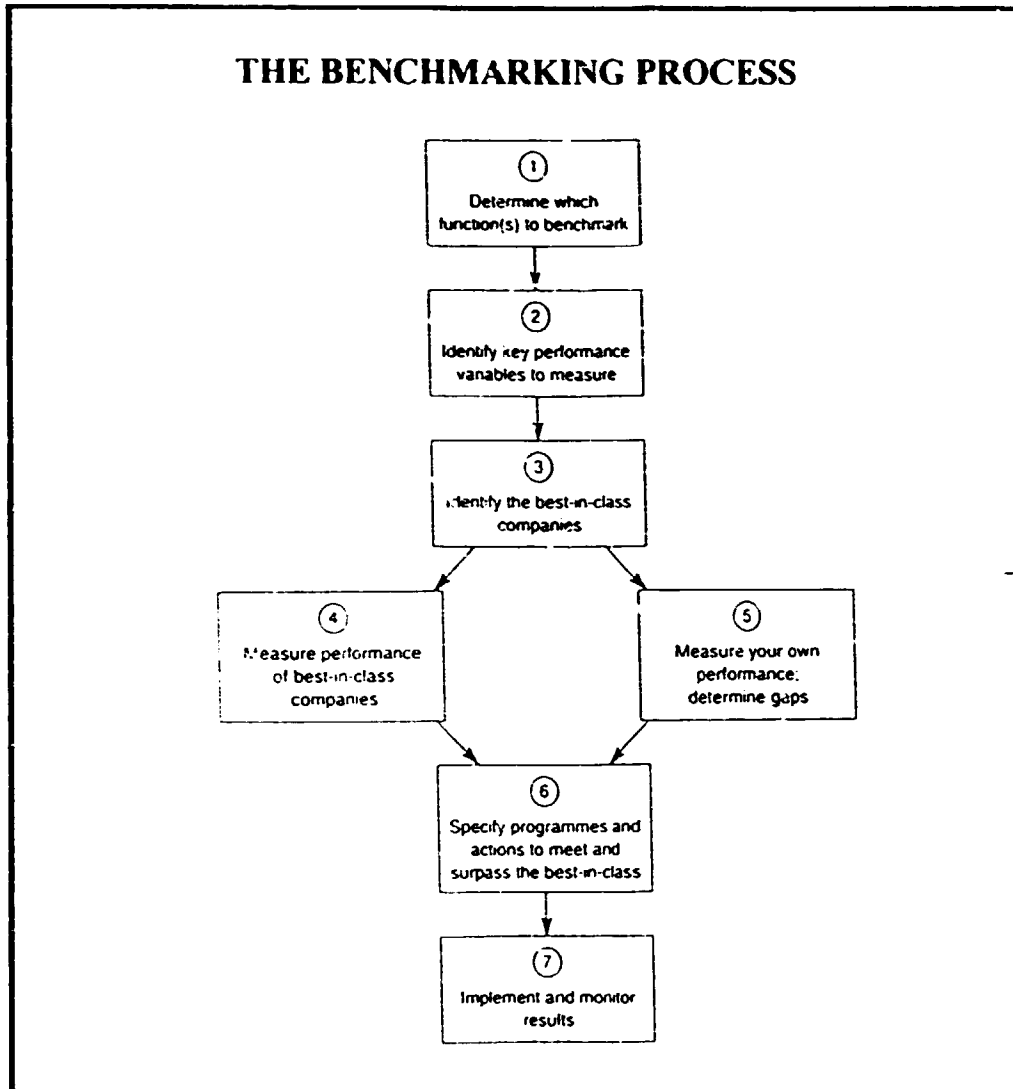
Robert C. Camp: Benchmarking

Benchmarking is a process for tying strategy development to competitive and industry analysis. It is a method for:

- 1 Measuring the performance of your "best-in-class" competitors relative to your industry's key success factors
- 2 Determining how the "best-in-class" achieve those performance levels.
- 3 Using the data as a basis for your own company's targets and strategies.

Types of benchmarking:

- ◆ **Internal benchmarking**
A comparison of internal operations
- ◆ **Competitive benchmarking**
Specific competitor-to-competitor comparisons for product or function of interest
- ◆ **Functional benchmarking**
Comparisons to similar functions within the same industry or to industry leaders.
- ◆ **Generic benchmarking**
Comparisons of business functions or processes that are the same regardless of industry.



3. MANAGING INFORMATION RESOURCES IN A COMPANY

3.1 Company Culture related to Information and Communication

A "living question" today is: How to change our business's culture, and what way. It is not just a matter of rearranging the furniture to face our customers and markets. It is a matter of rearranging the quality of people's attachments to their work and to each other.

A very important part of this living question is how to adapt the company into the information age, where the important roles are played by virtual organizations.

What does a virtual corporation look like? It looks like almost edgeless with continuously changing interfaces with customers and suppliers. The company does not have any more traditional offices. Departments reform according to the needs. Job responsibilities are constantly shifting which means flexibility and continuous training. The edge between employers, customers and suppliers starts to be invisible and changing.

A virtual corporation is a pattern of information and relationship. To create virtual products requires sophisticated information networks that gathers data on markets and customer needs. They have to be combined with the newest designing methods and computer integrated production processes. This combined system has to be operating with integrated network that includes not only highly skilled employees of the company but also clients, suppliers, distributors, and retailers.

3.2 Information Support for Company Processes

Information or data are supplied or retrieved into the primary process by the supporting information infrastructure. An over-riding influence of information in a re-engineered organization is its overall pervasiveness. More effort should be put into identifying process information needs than into the design of the process itself because it is only by establishing the information needs that a process, which captures the appropriate data, can be designed.

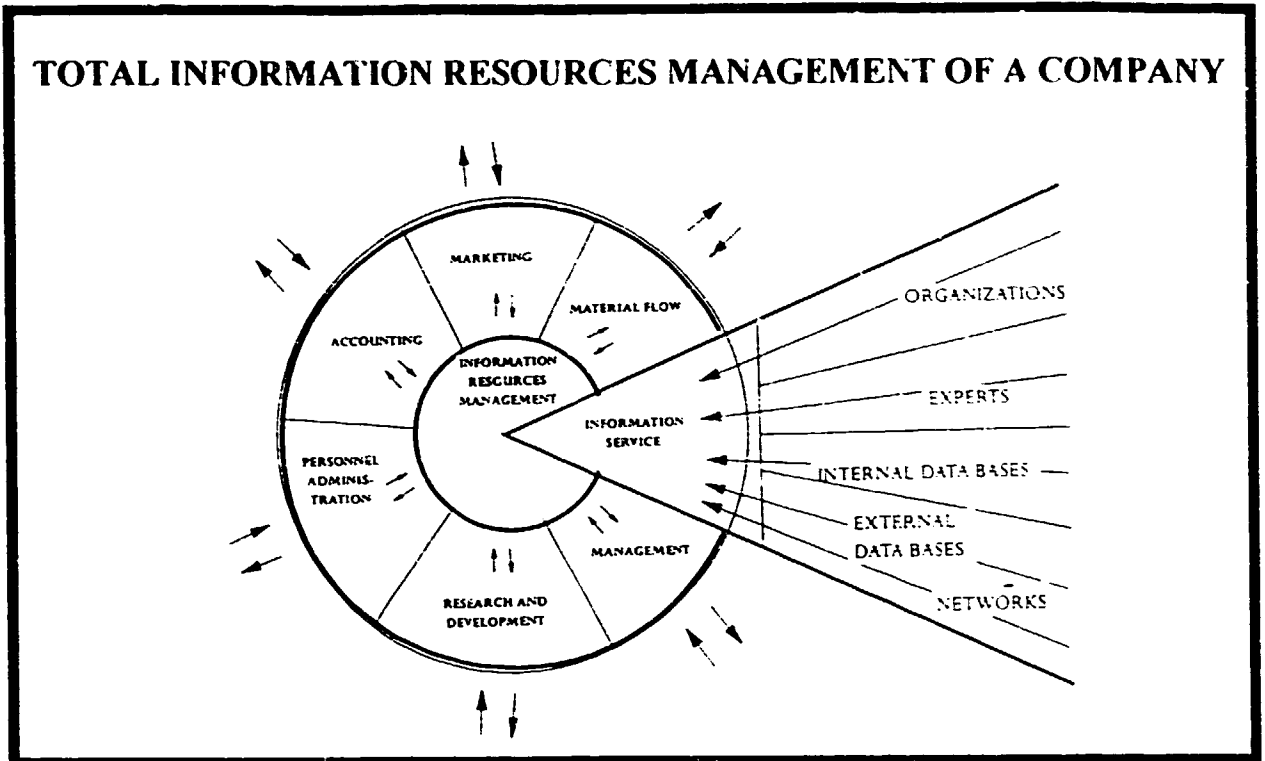
In the Virtual Corporation Davidow and Malone identify various types of information:

- ◆ Form information
- ◆ Behavior information
- ◆ Action information

Any single process relies on a regular supply of resources, whether these are the specific skills of individuals, information or materials.

3.3 Development of Strategic Information Management in a Company

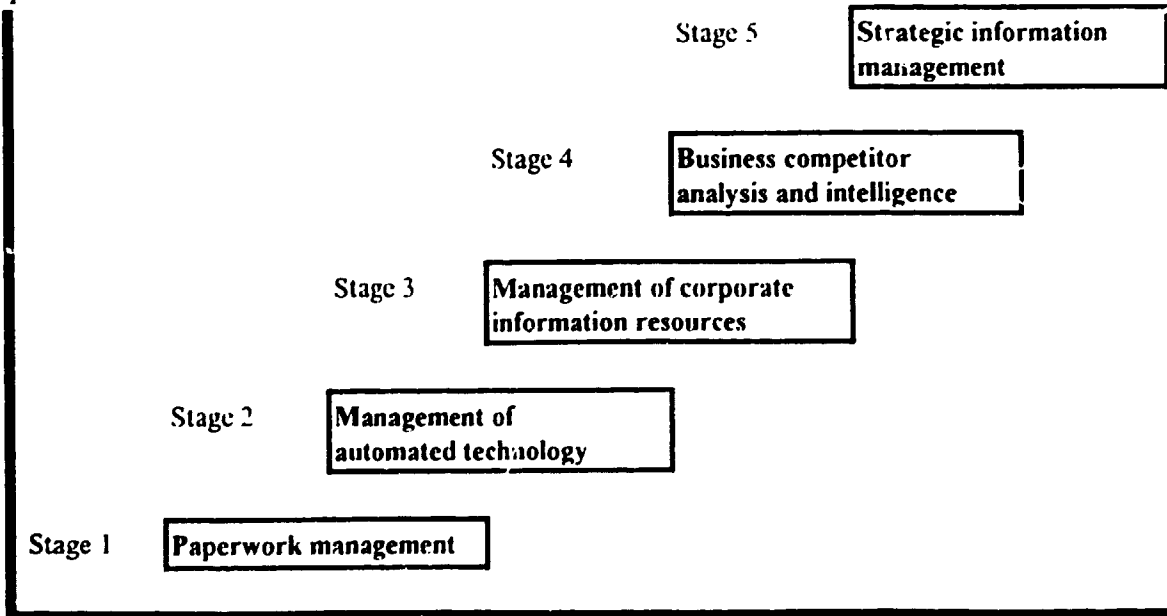
Information resource management IRM is the process within the information management arena that serves the corporate interest. IRM is the managerial link that connects corporate information resources with the organization's goals and objectives.



In the development of strategic information management there are the following stages.

DEVELOPMENT OF STRATEGIC INFORMATION MANAGEMENT

Business performance



Strategic management function

The objectives and methods in the IRM project are the following.

IRM PROJECT	
OBJECTIVE	
*	To identify data and information as a corporate resource that has to be planned and controlled in order to be shared effectively by everyone
*	To compare the business facts and the information systems facts.
METHODS	
*	Matrixes, with elements:
	- Business entities
	- Organizational units
	- Data classes
	- The flows between above mentioned

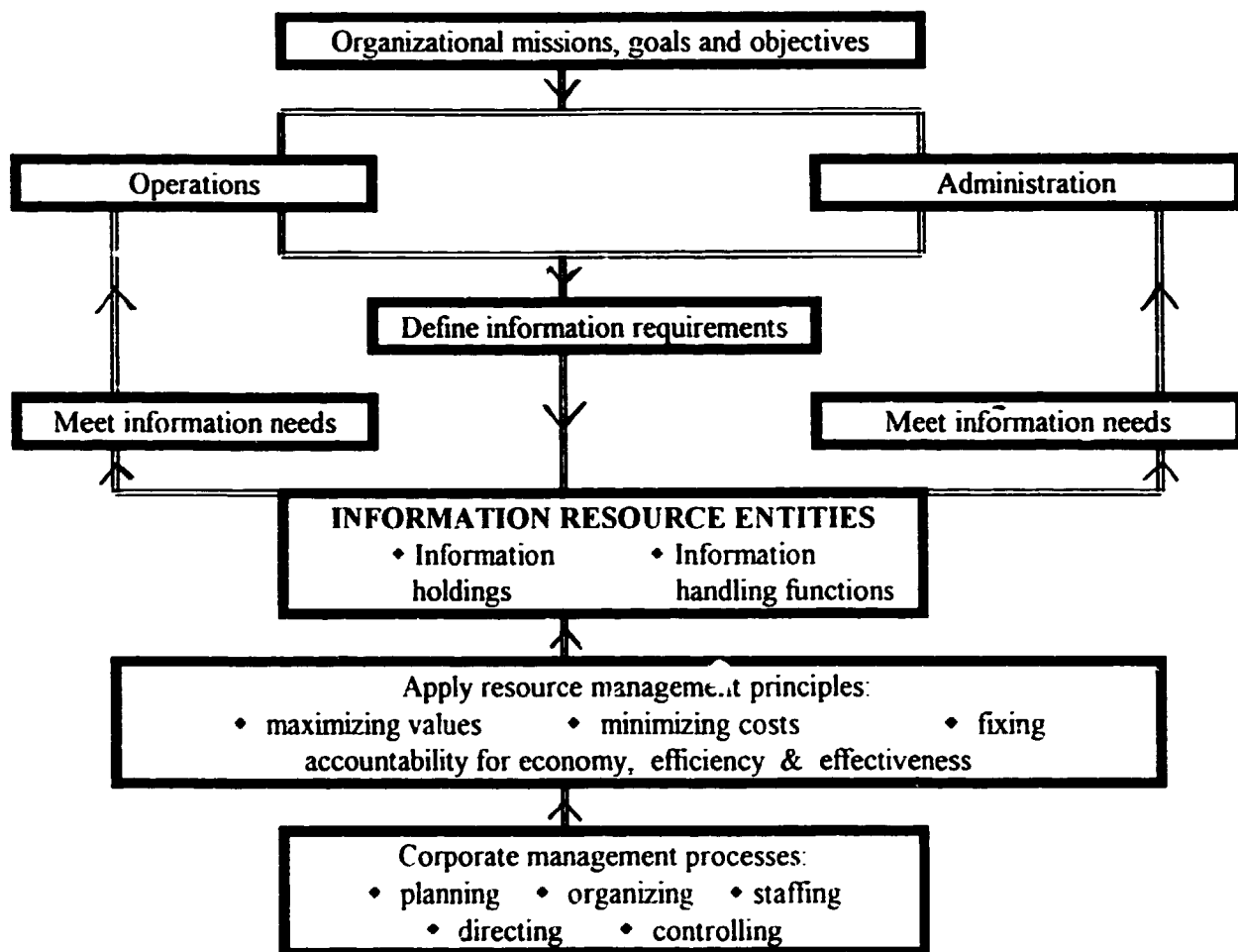
In information resources management we manage the many "**facets of information**":

- ◆ Information functions, e.g., computing, translating, record keeping, book lending, accounting., etc.
- ◆ Information resources, e.g., information systems, information sources and information services.
- ◆ Information life-cycle stages, e.g., defining needs, creating, storing, processing and disposing.
- ◆ Information technologies, e.g., database systems, electronic data interchange and telecommunications.
- ◆ Information holdings, e.g., databases, maps and records.

IRM means also in its final state the management of corporate information resources.

- ◆ Identifying specific information resources
- ◆ A top-down, business-driven function
- ◆ Applying traditional corporate controls, like planning
- ◆ Striving to coordinate the "islands of information", like
 - ◆ computer services
 - ◆ information services
 - ◆ libraries
 - ◆ office systems
 - ◆ research databases
 - ◆ data administration
 - ◆ records offices
 - ◆ product & service systems
 - ◆ maps and charts

THE INFORMATION RESOURCES MANAGEMENT (IRM) PROCESS



Horton: Infotrends, 1986

4. DEVELOPING INFORMATION SERVICE FUNCTIONS

During the present economic situation, information service, both corporate and public, are being required to manage their activities according to quantifiable business objectives. Information services will be judged by the yardstick of productivity and quality.

These trends have affected companies to the extent that the old logic has had to be transformed to fit the new mind-set:

THE OLD LOGIC	THE NEW MIND-SET
<ul style="list-style-type: none"> • Served markets • Defending today's businesses • The company is a portfolio of businesses • Fulfilling consumer needs • Product-oriented markets • Maximizing the hit rate 	<ul style="list-style-type: none"> • Opportunity horizons • Creating new competitive space • The company is a portfolio of core competencies • Creating consumer demands • Function-oriented markets • Maximizing learning - Lifelong learning

All these socio-environmental upheavals have created a need for new strategies in information systems and services. Some companies feel that they really need new information systems, combined with service quality systems and strategic alliances, to be able to navigate their way through tomorrow. These are the truly innovative enterprises.

Many companies' information services are managed as intrapreneurs. What does this mean in practice? The answer to this is that strategic planning, product development, pricing, competitive analysis, resources management, and, especially, marketing are the everyday functions of an information service unit.

Knowledge marketing is very different from the marketing of industrial products. The next figure describes the difference between these two types of marketing.

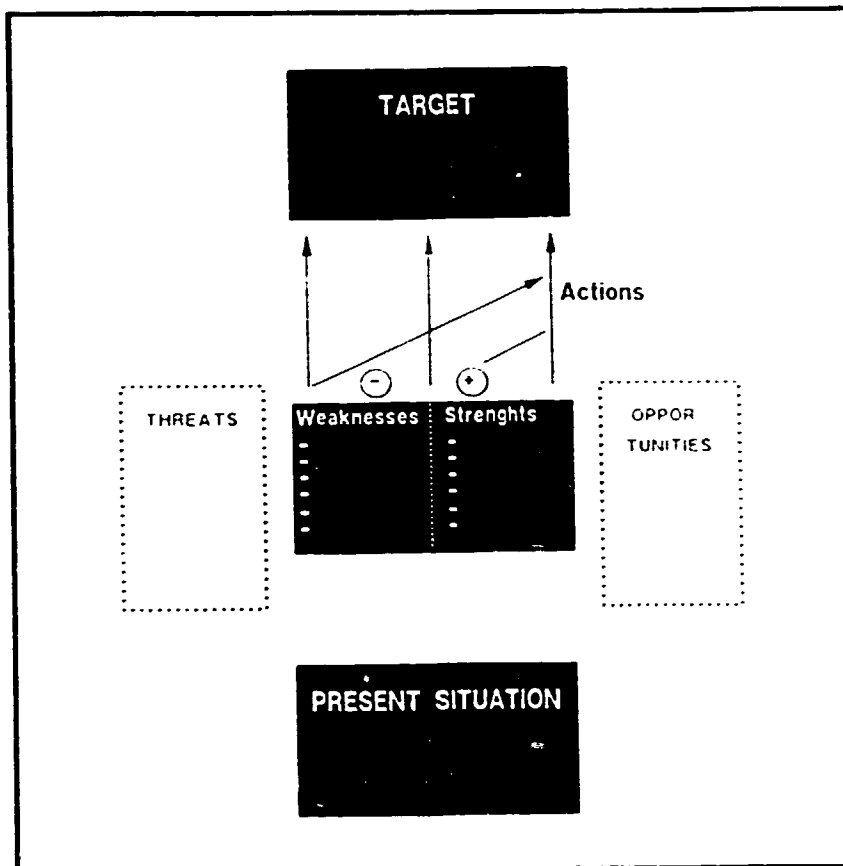
COMPETITION FACTORS IN MARKETING		
INDUSTRIAL PRODUCTS	KNOWLEDGE PRODUCTS	
Influencing	< ==> Spreading of knowledge	
PR (Public Relations)	< ==> Network (Personal Relations)	
Mass media	< ==> Qualitative communication	
Abstract (meta-product)	< ==> Concretization	
Reception of subscriptions	< ==> Choosing the customers	
Quantitative market research	< ==> Knowing the customers	
Product development	< ==> Competence culture	

In this kind of environment the questions which face us information professionals are:

- ◆ Are we able to respond to the new needs?
- ◆ Are these changes, a threat or an opportunity for us?

To answer these questions we should try to establish where we stand. The following SWOT analysis, that tool so essential to us information professionals, points the way.

4.1 Business Idea and Strategies



We all know what the situation in our organizational framework is. I believe we all know what our strengths and weaknesses are. If we don't, we should.

The business idea of the information service is:

TO WHOM - Market segment

- ☺ Branch segmented customer groups
- ☺ Geographically segmented customer groups
- ☺ Individual customers
- ☺ Whole company
- ☺ Unsegmented customers

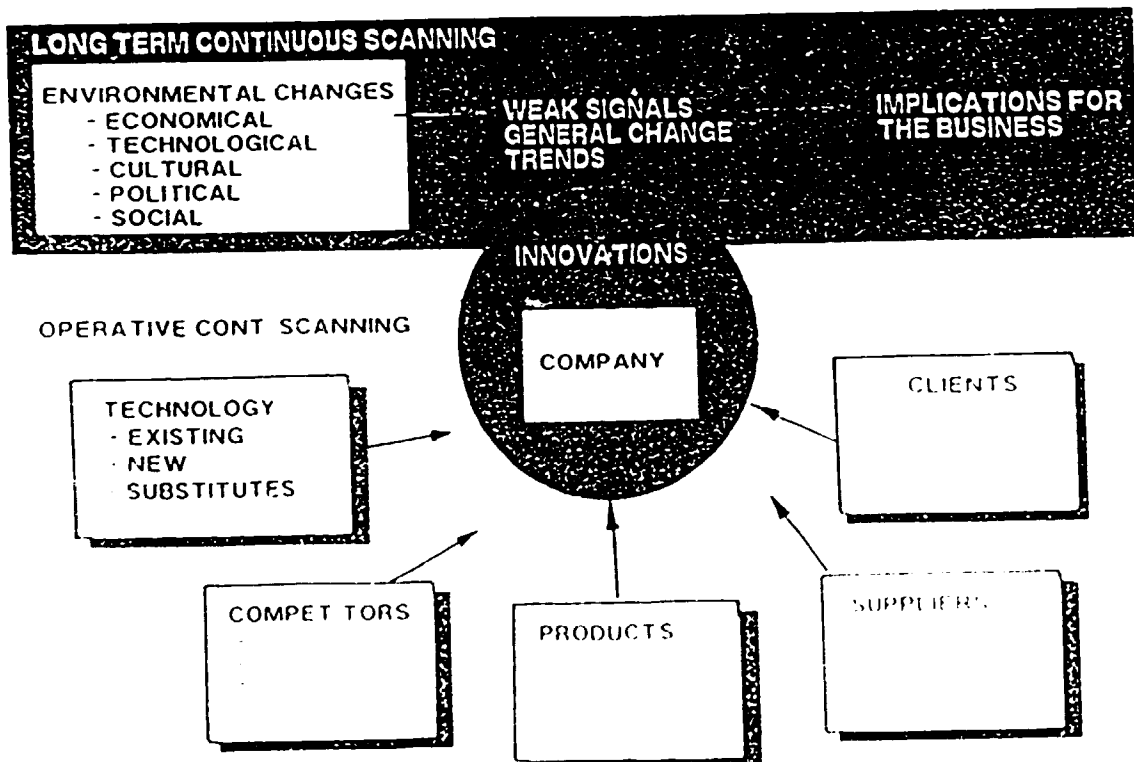
WHAT - Products and services

- ☺ Bulk products
- ☺ Tailor-made products
- ☺ Product packages
- ☺ Combined product and service packages
- ☺ Product families

HOW - Habit to act

- ☺ Self service / service
- ☺ Manual / electronic
- ☺ Continuous service process / one time service
- ☺ Products innovated by Information Service / on demand

Trends in industry and economy influence continuously the information services. To follow the new changes the information service works according to the next figure:



To find this information requires general understanding of business and business competence. It also means that in order to get fast analyzed information about these matters you have to have competence in both substance and systems.

4.2 Client Oriented Information Business in a Company

In the 1980s we saw a customer in each person;

In the 1990s we see an individual in each person;

How are we going to see the customer in the year 2000 ?

J. Olaisen and Ø Revang (SAS)

Effective information service of the future will:

- ◆ know who their customers are
- ◆ have within its remit all the processes to contribute to managing the customer interface
- ◆ have clear and defined responsibility for these processes
- ◆ focus on activities that demonstrably add value to the key processes of the company
- ◆ be measured, and judged against these measures

The info resources must be re-organized so that they are treated as a process rather than as an unwieldy and often isolated department.

Information service is to provide the right kind of information to the right people at the right time in the process.

**Every work is a process.
Every work has a customer.**

CUSTOMER

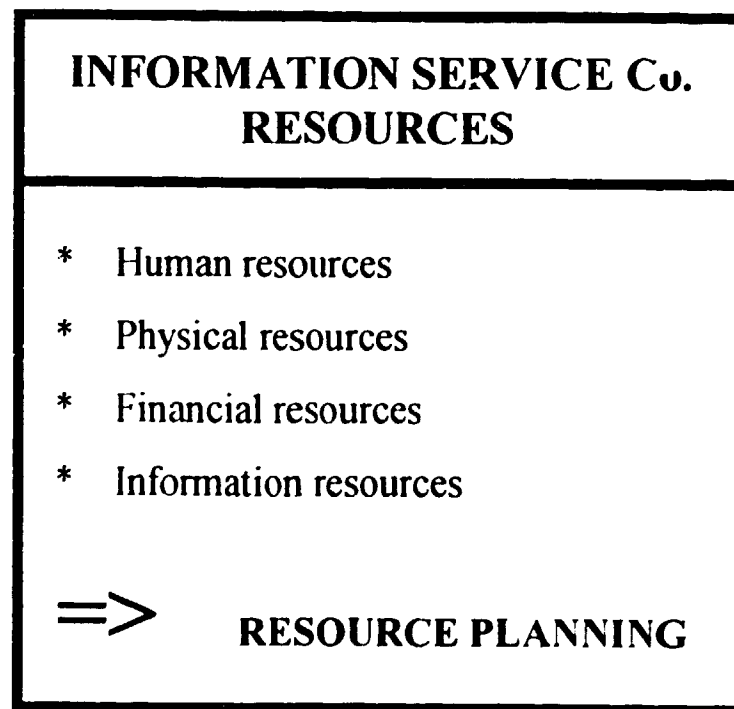
- * Is a resource in the production of services
- * Is taking part in the production process
- * Is a quality controller
- * Is a marketing resource
- * Is the object of marketing

CUSTOMERS ARE THE BEST MARKETING PROFESSIONALS!

Some companies ask customers what they want. Market leaders know what customers want before customers know it themselves.

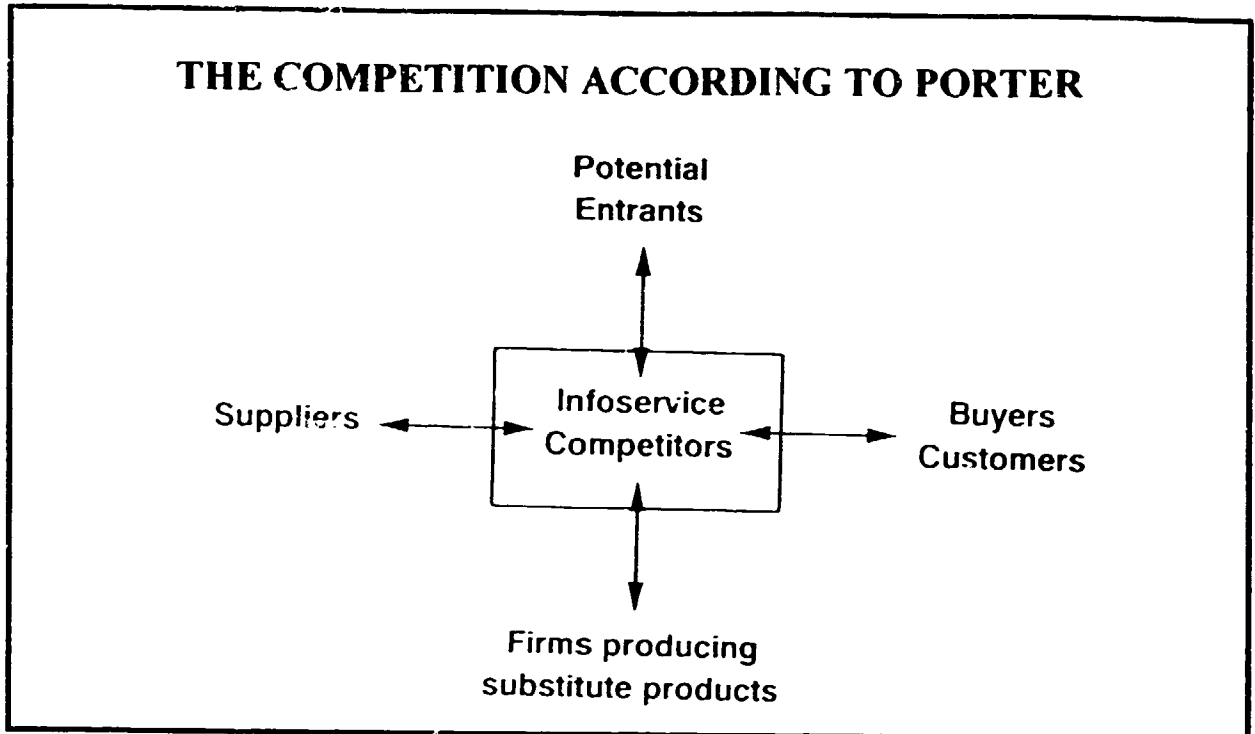
Gary Hamel and C.K. Prahalad

4.3 Resources



4.4 Competition

The information service must maintain a competitive edge, look at the competition according to Porter's model:



In the previous model we have to take into consideration the following things:

Customers Can their information needs be fulfilled without an internal information service?
(database searchers etc.)

Potential entrants
Are there new entrants into the info business?
(new consultants, brokers, hosts)

Suppliers Is it possible that they will serve our customers directly in the future?

Firms producing
Executive information systems, CD's, electronic mail, substitute products.

It is becoming more and more important to carefully analyze which services are more profitable to buy from outside and those which we can produce ourselves.

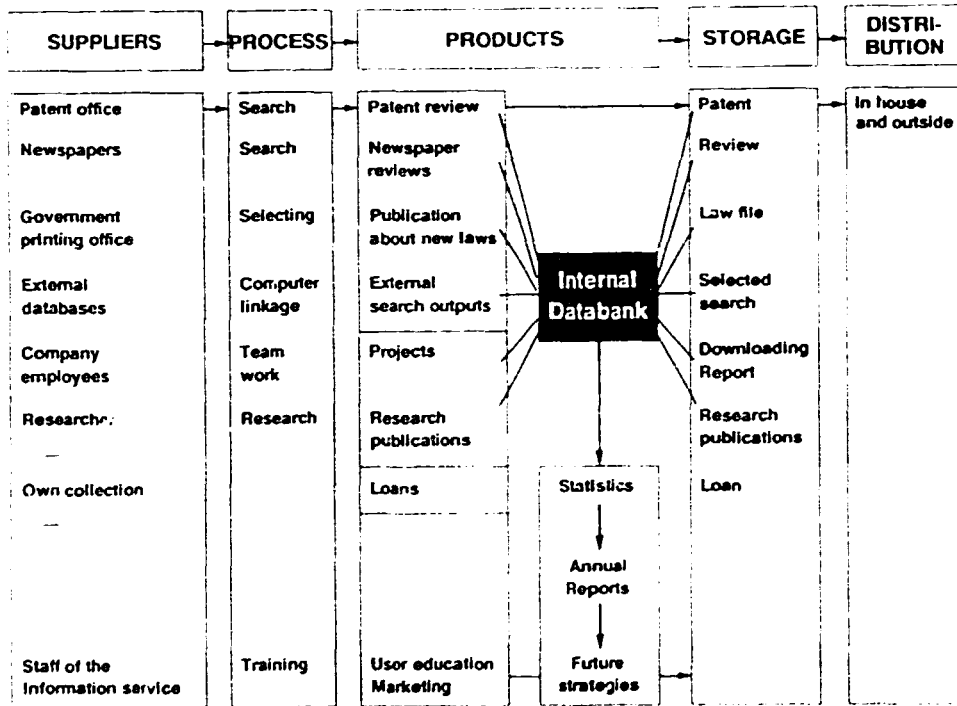
4.5 Information Products, Services and their Quality

Knowledge is power. Typical for today is increasing competitive intensity. This means that after the financially difficult times it is reasonable to expect both governments and companies will start to invest more to intelligence products.

For example senior executives in companies need information about:

- ◆ Company targets
- ◆ Company general accounts
- ◆ Stock levels in a company
- ◆ New product information
- ◆ Delivery performance

To produce intelligence products we need monitoring of internal information like product development announcement, accounting reports, and personal profiles. As well as monitoring of external information, e.g., customer analysis, competitor intelligence, environmental scan, forecasting, monitoring prices, market monitoring, patent monitoring, corporate profiles, director profiles, product development update.



Depending on each company needs the types of value added information services vary from reports and bulletins to internal consulting and global networking.

To succeed in monitoring and product development of information products, it is important to know the resources and networks of information and to be able continually to expand the networks.

WORKSHOP

Information sources and resources

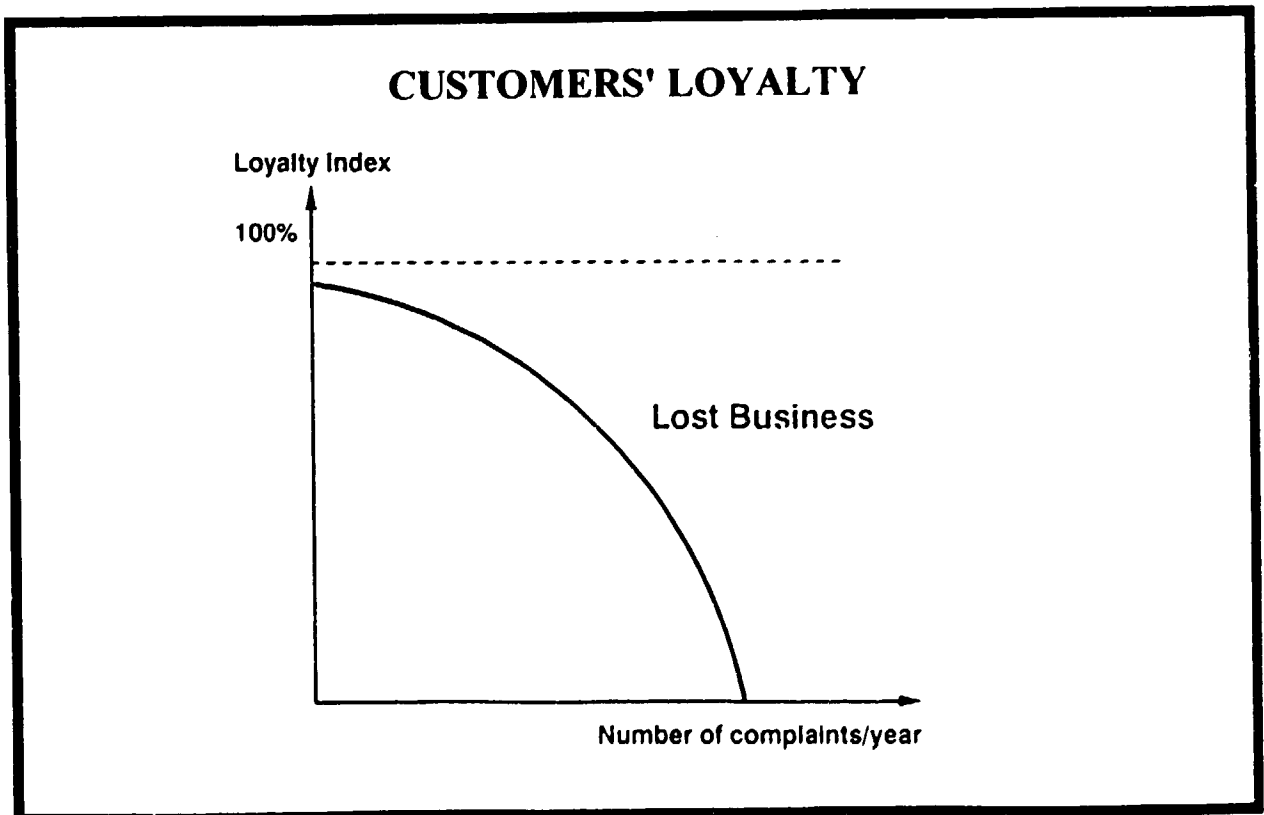
In knowledge marketing one of the critical success factors is the quality of knowledge products and the Total Quality Management (TQM).

Total Quality Management

"A management philosophy embracing all activities through which the needs and expectations of the customer and the community, and the objectives of the organization are satisfied in the most efficient and cost-effective way by maximizing the potential of all employees in a continuing drive for improvement."

BS 4778: Part 2: 1991

Quality is a very powerful marketing tool. Buying decisions are based on the assessment of quality, delivery time, the price of the product, and on the level of trust the customer has in the producer. It means that we have to establish confidence in our knowledge projects. We have to remember that the market forgives many things, but never a lack of quality. As Professor Walter Masing says, the customers' loyalty depends on the number of complaints per year.



Prof. Dr. Walter Masing

MARKETING IS GIVING PROMISES

QUALITY IS FULFILLING PROMISES!

"Quality will begin to be superseded by another factor, something more basic than quality and from which quality automatically flows. And that is *integrity*."

5. INFORMATION TECHNOLOGY AS A TOOL IN INFORMATION RESOURCES MANAGEMENT

Information society, information highways, information infrastructure, various terms that in essence deal with the same concept: large quantities of information will be transmitted between any two locations on the globe, increasingly easily and increasingly cheaply, due to advances of information and telecommunication technology.

5.1 Information Superhighways from the Company Point of View

- ◆ Networks
- ◆ Development of electronic information superhighways
- ◆ Internet - a new tool for networking
- ◆ Producers' point of view
- ◆ Information markets in networks
- ◆ WWW's knowledge infrastructure
- ◆ Information retrieval on Internet
- ◆ Marketing of products through Internet

The key modern technologies

- ◆ Graphical user interfaces
- ◆ Networking software
- ◆ Flexible databases
- ◆ Imaging

Multimedia and hypermedia are new, very rapidly increasing ways of handling electronic data, text, images, and voice. Multimedia publishing creates new relations between readers and distributors. On demand publishing is the tool of modern networking society.

NETWORKING

- ◆ Visits: creating personal networks
- ◆ Visits to federational and private company information services
- ◆ Creating individual business contacts in some companies in ... country

BUSINESS PLAN WORKSHOP

Presentation of the participants' individual projects to create the model for their own companies.

6. CASE STUDIES OF SOME COUNTRIES

One example:

A survey carried out in Finland in 1991 showed that in Finnish companies the traditional information services are changing into information intrapreneurship or "infopreneurship". Strategic planning, product development, pricing, marketing, competitive analysis, and resources management are the everyday functions of an information service unit.

The world situation has changed dramatically during the last few years. The decade ahead is going to be far different from that just past one. Processes of change - either financial, social or technical - are not predictable and the environment is increasingly more complicated. Less and less is now being based upon former experience.

For information services, the change is both a threat and an opportunity requiring a new perspective, new strategies, and new skills. At the same time, when the need for information in society is increasing, there is going to be a growing number of players in the information game. Because of the ever growing momentum of change, more and more communication between organizations and persons is needed. At the same time information services must possess good competence areas and competitor advantages.

In all industrialized countries, information services will be required to manage their activities according to business objectives. Information will be judged in terms of productivity and quality measurements.

- * Are we able to respond to the new demands?
- * Do we have the courage to handle the situation?
- * Are we able to gain the competitive advantage?
- * Do we know how to link the services to the information environment of the business?

To find the answers to these questions, we interviewed managers of 16 large Finnish multinational companies. We also took one foreign company for the sake of comparison.

16 Companies

- ◆ Pulp and paper industry
- ◆ Food industry
- ◆ Chemical industry
- ◆ Pharmaceutical industry
- ◆ Metal industry
- ◆ Finance and banking
- ◆ Communication industry

Position of information services in the company

Most of the information managers worked at the hierarchical level of middle management. E.g., the following titles we used for the head of information services:

- * Director
- * Manager of the department
- * Manager of the information services
- * Manager
- * Superior of the information services
- * Manager of the Information Resources Management

Information service units were situated in almost any sector in the companies, e.g. in the Marketing Department, Service Center, R&D Department, Department of Finance, and Department of International Affairs.

The trend was to move from centralized information services to coordinated decentralization. Many of the managers had decentralized, or were planning to decentralize, the information specialists and information scientists among the customers. The specialists were supported by the centralized information material services.

Business idea

- * What is the business idea?
- * Are we continuously developing our business?
- * What are the strengths and weaknesses of our business?
- * Are the strengths based on unique products and services or on a special kind of production or resource or modern technology?
- * Are the strengths based on specially trained personnel with unique competence?
- * Is it based on well-planned and efficient marketing and selling?

It was obvious that the business idea was not clear to all. There were some excellent ideas, but also some old-fashioned and unclear ones. The strategy consciousness was surprisingly low. The following types of strategies were discussed:

- * Strategy of technical quality
- * Strategy of costs and prices
- * Product strategy
- * Strategies for image, services strategies

It was obvious that the marketing of the information services both internally and externally, was not effective.

In the discussions about strategies the following points came to be analyzed:

- * Customers
- * Competitors
- * Products
- * Environment
- * Resources
- * Quality

Customers, customer segments, potential customers

To support the knowledge creating activities of individuals and organizations, the following questions have to be answered:

- * How the markets have been defined
- * How large they are
- * How developed they are
- * How they can be divided into segments
- * What is the size and growth speed of the segments
- * What are the needs and properties of the segments
- * How the needs and properties are changing

Competitors

Inside the company the only type of competitor identified was that of the information users who had started to make information searches themselves. The information produced by other departments was not considered as competing information. This is, in a way, unfortunate. Competition in this area would make the quality of the information products higher.

Products

In product development it is important to link the information services in production and marketing. Four of the 16 managers had a very good product strategy. All the managers had plans to develop new products, especially electronic ones, to substitute for those becoming outdated. The development of personal and electronic networks was also considered to be very much in vogue.

The products in the companies were defined as follows:

PRODUCT DEFINITIONS

- 1 Product + service = package
- 2 Function aiming at fulfilling customer's needs.
Feedback is one important factor.
- 3 Concrete marketing.
Benefit to customer can be shown.
- 4 Fulfilling customer's needs in segmented area segmented product.
- 5 Contents, layout, price, distribution.
- 6 Quality standards - ISO 9000.

The following types of product development were discussed:

- * Product development with small steps.
- * Innovation products, totally new ones.
- * Product variations.

Product development with small steps as well as product variations were dominant.

Products were classified in one company as follows:

PRODUCT CLASSIFICATION

Example company X

- | | |
|---|----------------------------------|
| 1 | Purchasing service |
| 2 | Distribution service |
| 3 | Communication service / products |
| 4 | Analyzing service / products |
| 5 | Advisory service |
| 6 | Consulting service |

In every unit product development was very much technology-driven, meaning the changeover of the product from manual to electronic.

Risk management was not at all typical for these infoservices.

Quality

The quality of the services and products was discussed in every interview. Quality systems existed in several companies, but they were not yet completed in information services. Quality and TQM is number one in lists of critical success factors in the USA and Europe, but no longer in Japan. Japan has already internalized the quality process and quality is a self-evident truth in every product and service. Quality is defined as "fitness for purpose".

Internal Marketing

The marketing function of information service can be divided into two categories:

- 1 Marketing the business idea of the company's own internal "information company" to its personnel to motivate it to market the information products in the best possible way.

- 2 Marketing of the information products to the customers. This was divided as follows:
- * Unsegmented marketing: same product for all.
 - * Selective marketing: different products for different segments.
 - * Focused marketing: products for one or two segments only

Cost Strategies

Financial structures in interviewed information services were divided into the following types:

COST ALLOCATION		
1	+/- Profit responsibility	6 %
2	Cost responsibility	20 %
3	Budget responsibility	70 %
4	"No responsibility"	4 %

Information systems

The following information systems were identified in the interviewed companies:

INFORMATION SYSTEMS	
♦	All interviewed companies had several databases of their own, e.g. information material, customers, charging systems
♦	Executive Information Systems
♦	Records Management System
<hr style="border-top: 1px dashed black;"/>	
	Hypermedia used as a tool
	Electronic networks

Trends

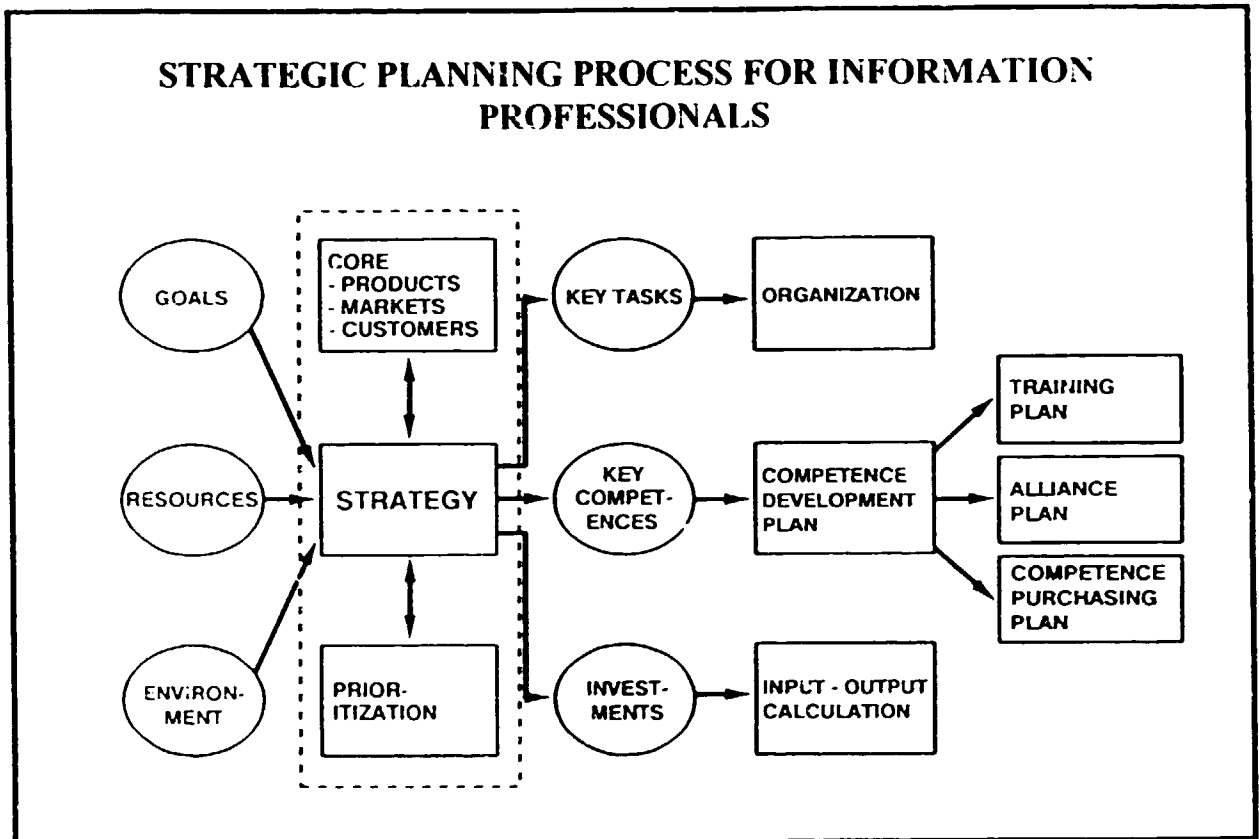
As a result of the survey, the following trends are observable:

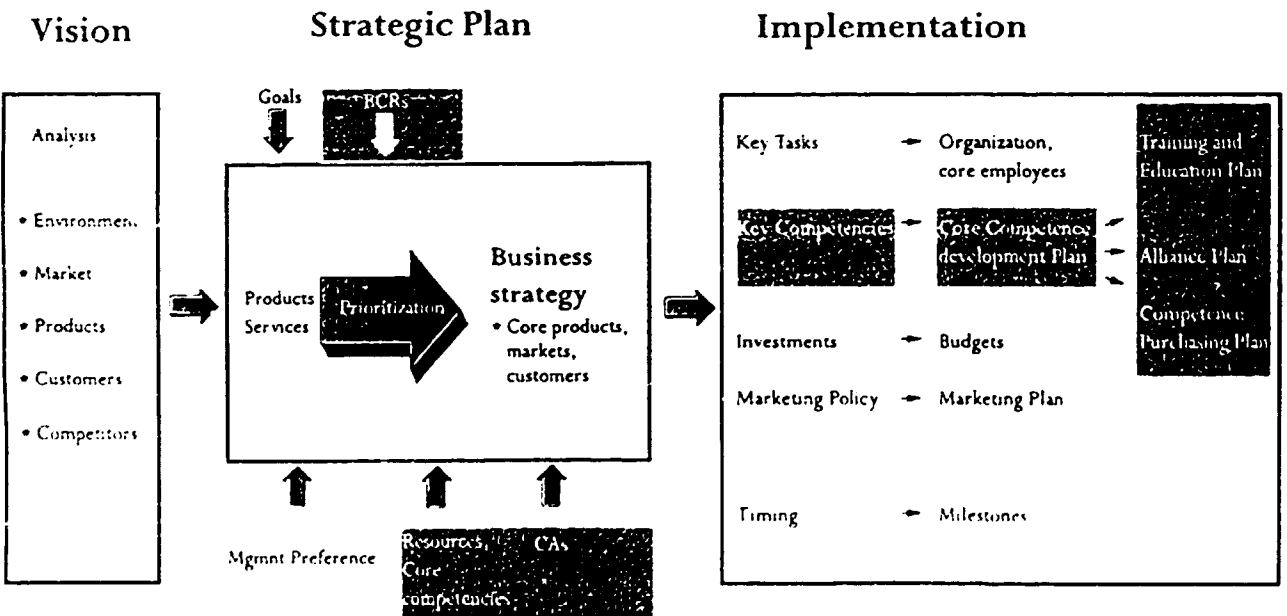
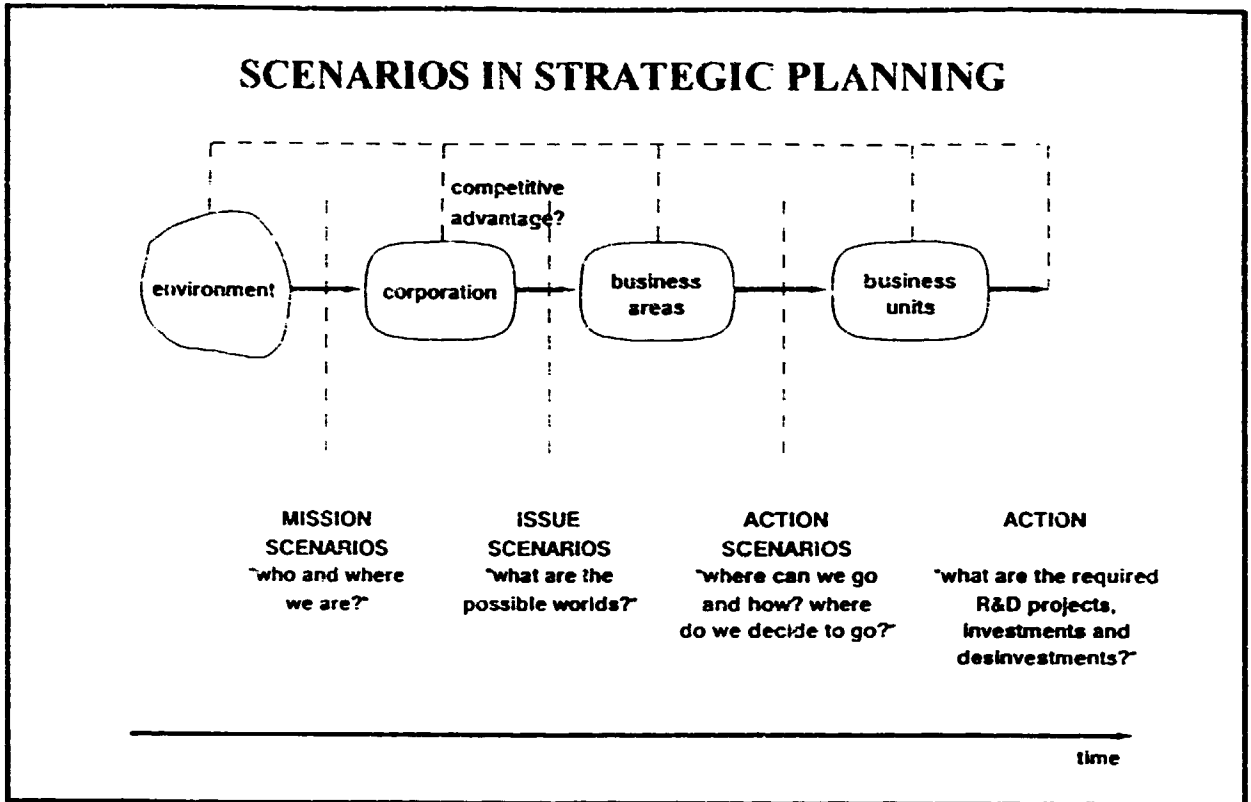
TRENDS

- 1 Volume of functions is increasing.
- 2 Volume of human resources is stable.
- 3 Coordinated decentralization.
- 4 Activity becoming international.
Subsidiaries.
- 5 Tendency towards infointrapreneurship.
- 6 Participation of the customer.
- 7 Interactive product distribution using electronic tools.
- 8 Management ratios
 - * Financial
 - * Efficiency
 - * Qualitative
- 9 Quality standards - ISO 9000
 - * Change in customer service thinking
- 10 Subcontracts increasing
- 11 Sophisticated products
- 12 Flexibility of products
Readiness to change

The effective information professional is able to take risks, able to market, able to be diplomatic - but is at the same time stubborn. In short, he does not give in, but gets things done. He must be able to make sound decisions on a timely basis. He often faces the dilemma of whether to stop or to continue gathering information. An information professional needs a very good knowledge of his own organization. Many information professionals lack basic business know-how and an appreciation of day-to-day business needs and overall operations. Because of the continuous changes in the world, the information field will be an area of life-long learning. The training of information professionals is a never ending process.

7. INFORMATION PROFESSIONALS IN THE INFORMATION AGE; Challenges, Training Demands and the Future in the World of Virtual Organization





BCRs Basic Competitive Requirements
CAs Competitive Advantages

Implementing company strategy through development of core competencies and core employees

7.1 Challenges

If we think about the future of the information professionals, it is advisable to take a look at the following SWOT analysis.

Strengths	Weaknesses
<ul style="list-style-type: none"> * Professional skill * Easy to contact * Confidentiality * Good service 	Lack of <ul style="list-style-type: none"> * marketing strategy * courage and imagination

BUSINESS FOCUS --> SHORTER-TERM

Opportunities	Threats
<ul style="list-style-type: none"> * Increasing cost effectiveness * Demand to better meet the customer needs * Demand for good competence in the specific business 	Information services will become parts of e.g. market research or R&D if they can't provide value added and focused services.

FOCUS ON CORE MATTERS

Opportunities	Threats
Growing market for focused information services	For commercial and public information services - difficult to sell their products like reviews of specific industries.

FOCUS ON NEW GEOGRAPHICAL AREAS

Opportunities	Threats
New approaches for information services. Networks	Lack of networks in developing countries

NEED FOR CONTINUOUS EDUCATION IS INCREASING

Opportunities	Threats
<ul style="list-style-type: none"> * New career possibilities for information specialists * Opportunity for organizations and consulting companies 	

COOPERATION IS INCREASING

Opportunities	Threats
Activities outside the company	Lack of communication skills.

INCREASING COST / EFFECTIVENESS

Opportunities	Threats
Possible to get rid of routines and to create new "core" products.	Slow response to change. Commercial information brokers.

Different roles and careers:

- ◆ Vertically: Leading to managerial positions
- ◆ Horizontally: E.g., leading to an expert position

From Career Development to Career Strategy

<i>CAREER DEVELOPMENT : THEN AND NOW</i>		
Structural Characteristics	Mass Production Era (1865-1980s)	Knowledge-Service Era (1980s and beyond)
Job-creating forces	Huge manufacturing industries oriented to the national economy	Knowledge-service enterprises, competing in a global market
Occupational characteristics	A few stable, clearly classifiable types	Many rapidly evolving and amorphous types
Career preparation	Complete your education and then get a job	Continual working, learning, keeping pace with information technology growth
Career choice	Luck, happenstance	Decision making aided by a professional and on-going attention
Primary employment targets	<i>FORTUNE</i> 500 corporations	Smaller companies, skill-contracting agencies, self-employment
Career development objective	Climbing prescribed organizational ladders	Personal development in areas of expertise
Employment source	One organization for entire career	Series of organizations and contracting agents
Major career limitations	Restrictions based on sex, race, age, religion	Skills, knowledge, and job development savvy

David C. Borchard, 1995

7.2 Training Demands for the Future in the World of Virtual Organization

- ◆ The Basic Skills of the Information Society for all
- ◆ Professional Skills and Competencies
- ◆ From one-off Education to Lifelong Learning
- ◆ Teachers and Training Organizations in Key Position

TRENDS THAT WILL AFFECT THE FUTURE

The growth of the information industries is creating an extremely knowledge-dependent society.

The permanent military establishment will continue to shrink.

People will grow increasingly mobile in key areas: personal life, location, occupations.

Technology will increasingly dominate both the economy and society.

Telecommunication and multimedia are continuing to unite the nations of the world

Demand for lifelong education and training services will heat up throughout society.

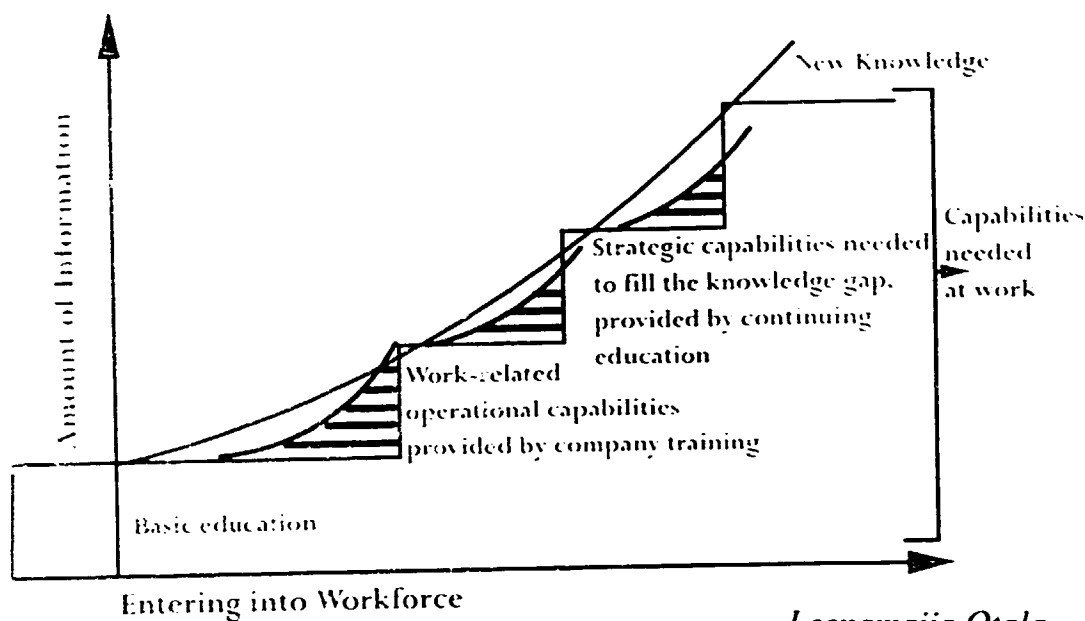
New technologies will greatly improve education and training.

Business is taking on a greater role in training and education.

Improved pedagogy - the science of learning - will revolutionize education.

Information-based organizations are quickly displacing the old command-and-control model of management. Information technology is the driving force.

Lifelong learning: Continuous development of operational and strategic capability



8. THE ESSENTIAL SYNERGY BETWEEN ALL THE INFORMATION PROFESSIONS AND THE INFORMATION PROFESSIONALS

Why the Synergy?

The information, knowledge and communication sectors are constantly developing. This has created a need to establish forums to promote cooperation and synergy among all the professionals dealing with different aspects of information. This means professionals working in information services, libraries, business archives, massmedia, journalism, marketing research, information processing, etc.

The common goal is to influence the society by promoting:

- ◆ The perception, control and use of information concerning the future in decision-making.
- ◆ The active use of information to benefit business and society.
- ◆ The creation of new, competitive product and service clusters.
- ◆ The Equality of citizens as information and knowledge users.
- ◆ Starting in preschool, the lifelong learning in acquiring, evaluating and using in practice versatile information.
- ◆ Communications awareness as a goal of communications training and education.

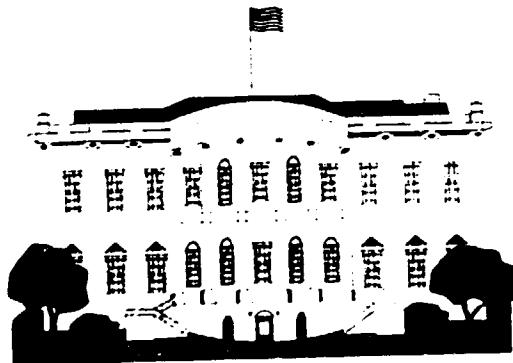
- ◆ The readiness of the citizens to use information technology.
- ◆ The opportunities for the citizens to benefit from information technology during work and leisure.
- ◆ The awareness among decision-makers and the citizens of the significance of the information and knowledge sectors.

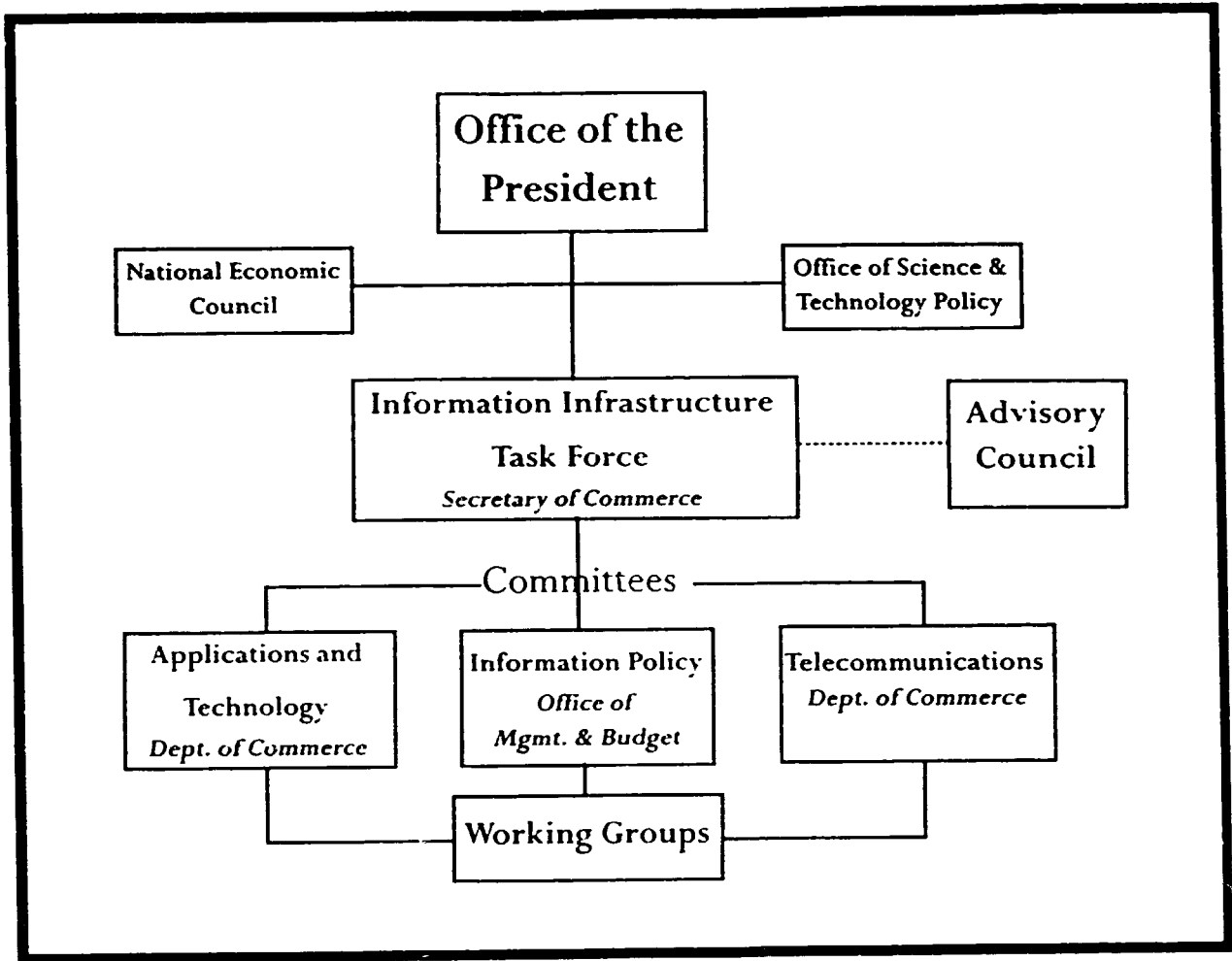
8.1 National Synergy Cases

8.1.1 USA: "USA Information Infrastructure - Information Superhighways", President Clinton Vice-President Gore Information Policy, 1993-94

The key words for the Information Infrastructure in USA are the following:

- ◆ Private investment
- ◆ Competition
- ◆ Flexibility
- ◆ Open access
- ◆ Universal service





**President Clinton - Vice-President Gore Administration
PLANS FOR NATIONAL AND GLOBAL INFORMATION
INFRASTRUCTURES AND
INFORMATION SUPERHIGHWAYS**

**National Information Infrastructure
Government Agenda for Action
Need for Government Action to Complement Private Sector Leadership**

Mega-Projects

- 1 Vision and goals driven by specific applications.
- 2 Access to the NII.
- 3 Privacy, security and intellectual property.

Principles and goals

- 1 Promote private sector investment.
- 2 Extend the "universal service" concept to ensure that information resources are available to all at affordable prices.
- 3 Act as catalyst to promote technological innovation and new applications.
- 4 Promote seamless, interactive, user-driven operation of the NII.
- 5 Ensure information security and network reliability.
- 6 Improve management of the radio frequency spectrum.
- 7 Protect intellectual property rights.
- 8 Coordinate with other levels of government and with other nations.
- 9 Provide access to government information and improve government procurement.

Managing Change / Forging Partnerships

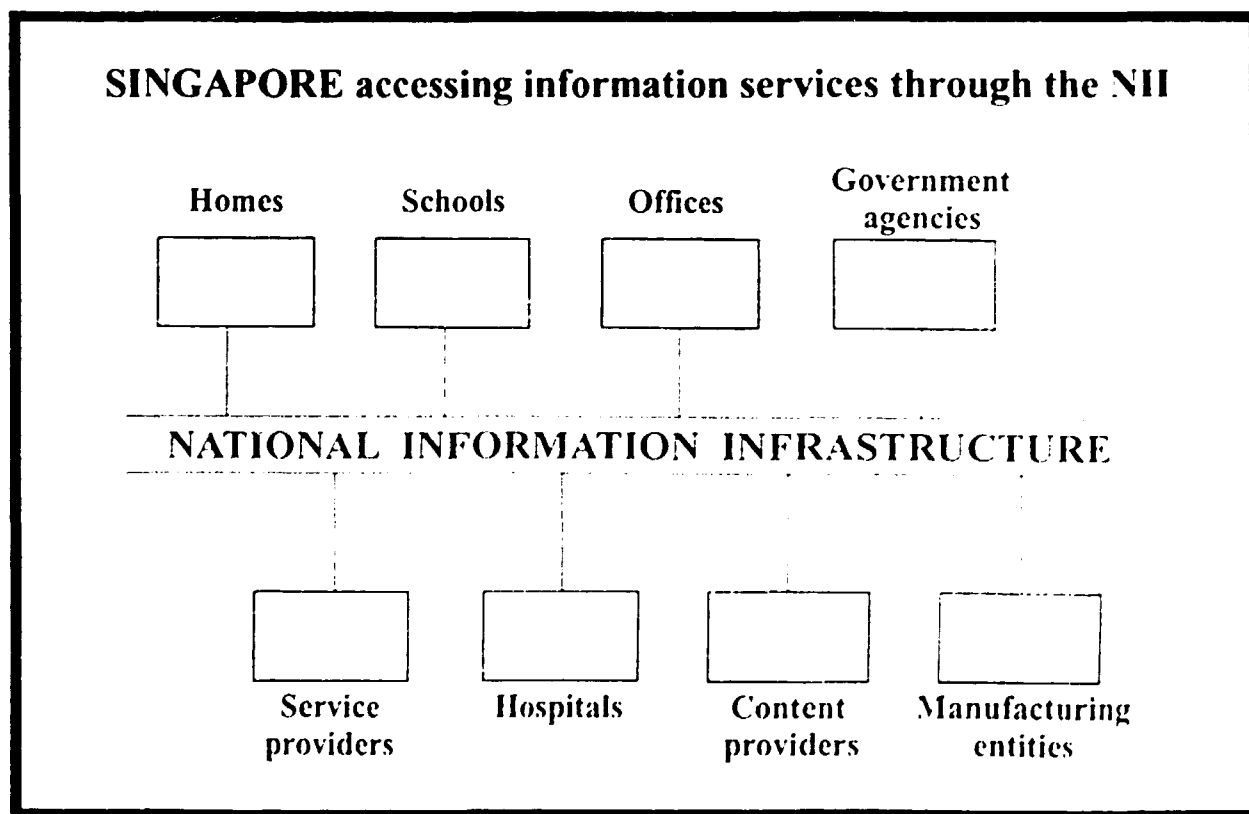
- 1 Establish an interagency Information Infrastructure Task Force.
- 2 Establish a private sector Advisory Council on the National Information Infrastructure.
- 3 Strengthen and streamline federal communications and information policy-making agencies.

8.1.2 Japan: Info-Communication Infrastructure

Prime Minister Murayama's Advanced Information and Telecommunications Society Promotion Headquarters created a new vision for an advanced information society in 1994. The objective of this new initiative is to prepare comprehensive measures for social awareness, deregulation, and better definition of the role of private/public sectors in the information society, including social impact. Significant for this initiative is that it has numerous advisers from large businesses and that the Japanese government recognizes the importance of cooperation in these issues.

If we try to figure out what the basic differences between Japan, the USA and Europe are concerning information infrastructure, we could quote Mr. Roger Longhorn from DGIII: "The different environments which exist within the USA, Japan and Europe have many implications for the manner in which the information society will develop in these regions. Japan is similar to the USA in offering vendors and developers a single national market, without the multicultural and multilingual characteristics of Europe, and a partially deregulated telecommunications industry. Japan is similar to Europe in lagging behind the US in availability of inexpensive high-speed networks and cable TV penetration. In both Japan and America, telecom liberalization and trade issues can be effectively addressed through a single legislative framework within a single government.

8.1.3 Singapore



8.1.4 Sri Lanka: Plans to be developed in 1995

8.1.5 Finland: "Resolution of the Finnish Information, Knowledge and Communication Sectors"

25 non-governmental Finnish organizations representing over 100.000 professionals in the information, knowledge and communication sectors in Finland signed in 1994 a resolution of cooperation. This so called Resolution of Information, Knowledge and Communication Sectors states in its preface: "The information, knowledge and communication sectors are constantly developing as the need for information, knowledge and communication increases, technology improves, media are integrated and communication and data processing form networks. This is a universal trend. We, the undersigned, present in the following our joint national strategy for the development of the information, knowledge and communication sectors.

A forum will be established to promote cooperation and to discuss common issues in the information, knowledge and communication sectors."

The Finnish Resolution represents a long-heralded convergence between sectors hitherto considered distinct - information processing, communication, information services, broadcasting and other media - which seems now to have taken off.

8.2 Global Synergy Cases

8.2.1 Tokyo Resolution, 1994

The Tokyo Resolution on a Strategic Alliance of International Non-Governmental Organizations to serve better the world Community was presented to His Imperial Highness, Prince Akishino during the 47th FID Conference in Japan. The aim of the Resolution is twofold: to strengthen collaboration between information oriented NGOs and to establish a blueprint for the 21st century for all those organizations and institutions involved in one or other aspect of information provision. Seven "information principles" are outlined in the Resolution and, so far, 32 NGOs have signed in support of the Tokyo Resolution.

THE TOKYO RESOLUTION

We believe that a strategic alliance between all the information, knowledge and communication sectors will contribute to advancing the goals of our organizations, contribute to the solution of the world's problems, better serve the world community and intensify our collaboration with Intergovernmental Organizations.

8.2.2 Global Information Alliance, London, January 1995

24 participating organizations agreed on several matters, e.g.:

- ◆ The organizations of a joint workshop/seminar/symposium addressing the issue of lifelong learning and professional development.
- ◆ The development of a project monitoring trends (also forecasting and analyzing trends) in the information, communication and knowledge sectors.
- ◆ Possible cooperation on the British Library R&DD Information 2010 Report, a global report forecasting issues and trends in the information field and its impact on society.
- ◆ Sharing of professional codes of conduct/doces of ethics etc. between the partners.
- ◆ To hold a seminar/workshop/symposium on the issue of the information disadvantaged - information rich and poor etc.

8.2.3 G-7 Countries and the European Commission, Brussels, February 1995

The G-7 Conference "Global Information Society" was held in Brussels hosted by the EC. In the meeting participated many leading persons (e.g. Santer, Delors, Bangemann), US Vice President Mr. Al Gore, delegation of ministers from all the G-7 countries and 45 directors from information industry. In the chair's conclusion it is said that "Our action must contribute to the integration of all countries into a global effort. Countries in transition and developing countries must be provided with the chance to fully participate in this process as it will open opportunities for them: to leapfrog stages of technology development and to stimulate social and economic development."

It was also stated:

"OUR VISION CAN ONLY BE REALIZED BY MEANS OF COLLABORATION"

G-7 partners are resolved to collaborate on the basis of the following eight core principles in order to realize their common vision of the Global Information Society:

- promoting dynamic competition
- encouraging private investment
- defining an adaptable regulatory framework
- providing open access to networks

while

- ensuring universal provision of and access to services
- promoting equality of opportunity to the citizen
- promoting diversity of content; including cultural and linguistic diversity
- recognizing the necessity of worldwide cooperation with particular attention to less developed countries.

These principles will apply to the Global Information Infrastructure by means of

- ◆ promotion of interconnectivity and interoperability
- ◆ developing global markets for networks, services and applications
- ◆ ensuring privacy and data security
- ◆ protecting intellectual property rights
- ◆ cooperating in R&D and in the development of new applications
- ◆ monitoring of the social and societal implications of the information society.

G-7 Project Status Matrix - Theme Areas:

- ◆ Global inventory
- ◆ Global inter-operability for broadband networks
- ◆ Cross-cultural education and training
- ◆ Electronic libraries
- ◆ Electronic museums and galleries
- ◆ Environment and natural resources management
- ◆ Global emergency management
- ◆ Global healthcare applications
- ◆ Government online
- ◆ Global marketplace for SME's
- ◆ Maritime information systems

CAREER ORIENTED WORKSHOP

How to create a career strategy for every participant?

CASES IN ... INDUSTRY AREAS

Different cases in ... industry area.

LITERATURE AND OTHER SOURCES

Bangemann, Martin et al. "Europe and the Global Information Society". Recommendations to the European Council, Brussels, 26 May, 1994.

Barner, Robert: "Career Strategist's Model". The Futurist, October, 1994.

Bernhardt, Douglas " Perfectly Legal Competitor Intelligence". Financial Times, Pitman Publishing, London, UK, 1993.

Borchard, David C.: "Planning for Career and Life - Job Surfing on the Tidal Waves of Change". The Futurist, January-February, 1995, pp. 8-12.

Brockman, John R. "Information Management and Corporate Total Quality". Seminar "Quality Issues in the Information Sector", London, UK, 1993.

Champy, James "Re-engineering Management". Harper Collins Publishers, Inc., London, UK, 1995.

Champy, James and Hammer, Michael: "Re-engineering the Corporation".

Davidov, William H. and Malone, Michael S. "The Virtual Corporation - Structuring and Revitalizing the Corporation for the 21st Century". Harper Collins Publishers, Inc., New York, 1992.

Davidov, William H. and Malone, Michael S.: "The Virtual Corporation".

De Bony, Elizabeth: "Global Networks and Interoperability - A Priority in Europe's Move to the Information Society". I&T Magazine, published by the European Commission, Winter 1994-1995, No. 16, pp. 11-13.

European Commission "G7 Information Society Conference". Theme Paper, Brussels 25-26 February, 1995.

Global Information Infrastructure Commission GIIIC "1-Ways - Digest of the Global Information Infrastructure Commission - Forging a New Construct for Public and Private Sector Cooperation". January/February, 1995.

Horton, Forest Woody Jr. "Information Resources Management". Prentice-Hall, USA, 1995.

Horton, Forest Woody Jr.: "Infotrends", 1985.

International Federation for Information and Documentation"TRFD:Tokyo Resolution". Signed in Omiya, Saitama, Japan 11 April, 1994, on the occasion of the FID Centennial.

Karivalo, Merja and Launo, Ritva: "Trends in Information Services in Large Finnish Companies 1991". Information Culture and Business Performance. Åbo Akademi University, Department of Library and Information Science; Ginman, Mariam (ed.). Turku, Finland, 1993, pp. 41-48.

Kerckhove, Derrick de "From Global Village to Global Mind". The UNESCO Courier, February 1995, pp. 20-22.

Launo, Ritva: "Global Information and Global Information Superhighways". 4th BISCIM Conference, Beijing, China, 1994.

Launo, Ritva: "Partnerships through Global Multimedia Networking". Annual Conference of the American Society for Information Science, Chicago, USA, 1995.

Launo, Ritva: "Perspectives of Technological / Industrial Information". Instituto Brasileiro de Informacao em Ciencia e Tecnologia IBICT-Conference, Brasilia, 1993.

Lewis, Sara: "International Relations and the Information Society". I&T Magazine, published by the European Commission, Winter 1994-1995, No. 16, pp. 2-4.

McGee, James V. and Prusak, Laurence: "Managing Information Strategically". The Ernst & Young Information Management Series, John Wiley & Sons, Inc., 1993.

Obeng, Eddie & Crainer, Stuart: "Making Re-engineering Happen". Financial Times, Pitman Publishing, 1994.

Otala, Leenamajja: "Lifelong Learning based on Industry and University Cooperation - A Strategy for European Industries' Competitiveness". Helsinki University of Technology, Espoo, Finland, 1993.

Porter, Michael E.: "Competitive Strategy". The Free Press, New York, USA, 1980.

"Resolution of the Finnish Information and Knowledge Sectors". Helsinki, Finland, 1994.

Wilson, Tom: "Information Needs in Business". Information Culture and Business Performance, Åbo Akademi University, Turku, Finland, 1993.