
OICBS Operations Intellectual Capital Benchmarking System

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An Intellectual Capital Strategic Management Methodology

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Keywords. *Intellectual capital management framework, Benchmarking, Knowledge management, Strategic management..*

Abstract. *Researchers in the areas of sustainable competitive advantage have come to the conclusion that the only thing that gives an organization a competitive edge -the only thing that is sustainable is what it knows, how it uses what it knows, and how fast it can know something new. But if most agree on the key role of knowledge as a source of competitive advantage, very few know how to manage knowledge that produces value or Intellectual Capital in an efficient way. Moreover the process of value production could be divided into two big groups: the innovation process and the operations process. This paper is mainly focused on the operations process because it is the only fully developed in SME's. OICBS that stands for Operations Intellectual Capital Benchmarking System uses benchmarking techniques, and facilitates the process of learning from the best competitors. OICBS is at the same time a new strategic management method and a new strategic management tool that allows companies to benchmark core competencies or intellectual capital against the world class best competitors of the same business activity. OICBS is a framework built around the key competitiveness factors and criteria that determine competitiveness in the context of global markets. When using OICBS in an orderly systematic and repetitive way we obtain competitiveness Balance Sheets, that complement and perfect financial balance sheets and lead companies to leveraging intellectual capital. The system has been tested and successfully implemented in more than thirty European enterprises.*

1. The Internationalization of the Economy and the Globalization of Markets

It is no secret that over the last few years an extraordinarily important socio-economic phenomenon has changed the world we live in. This phenomenon consists of an unstoppable globalization of the economy and markets. Advances in transportation, communications, electronics, data processing, telecommunications and new materials have converted the world into a global village whose inhabitants are getting to know each other much better, and in which consumption patterns and production methods and techniques are becoming increasingly uniform. The very same McDonald's, Burger King, Body Shop, Ermenegildo Zegna and multinationals such as IBM, Samsung, Sanyo, Seiko and Nestle are found in all the built-up areas of the industrialized and developed countries. As a

result, similar appliances and utensils (washing machines, videos, refrigerators and PCs, for example) can be found in many homes, and the same occurs in offices and companies (fax, electronic mail, PCs and Windows 95). Multinational companies encourage this process and also promote strategic alliances, franchises and co-operative agreements.¹

The following is a list of factors that encourage the internationalization of markets and competition.

◆ Opening up of frontiers (USA, NAFTA, Mercosur, etc.)

- The circulation of products: International products.
- The increase in the number of new companies and the acquisition of companies.
- Greater number of multinationals.
- Increase in the number of business trips.
- International services for companies: Banking, transportation, consulting, auditing, etc.

◆ Communications.

- Worldwide telecommunications networks.
- The circulation of images.
- The rapid spreading of fashions: the 'snob' effect.
- Internationalization of tastes.
- Transnational segments of clients: Teenagers, yuppies and businessmen.
- World products.
- World brand names.
- Universal messages.
- Satellite communications.

◆ World products.

- The cost of technology, the profitability of R+D and investments.
- Manufacturing with a worldwide perspective.
- International supplying and purchases from beyond national borders.
- Internationalization of components and equipment.
- Internationalization of suppliers and outsourcing.

◆ Worldwide distribution.

- Rapid international transportation.
- Data transmission networks.
- Telecommunications equipment.
- World standards.
- Internationalization of services.

◆ Tourist Travel.

- Client - traveller.
- Discovery of products in other countries.
- The need for products to be present in other countries.
- Worldwide quality standards.
- Internationalization of services for travelers.
- Internationalization of hotels, banks, travel agencies, etc..

2. Company competitiveness in the new internationalized global environment.

All companies in the context we have described above are obliged to develop their activities in a highly competitive and increasingly international environment, regardless of their size and the country they are located in.

If they are to be successful in formulating strategies and taking decisions, all companies operating in this environment require systematic and up-to-date information on the following subjects:

- The competitive environment of their specific business activity.
- The competitive gap between them and the international market leaders.
- Knowledge of the causes of the competitive gap.

Figure 2.1 below illustrates the concepts discussed above.

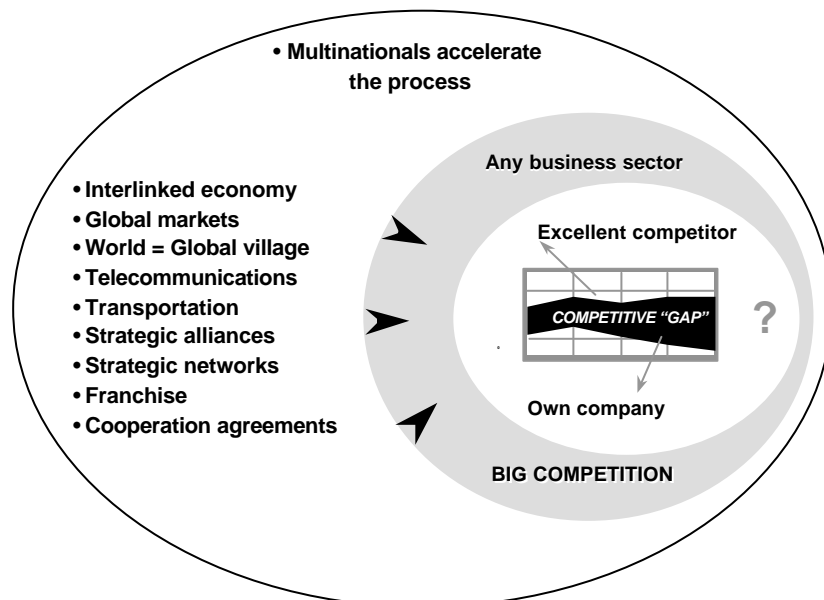


Figure 2.1 Global marketplace

3. Filling and reversing the competitive gap.

In accordance with what has been said, knowing the causes that produce the competitive gap between a company and the international market leaders in the same business activity is the key issue in order to increase company competitiveness.

3.1 Knowledge and Intellectual Capital as the only sources of sustainable competitive advantages.

Laurence Prusak in an article published in 1996² stated the following: “Researchers in the areas of sustainable competitive advantages have come to the conclusion that the only thing that gives an organization a competitive edge, the only thing that is sustainable, is what it knows, how it uses what it knows, and how fast it can know something new”. So, in other words, he gives the answer to the fundamental question: Which are the causes of the competitive gap? The answer obviously is knowledge.

But what does Laurence Prusak mean by knowledge?. His clear definition is³: “Knowledge is a fluid mix framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms”.

Nevertheless and before going ahead in this paragraph, we consider that it is important to establish a clear distinction between the concept of knowledge management and the concept of Intellectual Capital Management. In accordance with Kark M. Wiig⁴ “Intellectual Capital Management (ICM) focuses on building and governing intellectual assets from strategic and enterprise governance perspectives with some focus on tactics. Its function is to take overall care of the enterprise’s intellectual capital”. “Knowledge Management (KM) has tactical and operational perspectives, KM is more detailed and focuses on facilitating and managing knowledge related activities such as creation, capture, transformation and use. Its function is to plan, implement, operate and monitor all the knowledge-related activities and programs required for effective intellectual capital management”

So, summarizing we can say that Intellectual Capital refers to the intellectual assets from an strategic and global perspective and knowledge refers to the components of the intellectual assets from a tactical or operational perspective. In fact both concepts overlap, and they are in practice the same thing but taken from different perspectives. Concluding, the answer to the question that we put before on which are the causes of the competitive gap, could be either knowledge or intellectual capital, but because the causes in that case are obviously global and strategic we think that Intellectual Capital is definitely the most appropriate answer. We will also consider that the term intellectual capital is equivalent to core competencies and core capabilities and from now on we will use the terms “core competencies”, “core capabilities” and intellectual capital interchangeably. In doing so, we adhere to

Patrick H. Sullivan (2000) who defines intellectual capital as essential knowledge that can be converted into profits or knowledge that produces value.

3.2 The need to Benchmark. What to Benchmark?

Each specific business activity has the specific and relevant intellectual capital that explains the competitive gap. Once determined the specific intellectual capital we use it as a comparison basis in order to Benchmark the world best competitors in the same business activity. If we are for example in the fast food sandwiches industry and we consider Mc Donald's as the international best in class company, the relevant core competencies or the relevant knowledge or the relevant intellectual capital of Mc Donald's will be the model's constituents to benchmark. In this particular case the answer to the question what to benchmark is the core competencies of Mc Donald's.

Nevertheless in order to be more specific on the core competencies to benchmark we need to consider how value is created in the internal business process value chain. The business process value chain could be divided into two big groups: the innovation process and the operations process. The innovation process is made up of product design and product development and the operations process is made up of manufacturing marketing and postsale service. Figure 3.1 illustrates the business process value chain.

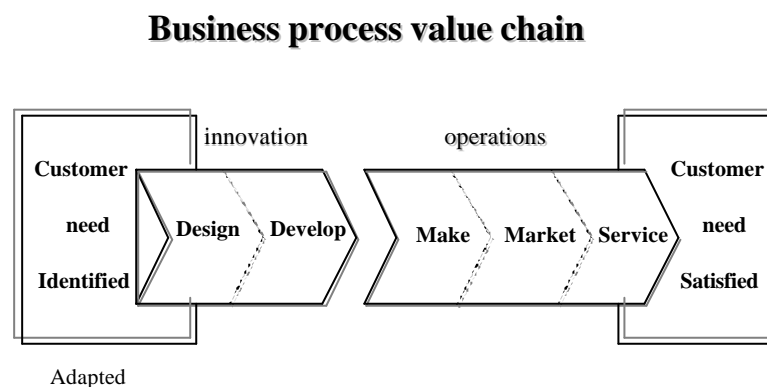


Figura 3.1 Adapted from Kaplan (1996)

Traditional perspective focused on the operations process. This short wave of value creation begins with the receipt of an order from an existing customer for an existing product or service and ends with the delivery of the product to the customer (Kaplan 1996)⁵. In this case value is created through operations core competencies or operations intellectual capital.

But the innovation process, the long wave of value creation, is for many companies a more powerful driver of future financial performance than the short term operations process. If this is the case they may require an organisation to create entirely new products and services that will meet the emerging needs of current and future customers. For many companies, their ability to manage successfully a multiyear product-development process or to develop a capability to reach entirely new categories of customers may be more critical for future economic success than managing existing operations

efficiently, consistently and responsively. In this specific case value will be created through innovation core capabilities or innovation intellectual capital.

This paper despite the growing importance in knowledge economy of innovation intellectual capital is fully dedicated to operations intellectual capital, because operations intellectual capital is still at the same time a very important issue for many companies and organizations and the basis for the development of innovation intellectual capital.

3.3 The OICBS (Operations Intellectual Capital Benchmarking System) framework.

OICBS is a framework that focuses on the operations process of the business process value chain. We have said in paragraph 3.2 that operations process represents the short wave of value creation. Nevertheless for all companies this short wave of value creation is extremely important. It is the present value creation tree that produces products and services, that once sold, give to the company the cash flow necessary to develop the future innovation value creation tree. At the same time operations core competencies of present value creation tree are in one way or another the basis of innovation core competencies that are the roots of future value creation tree.

The OICBS model is a model that is build on the core competencies that the best world competitor-company B in figure 2- of our company A, has. Nevertheless because the whole company A it is not homogeneous with the whole company B, we need to rely on the corresponding business units as the suitable basis of comparison.

Within each business unit the value chain mechanism gives way to the discovery of the core competencies that explain the success of the company B, business unit. These core competencies that flow from the products and processes of the value chain are the items to benchmark in order to know the causes of the competitive gaps.

OICBS framework evaluates or assesses the operations competencies that make possible the realisation of business units objectives that will lead to competitive products and services trough the appropriate processes. OICBS also assesses the operations infrastructure that supports all the business units of the company.

The assessment process is carried out on a double way. On one side we take as a reference benchmark the business unit objectives and goals, on the other side we take as a reference benchmark the equivalent business unit of the best world competitor.

See figure 3.2 for a better comprehension of the above explanation.

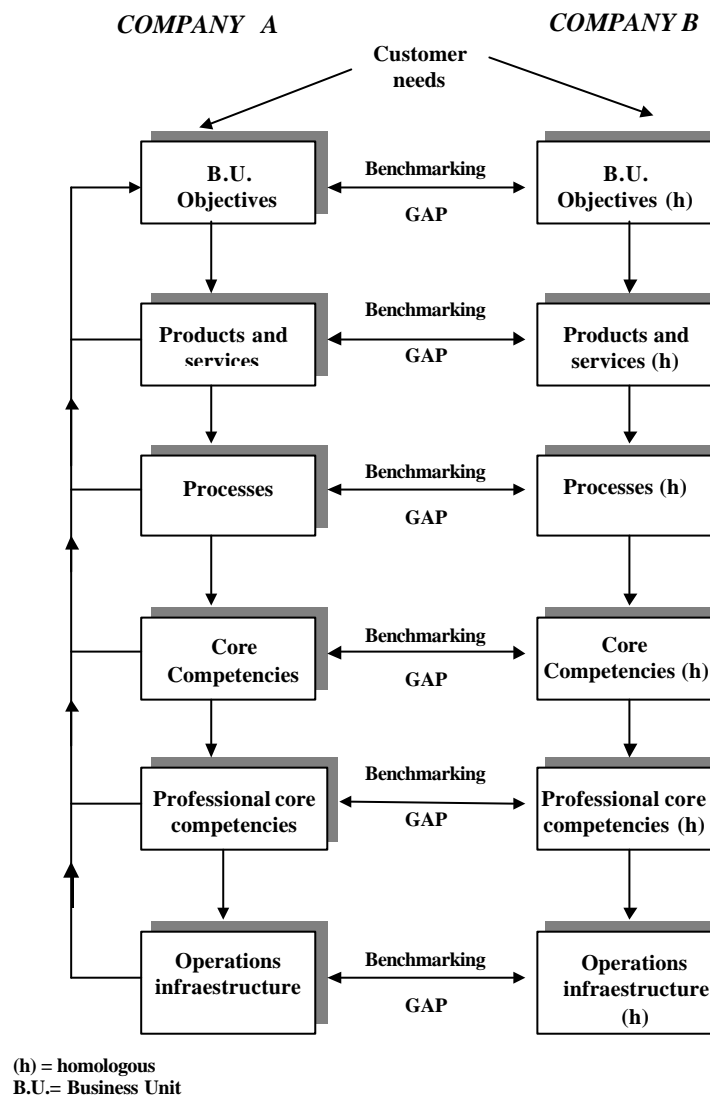


Figure 3.2 Operations Intellectual Capital Benchmarking System.

4. Building the OICBS model.

4.1 The competitive or excellent company in the context of the global market.

The modern theory of management provides the paradigms for the competitive or excellent company in the context of the global markets.

The following are some, but by no means all, of the most meaningful paradigms:

- Virtual Corporation.
- Network organization.
- Intelligent enterprise.
- Knowledge creating company.
- Learning organization.

- Horizontal organization.
- Innovative organization.

The human and organizational characteristics that shape the above paradigms can be summarized as follows:

- Multidisciplinary teams that sometimes run themselves.
- Work in networks (internal and external) supported by PC networks.
- Reduction of hierarchical levels (delaying).
- Greater autonomy and decision-making powers (empowerment).
- New role of managers as coaches.
- Investment in training and learning.
- General use of data processing and telecommunications as instruments affecting strategies, quality and productivity.
- Concentration on core business and core capacities.
- Outsourcing and new relationships with customers and suppliers.
- Managers become leaders (importance of vision).
- New non-financial indicators for evaluation.
- New skills and new personal development methods.
- New forms of remuneration and incentives.

The above mentioned paradigms and the human and organizational characteristics which shape them constitute the foundations which all companies inevitably have to rely upon if they want to achieve high standards in the extraordinarily competitive context of today's global markets.

But on top of the mentioned paradigms, there is the strategic management paradigm entitled: “The resource based view”. The resource based view fulfils the promise of the famous Kenneth R. Andrews strategy framework that defined strategy as the match between what a company can do (organizational strengths and weaknesses) within the universe of what it might do (environmental opportunities and threats).

The resource base view approach acknowledges the importance of company specific resources (tangible and intangible) and competencies, yet it does so in the context of the competitive environment.⁶ It sees capabilities and resources as the heart of a company's competitive position. Subject to the interplay of the three fundamental market forces: demand (Does it meet customers needs, and is it competitively superior?) scarcity (Is it imitable or substitutable, and is it durable?) and appropriately (Who owns the profits?).

Put another way, these paradigms and the concepts, principles, theories and techniques they contain constitute the current sources of inspiration for achieving entrepreneurial success.

We have included in the brief bibliography some of the most meaningful books written on the formulation of today's theory of entrepreneurial excellence.

4.2 The OICBS general framework

The paradigms of the competitive or excellent company in the context of the global markets mentioned in the previous paragraph provide us with the bases for constructing the OICBS general framework.

The framework is articulated around the following eight factors: (see figure 4.1, 4.2 and 4.3)

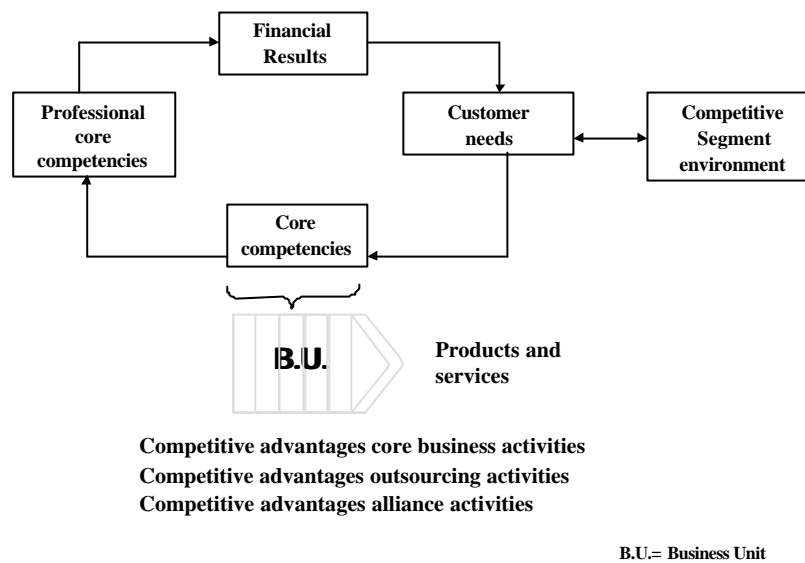


Figure 4.1 Business Unit Competencies

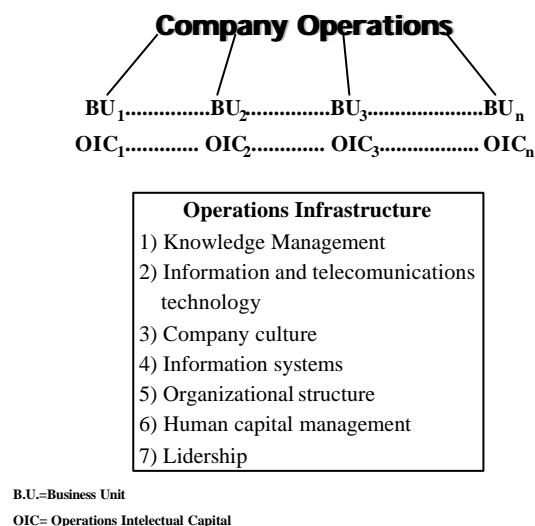


Figure 4.2 Company operations infrastructure

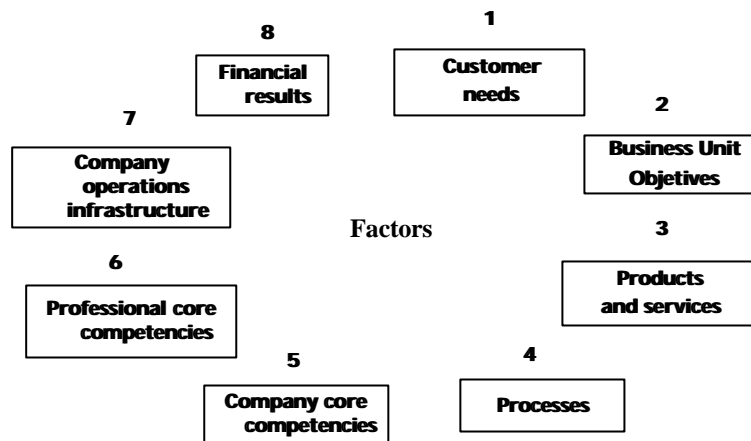


Figure 4.3 The eight factors framework

- **Customer needs.** Customer segment needs that the company expects to cover through the business unit activities.
- **Business Unit Objectives:** Business Unit activities lead to products and services through the corresponding processes using company and professional core capabilities and company operations infrastructure. The ultimate objectives of the business unit are the expected financial results through the satisfaction of customer needs.
- **Products and services:** Products and services with their attributes, characteristics, functions and embedded knowledge and technologies.
- **Processes:** Operations value chain activities that produce current products and services. These activities are made up of core business activities, outsourcing activities and strategic alliances and cooperation agreement activities. Competitive advantages will be generated mainly in the different value chain core business activities. Core competencies are mainly embodied in the core business activities of the value chain.
- **Company core competencies:** Essential knowledge or core competencies that make it possible and will give way to competitive advantages, unique processes and competitive products and services within the business unit.
- **Professional competencies:** Professionals, managers and support staff competencies and capabilities that will generate and perfect core competencies.
- **Company operations infrastructure:** operations infrastructure (mainly intangible assets) that the company has and that is for the use of the different business units.

The company operations infrastructure covers the following issues:

- a) Knowledge management.
- b) Information and telecommunications technology .
- c) Company culture.
- d) Information systems.

- e) Organizational structure.
- f) Human capital management.
- g) Leadership.
- **Financial results:** Expected economic and financial results from the business unit.

Figure 4.4 Complements and complete figure 3.2 and gives a full overview of the main elements that make up the OICBS framework.

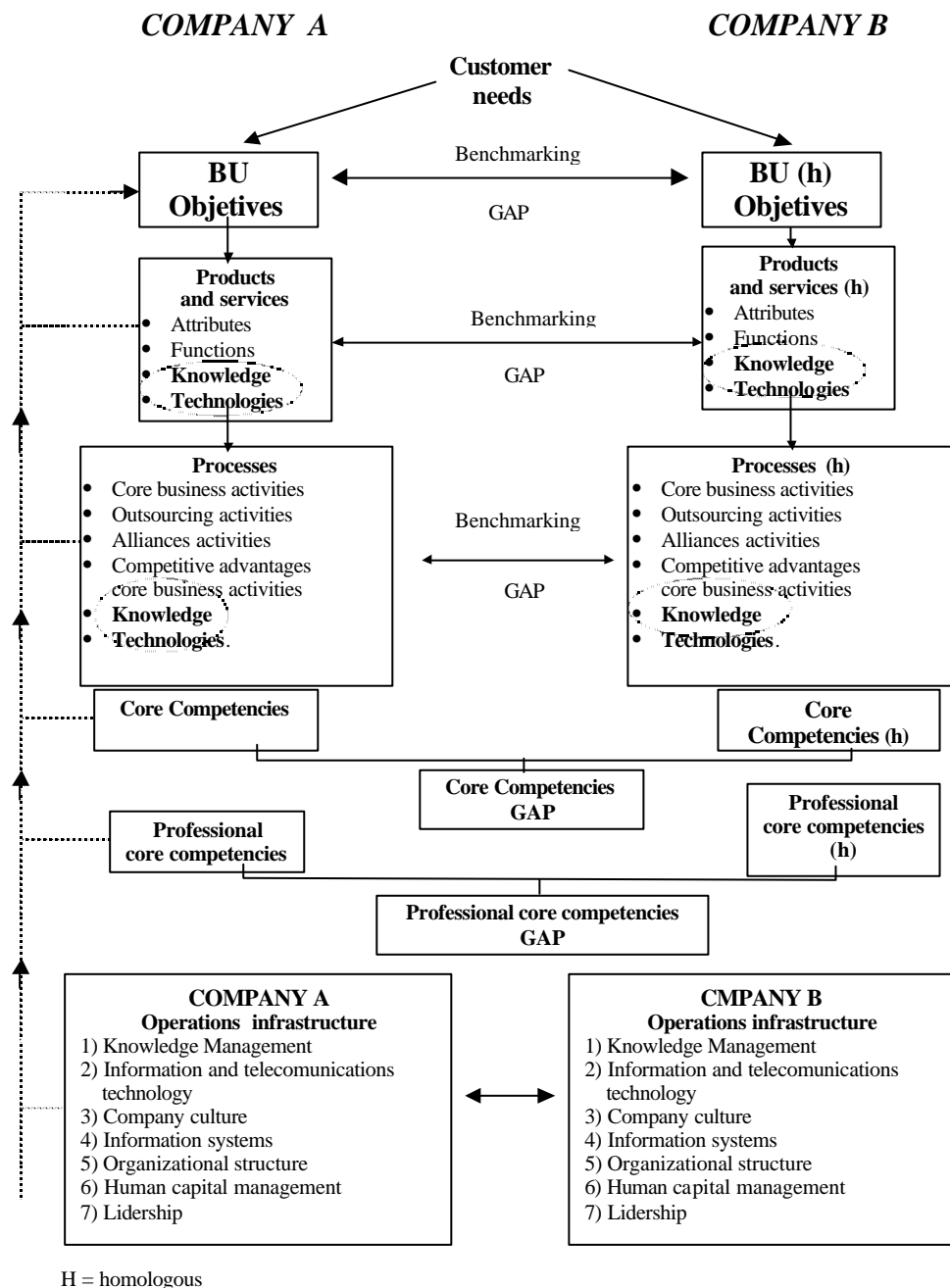


Figure 4.4 General OICBS framework

In paragraph 3.1 we mentioned that Lawrence Prusak stated the following: “Researchers in the areas of sustainable competitive advantages have come to the conclusion that the only thing that gives an organisation a competitive edge, the only thing that is sustainable is what it knows, how it uses what it knows, and how fast it can know something new”. In one word this only thing is core competencies or intellectual capital.

The eight factor framework that we have already described is in fact a flexible framework that allows the core competencies or essential knowledge identification and evaluation within each particular factor. By the same token the different components of the classical division of intellectual capital (human capital, structural capital and relational capital) can be assessed and appraised.

The eight factor framework explains how sustainable competitive advantages are achieved in final products and services that come out of the processes and operations. Briefly, they can be achieved in the following way.

Companies if they want to be successful they need to produce competitive products and services. Nevertheless competitive products and services are not easily achieved, a lot of work is needed to be able to gradually establish competitive advantages in the different core business activities of the value chain. Core competencies in the core business activities of the value chain produce products and services with competitive advantages and high knowledge or intellectual capital content.

Finally the acquisitions of core competencies and the accomplishment of all these competitive advantages is only possible by means of the actions of the different leaders (professional people) that decide on and carry out objectives and strategies and who shape business culture with their ways and methods.

4.3. From the general to the specific OICBS framework.

OICBS general framework that we have already described in paragraph 4.2 is a general framework that can be used to generate the specific OICBS framework suitable to a specific business context. OICBS general framework consist of 8 factors and each factor is composed of several criteria and each criteria is composed at the same time of several questionnaires.

We customize the ICBS general framework to a specific business context trough the criteria and questionnaires or choosing among the criteria and questionnaires the ones that best suit the specifications of a given business design. At the same time we give to the criteria and questionnaires the appropriate weight.

When filling the questionnaires the different benchmarking teams (learning teams at the same time) are able to define and evaluate the operations core competencies and within the core competencies the three main types of intellectual capital that are: human capital, structural capital and relational capital.

Given that a large part of the information (above all, on the best class competitor project) may not be known precisely, all the questions in all the OICBS questionnaires have a “response precision” box. By integrating the results of the response precision boxes, the OICBS method also permits us, to evaluate the degree of reliability of the benchmarking and its constituent parts, to establish plans for systematically improving information acquisition and to set up a competitive intelligence team in the company.

The following figure 4.5 draws the process above described.

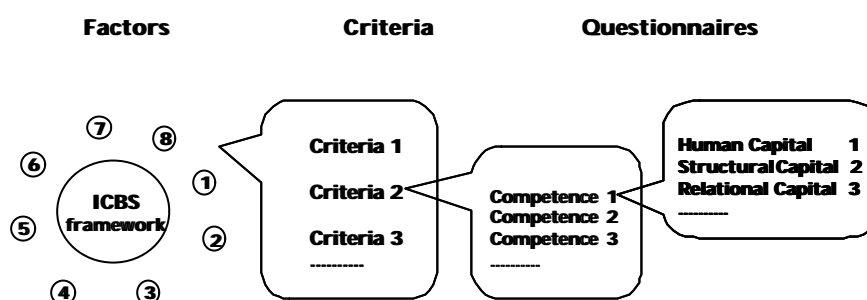


Figure 4.5 Specific OICBS framework

4.4 The key rol of strategic benchmarking in the framework construction.

As has been said before OICBS is both a new management method and a new management tool that allows companies to benchmark their operations core competencies against the world-class competitors in their sector. Nevertheless OICBS not only benchmarks core competencies but also processes (value chain sources of competitive advantages) and the products and services that the operations of the business unit turn out. Finally it also benchmarks operations infrastructure.

The 8 factors framework is used for moving from the general framework (general context) to the specific framework (specific business context).

We customize the general framework through two types of variables: the criteria and the questionnaires and through a benchmarking process that covers the activities of two value chains, the one that belongs to our company and the one that belongs to the best competitor.

The process of competitive benchmarking allows us to determine the specific competitiveness factors and criteria which are relevant in a firm business activity. These factors and criteria may also be termed key competitiveness drivers.

The questionnaires that are directly derived from the criteria allow us to evaluate and benchmark core competencies in the specific business context. Core competencies are at the same time made up of the three main classes of intellectual capital, that is to say human capital, structural capital and relational capital.

From better comprehension of the above see figure 4.6

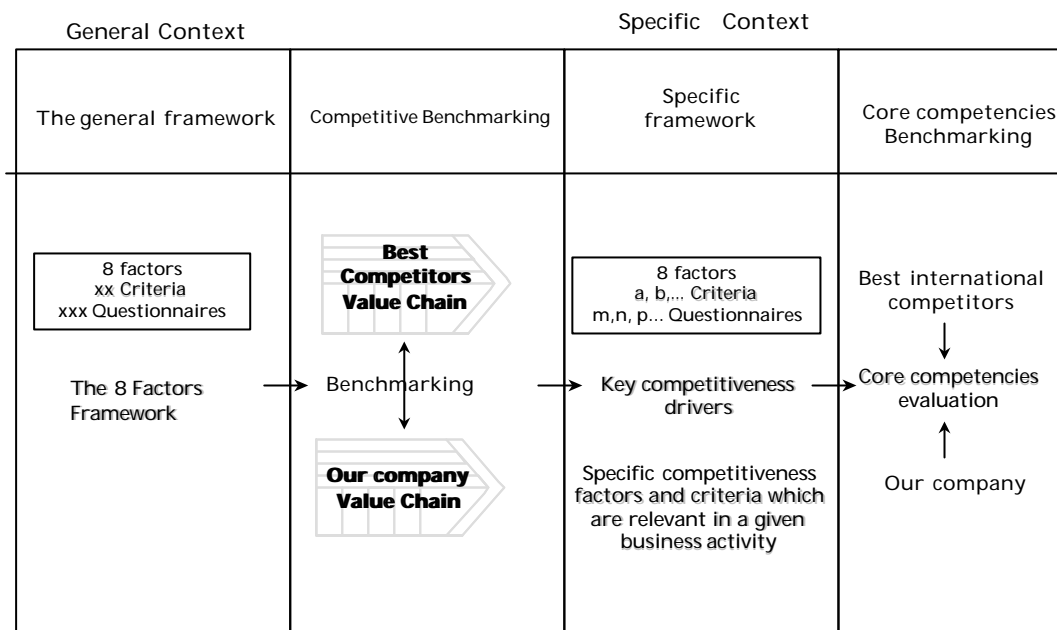


Figure 4.6: From general framework to specific framework.

5. OICBS Implementation process.

The following elements are involved in putting the OICBS method into practice:

- A general data base that contains all the possible criteria and questionnaires to be used. This means that each factor can be looked at in the greatest possible detail.
- A user-system interface that enables criteria and questionnaires to be adapted to the particularities of each company business segment.
- The successive responses to the personalized questionnaires are used to create the specific database for a given company.
- Specific software incorporating the factors, criteria, questionnaires and underlying theory and principles of excellence model enables us to process the information contained in the specific database and to obtain a series of outputs in the form of competitiveness figures, results and balances.

6. OICBS operations competencies balance-sheets.

The processing of questionnaires corresponding to each of the company competitiveness factors provides us with the operations competencies results and balance sheets. These results and balance sheets can be obtained for the company as a whole or for each competitiveness factor.

Some examples of balances and results are given below: (Figures 6.1, 6.2, and 6.3).

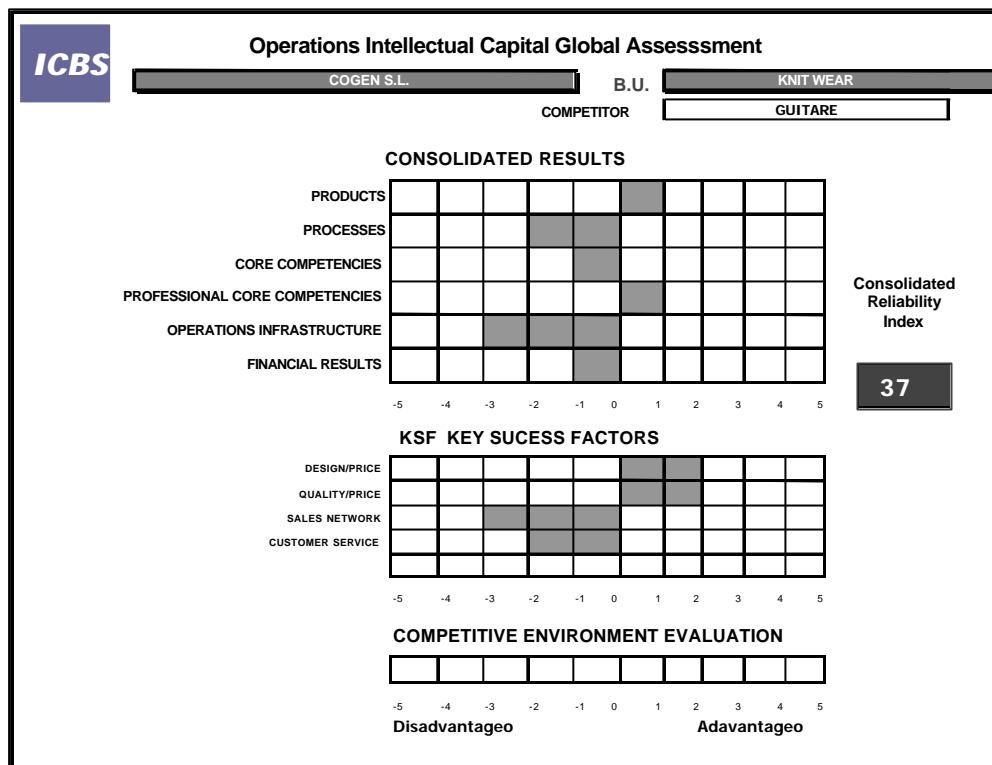
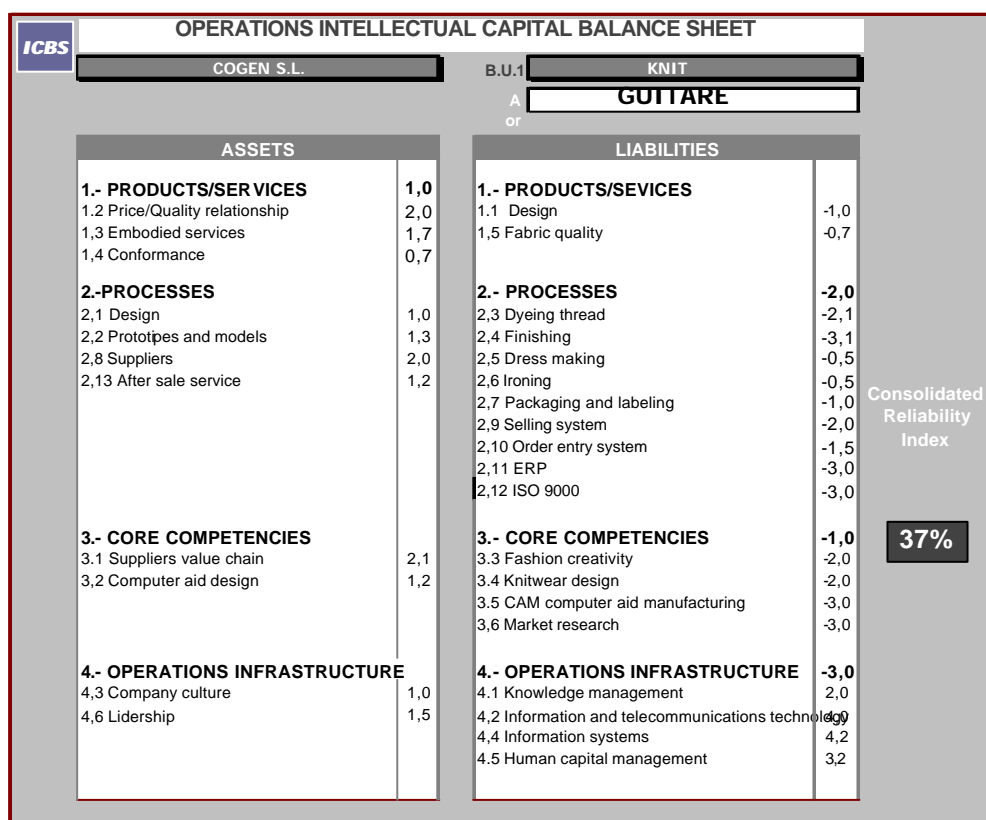


Figure 6.1: Operations Intellectual Capital Global Assessment.



Figures 6.2: Operations Intellectual Capital Balance-Sheet

OPERATIONS INTELLECTUAL CAPITAL BALANCE SHEET			
COGEN S.L.		B.U.1 KNIT	
		A or GUITARE	
ASSETS		LIABILITIES	
1.- PRODUCTS/SERVICES		1.- PRODUCTS/SEVICES	
1.2 Price/Quality relationship	2,0	1.1 Design	-1,0
1.3 Embodied services	1,7	1.5 Fabric quality	-0,7
1.4 Conformance	0,7		
2.- PROCESSES		2.- PROCESSES	
2.1 Design	1,0	2.3 Dyeing thread	-2,0
2.2 Prototypes and models	1,3	2.4 Finishing	-2,1
2.8 Suppliers	2,0	2.5 Dress making	-3,1
2.13 After sale service	1,2	2.6 Ironing	-0,5
		2.7 Packaging and labeling	-0,5
		2.9 Selling system	-1,0
		2.10 Order entry system	-2,0
		2.11 ERP	-1,5
		2.12 ISO 9000	-3,0
3.- CORE COMPETENCIES		3.- CORE COMPETENCIES	
3.1 Suppliers value chain	2,1	3.3 FASHION CREATIVITY	-1,0
3.2 Computer aid design	1,2	3.4 Knitwear	-2,0
4.- OPERATIONS INFRASTRUCTURE		3,3 Fashion Creativity	
4.3 Company culture		- Knowledge on fabrics	-2,0
4.6 Leadership		- Knowledge on printing and dyeing	-0,5
		- Knowledge on design	-1,0
		- Knowledge on prototypes and models	-2,0
		- Knowledge on manufacturing	-0,5
		- Knowledge on fashion trends	-1,0
		- Knowledge on exhibitions	-3,0
		- Knowledge on best designers	-3,0
		Consolidated Reliability Index	
		37%	

Figure 6.3: Operations Intellectual Capital Balance-Sheet (detail)

7. Benefits from using OICBS

The benefits obtained from the systematic and continued use of OICBS methodology are summarized below.

1. Learning from one's betters to surpass one's own competitive position.
2. Identifying the specific competitiveness factors and criteria which are relevant in a given business activity.
3. Through the competitiveness factors framework, enabling the identification, audit and benchmark of the core competencies or key intellectual capital that are the main sources of sustainable competitive advantages.
4. When using OICBS in an orderly systematic and repetitive way we obtain operations competencies statements and Balance Sheets, that complement and perfect finance balance sheets and lead companies to leveraging intellectual capital.
5. Selecting in a systematical and organised way the necessary information for evaluating relevant factors, core competencies or key intellectual capital.
6. Identifying the key areas in which in-depth benchmarking can be carried out in the future.

7. promoting organisational learning through benchmarking teams, assessment teams, communities of practice and strategic teams.
8. Introducing a common language for company managers when dealing with intangible and intellectual assets.
9. Measuring the reliability concerning the relevant information and the progress of acquiring this information.
10. Facilitating the work of the benchmarking and competitive intelligence teams.
11. Facilitating the work of the knowledge and intellectual capital managers.
12. Giving to the SME's managers access to core competencies and intellectual capital management in a systematic and organised way.

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