

The Balanced Scorecard in hospitals: an international survey

1st meeting – San Gimignano, 2-3 april 2007

Performance Measurement in Belgian Hospitals : a state-of-the-art

By Rima Rouhana, Chercheuse, Boursière de l'AUF et du CGRI,
University of Liege (Belgium)

Sarah Santin, Assistante, University of Liege (Belgium)

Didier Van Caillie, Professor, University of Liege (Belgium),

All from the Centre d'Etude de la Performance des Entreprises,
HEC Ecole de Gestion de l'Université de Liège

Contact : D.VanCaillie@ulg.ac.be

- Belgium: A Federal state divided into:
 - ▶ Regions : Wallonia, Flemish, and Brussels
 - ▶ And Communities: French, Flemish and German
- Accordingly, the healthcare sector is managed by laws (same as France)

- The funding of the Belgian health care sector rests on “**Mutuelles**” (“Mutual Companies”).

- Healthcare in Belgium is very complex, with different languages, cultures and a multi-faceted healthcare system (Agfa, 2006)

The Belgian Healthcare Sector

■ Overview:

- ▶ The hospital sector consists of:
 - Public (app. 40% of the hospitals), (30,000 beds out of 70,000)
 - Private non profit (app. 60% of the NPO)
 - Private profit sector (mainly homes for the elderly).
- ▶ Private hospital sector is well-known for its responsive, high quality, provision...

- ▶ Hospitals can be grouped into two types according to size and expertise:
 - Large university hospitals offering top-clinical care
 - Smaller, provincial hospitals
 - Border-region hospitals

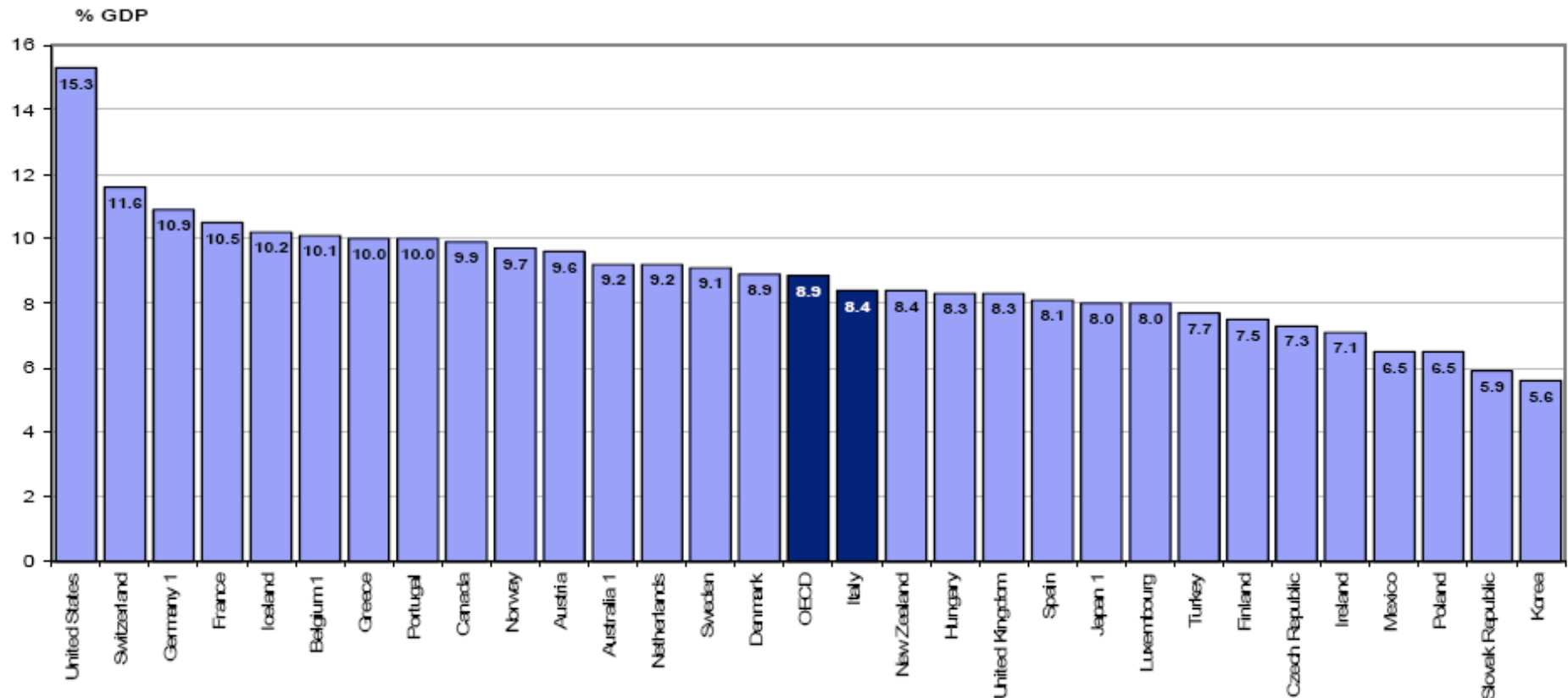
The Belgian Healthcare Sector

■ Hospitals in Belgium

General Hospitals	1987	2003
Population (Mio)	9.88	10.4
# Hospitals	369	150
# University Hospitals	8	7
# Locations		239
# Stay days (Mio)	20	16
# Admissions	1.48	1.73
Average LoS (Mio)	13.7	9.1

The Belgian Healthcare Sector

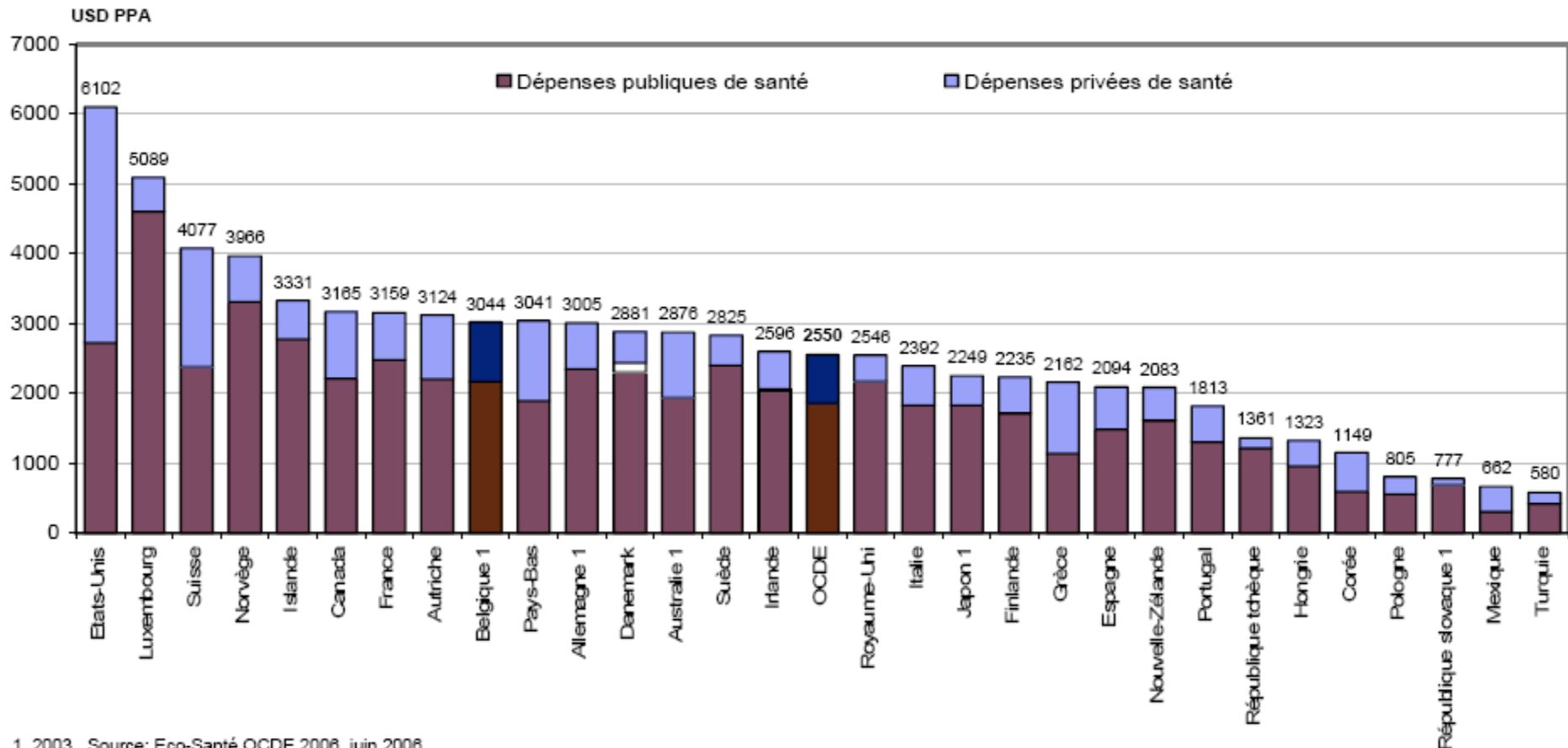
- Public and private health expenditure as a percent of GDP, 2004 (Source: OECD Health Data)



1. 2003. Source: OECD Health Data 2006, June 2006.

The Belgian Healthcare Sector

- Health expenditure per capita, public and private expenditure, 2004 (Source: OECD Health Data)



1. 2003. Source: Eco-Santé OCDE 2006, juin 2006.

The Belgian Healthcare Sector

- Resources in the health sector, 2004 (Source: OECD Health Data)
 - ▶ Number of physicians 4/1000 population,
 - above the OECD average of 3.0.
 - ▶ Number of Qualified nurses 6/1000 population,
 - a lower figure than the average of 8.3 in OECD countries.
 - ▶ Number of acute care hospital beds 4.8 per 1 000 population,
 - close to the OECD average of 4.1 beds.
 - reduction of average length of stays in hospitals
 - and an increase in the number of surgical procedures
 - ▶ Rapid growth in the availability of diagnostic technologies such as:
 - computed tomography (CT) scanners
 - magnetic resonance imaging (MRI) units
 - ▶ Over-equipped country

The Belgian Healthcare Sector

■ Source of Funds:

▶ **Ministry of the Public Health :**

● **Daily financing to cover the costs related to:**

- Staying days
- Nurses Salaries

▶ **INAMI/INASTI (Public Administration)**

● **Financing based on the services offered and medicines covered**

- Price by act negotiated at the National Institute of the Diseases and Disabilities (CNAM) between medical and mutual organizations ("normally" related to the costs of these acts)
 - » Fees
 - » Number of stay (Days)
 - » The drugs (ea the pharmaceutical fixed price)

▶ **Patient**

● **Moderating tickets and supplement**

The Belgian Healthcare Sector

■ Source of Funds:

Financing of the hospital expenditure (Million d'€)	Expenditure	Percentage
Compulsory insurance	6.317.397	85%
Patients	743.223	10%
Others (Industrial accidents, patients foreign, ...)	371.611	5%
TOTAL	7.432.232	100%

Sources : UNMS-ANMC-INAMI

The Belgian Healthcare Sector

■ Sector Specifications:

- ▶ Independent medical practice and free choice
- ▶ Fee-for-service payment
- ▶ Supplier-induced demand and abundance of supply
- ▶ Comparatively high cost sharing
- ▶ Budgets in individual hospitals
- ▶ Competition between sickness funds
- ▶ System aspects encouraging cross-border contracting – the Belgian side
 - Incentives for Belgian hospitals (under-occupancy)
 - Daily patient rates (do not cover real costs)
 - Interests of Belgian hospital doctors (paid on a fee-for-service)

The Belgian Healthcare Sector

■ Cross-Border CONTRACTS:

- ▶ Type of hospital stays 2002 in Belgian hospitals by nationality in EU-residents (N=16,383)

		Nationality						Total	
		Nationality EU		Non EU nationality		Nationality unknown		N	Col %
		N	Col %	N	Col %	N	Col %		
Type of stay	Normal hospital stay	6465	55.7 %	2190	77.8 %	1203	61.4 %	9858	60.2 %
	Day hospital (incl surgical)	5144	44.3 %	626	22.2 %	755	38.6 %	6525	39.8 %
Total		11609	100%	2816	100%	1958	100 %	16383	100%

Table 3: Type of hospital stays by region (N=16,383)

		Region						Total	
		Brussels		Flemish region		Walloon region		N	Col %
		N	Col %	N	Col %	N	Col %		
Normal hospital stay		2268	63.6%	5836	56.7%	1754	69.5%	9858	60.2%
Day hospital (incl surgical)		1297	36.4%	4459	43.3%	769	30.5%	6525	39.8%
Total		3565	100%	10295	100%	2523	100%	16383	100%

The Belgian Healthcare Sector

■ Challenges faced by this sector

▶ **Integrated Patient Care**

- Consistent level of care: all levels of patient care are connected
- Linking up the various departments across different care institutions
- Patient records are accessible at every stage.

▶ **Reducing costs**

- Patients have increased expectations of the healthcare they should be receiving.
- Pressure to reduce administrative costs
- Post-operative patients often require close monitoring to ensure long-term recovery and prevent any post surgical complications.
- Keeping someone in a hospital bed is costly.

▶ **Keeping staff skills up-to-date**

- Ensuring that healthcare professionals are kept fully up-to-date with developments in clinical information, procedures, practices and research is one of the key challenges confronting healthcare management.
- Increasing number of knowledgeable and sophisticated patients.

The Belgian Healthcare Sector

- Reforms in health-care systems: in pursuit of more efficiency
 - ▶ 1980s: Cost containment
 - In some respects, directed at enhancing quality of care
 - But main focus is on containing costs
 - ▶ 1990s: Efficiency and markets
 - Widespread voluntary insurance against co-payments in some systems, diluting incentive effect
 - ▶ 2000s: Quality or Community care
 - Objective is to keep patients out of unnecessary hospital care, and to minimize length of stay
 - Some crude attempts to limit very long lengths of stay (bed blocking)

■ Performance Measurement Methods:

- ▶ 1988: Measuring the Service-Quality: SERVQUAL (Parasuraman et al.)
- ▶ 1995: DRG = Diagnosis Related Group, (Fetter, 1986)
- ▶ 1998: Activity-based Costing, (Gosselin, 1997; De Rongé, 1998)
- ▶ 1999-2001: Integrating Hospital Informational System
- ▶ Tableau de Bord
- ▶ 2003: The Balanced Scorecard

■ Measuring the Service Quality

■ SERVQUAL

- ▶ a multiple-item scale for measuring consumer perceptions of service quality,
- ▶ developed by Parasuraman et al., 1988
- ▶ Questionnaire:

- 
- *Tangibles*
 - *Reliability*
 - *Responsiveness*
 - *Insurance*
 - *Empathy*

■ SERVQUAL, an empirical study:

▶ The factor loading matrix suggests the following labeling of the six factors (*Vandamme. R. & Leunis. J., 1993*):

● Tangibles:

- this factor refers to the meals served in the hospital and the atmosphere on the ward.

● Medical responsiveness:

- the ability to provide instant medical care and to respond appropriately to the patient's needs.

● Assurance I, II:

- the ability of the hospital staff to inspire trust and confidence during normal daily activities.
- the ability of the hospital to make the patient feel comfortable at the time of admission to the hospital.

● Nursing staff:

- the appearance and skills of the nursing staff in the hospital.

● Personal beliefs and values:

- the ability to respect the personal beliefs and values of each individual patient.

■ SERVQUAL, an empirical study:

▶ Conclusions

- The SERVQUAL instrument was designed to be applicable across a broad spectrum of services
 - Expectations and perceptions were measured within one single administration of the questionnaire
 - The number of items may have been too small to develop reliable measures of the different dimensions involved
 - Uniqueness of the services does not exist in a hospital
 - Analysis done on the patient level only
- ▶ The hypothesis that satisfaction and quality are closely related concepts in the context of hospital services cannot be rejected

■ DRG, (Fetter, 1981):

▶ Total cost calculation:

- Fixed and variable cost
- Indirect standardization of a group of patients (130 Group)
- Mean calculation of the minimum of patient's stay
- Cost spent over their period of stay

▶ The Performance will be equal to the GAP calculated between the observed value and the standard one.

▶ The performance will be displayed as a percentage number taking into consideration, the financial indicators only.

▶ Based on previous years reports, a future budget can be calculated.

■ Activity-Based Costing:

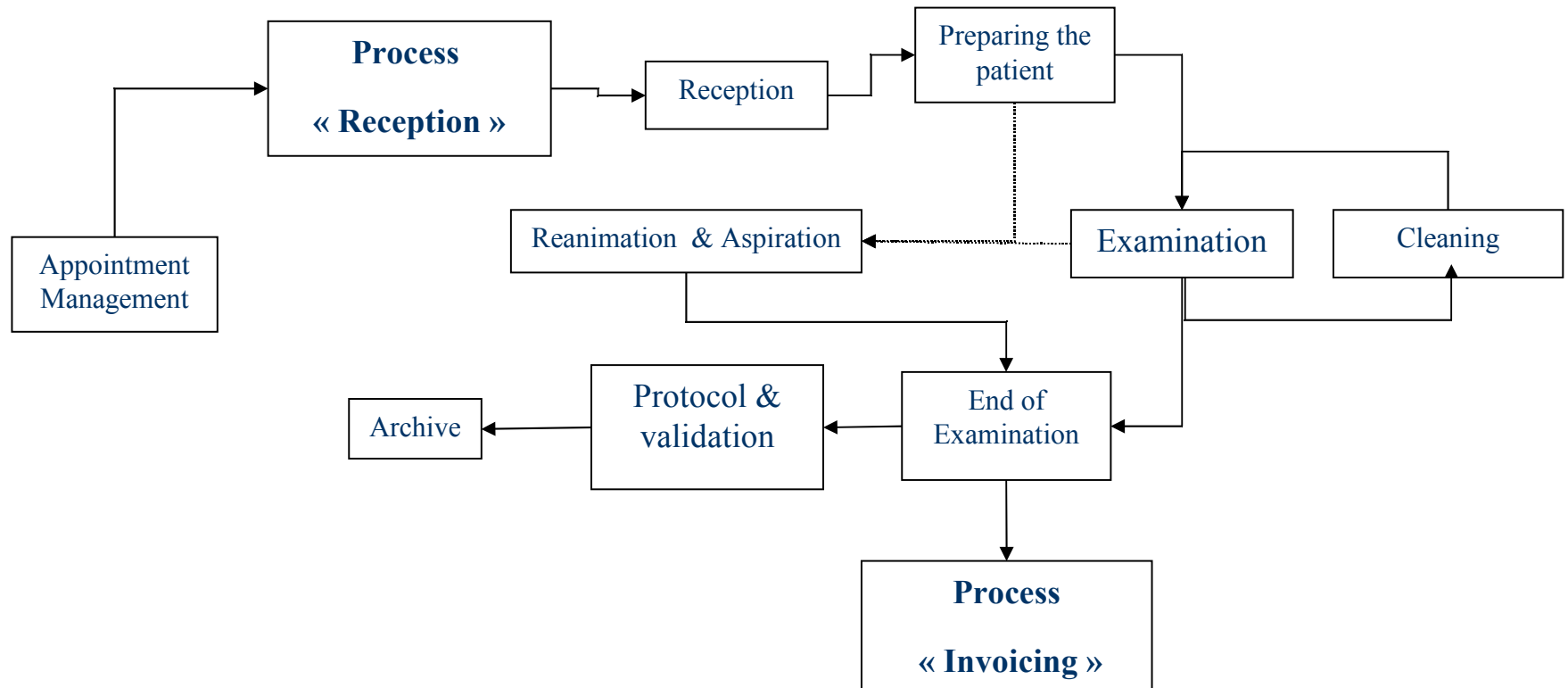
- ▶ Acquire a better vision of the consumption of resources within the various departments of the hospital,
- ▶ Divide the company according to its activities and process rather than by service,
- ▶ Activity = technique or technology, in the hospital sector (Garrot, 1995)

- ▶ Methodology:
 - Identifying hospital activities
 - Dressing the hospital process
 - Calculating Variable and fixed cost

PM and Belgian HCOs

■ Activity-Based Costing:

- ▶ Case Study:
- ▶ Centre Hospitalier du Bois de l'Abbaye et de Hesbaye



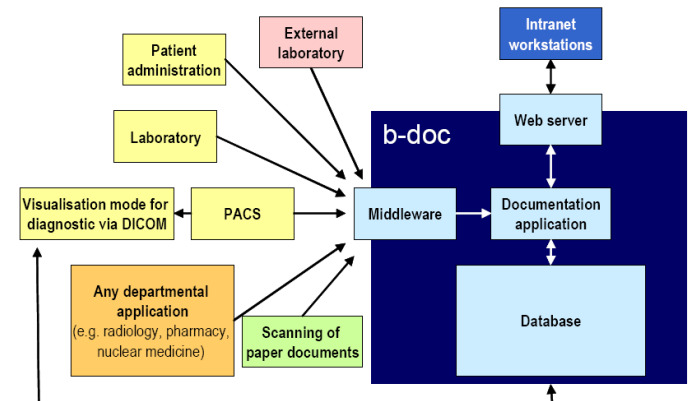
PM and Belgian HCOs

■ Integrating HIS (Hospital Informational System)

▶ 2001 – 2002, Ciges: AMBROISE PARÉ HOSPITAL, Mons (*ICT industries and e-Business, 2005*)

- Database System connected to the medical devices, and a user interface.
- Benefits:
 - Flexibility through integration
 - Reduced document loss
 - Round-the-clock access to documents
 - Increased trust

Figure 1: Integration of departmental and external information resources in b-doc



Source: Hôpital Ambroise Paré 2006, modified by empirica

■ Integrating HIS (Hospital Informational System)

- ▶ 1999, Microsoft: Leuven Hospital (Kesteloot Katrien, 1999)
 - Creating Link between: Hospital and Clinical Information Systems, Enterprise Resource Planning
 - Ability to provide:
 - Financial management
 - » including specific legislation for healthcare
 - Controlling
 - Asset management
 - Invoicing, receivables and health insurance
 - Payables and purchasing management
 - Internal requests, order forms and approval processes
 - Pharmacy (internal & commercial)
 - Catering (incl. electronic orders)
 - Increased security of information

■ Tableau de Bord (French System):

- ▶ A summary carrying out a point of situation in a given field and according to a particular diagram:
 - State of knowledge,
 - Evolutions (chronological statistics and recent evolutions),
 - Fixing of targets quantified to reach to improve the situations highlighted and strategies for this purpose

- ▶ Utility:
 - Reference document (bases for a debate): identifying the problems and presenting tracks for ad hoc policies.
 - Follow-up of the events, in order to found relevant decisions relating to the possible modifications of objectives, adaptation of the strategies and/or means necessary to release.

■ Tableau de Bord

- ▶ OVAR Method (Bescos, 2002; *Delmond, 2002; Löning 2003*)
 - Mission and Objectives clarification
 - Variables and indicators identification (Key Success factors)
 - Responsibility Analysis (Decentralisation)

- ▶ Constructing a TdB will be therefore on two levels :
 - Responsibility centers
 - Whole Organizations (Articulate and Link)

■ The Balanced Scorecard

▶ In the Hospital Sector:

- Complex Hospitals
- Need for a control and management system to:
 - Meet Long-term objectives,
 - Involve all the departments in calculating cost,
 - Create a Communication tool,
 - Measure the efficiency of the Service's quality delivered,
 - Attain customer (patient) needs (in a healthy environment),
 - Measure patients satisfaction,
 - Attract more Donors in a Non-Profit World,
 - Feed forward control,

▶ Why the BSC?

PM and the Balanced Scorecard

■ The Balanced Scorecard: CHU, Liège

▶ *The CHU Liege, A few figures*

- At the service of the people: 955 beds - 36,308 admissions - 274,630 hospitalisation days - 19,294 one day clinic - 469,091 medical consultations
- Positioning in the number of beds - 1st French - speaking university hospital, 4th Belgian hospital.

▶ *A public enterprise*

- Employment: approx. 4,200 persons
- Turnover: 280.081.680 EUR
- Annual investment: 11.200.510 EUR (average per annum)
- Equity funds (solvency of the enterprise):
From 0% in 1996 to 30% of total company resources at the end of 2002

PM and the Balanced Scorecard

■ The Balanced Scorecard: CHU, Liège

▶ The Need for Balance:

- More explicit acceptance of “*patients' rights*” (law of 22 August 2002),
- Development of management methods to promote “*the quality of patient care*”, (Institute of Medicine USA, ISO 9000 standards).
- Strategic plan with the aim of improving the overall performance by combining:
 - the quantitative approach (performance of clinical activities);
 - the qualitative approach (patient care);
 - the financial approach (rationalisation and planning of revenues, expenditure and investments);
 - the organisational approach (effectiveness of procedures - staff skills and motivation).

PM and the Balanced Scorecard

■ The Balanced Scorecard: CHU, Liège

▶ Organisational and Strategic Contract (COS Plan)

● **Quality of care**

- How do patients perceive the CHU and how can the CHU respond to their expectations?
- How can the CHU remain a university reference centre (Teaching and Research)?

● **Finance**

- How can we accomplish the missions entrusted to the CHU by the community?

● **Internal processes**

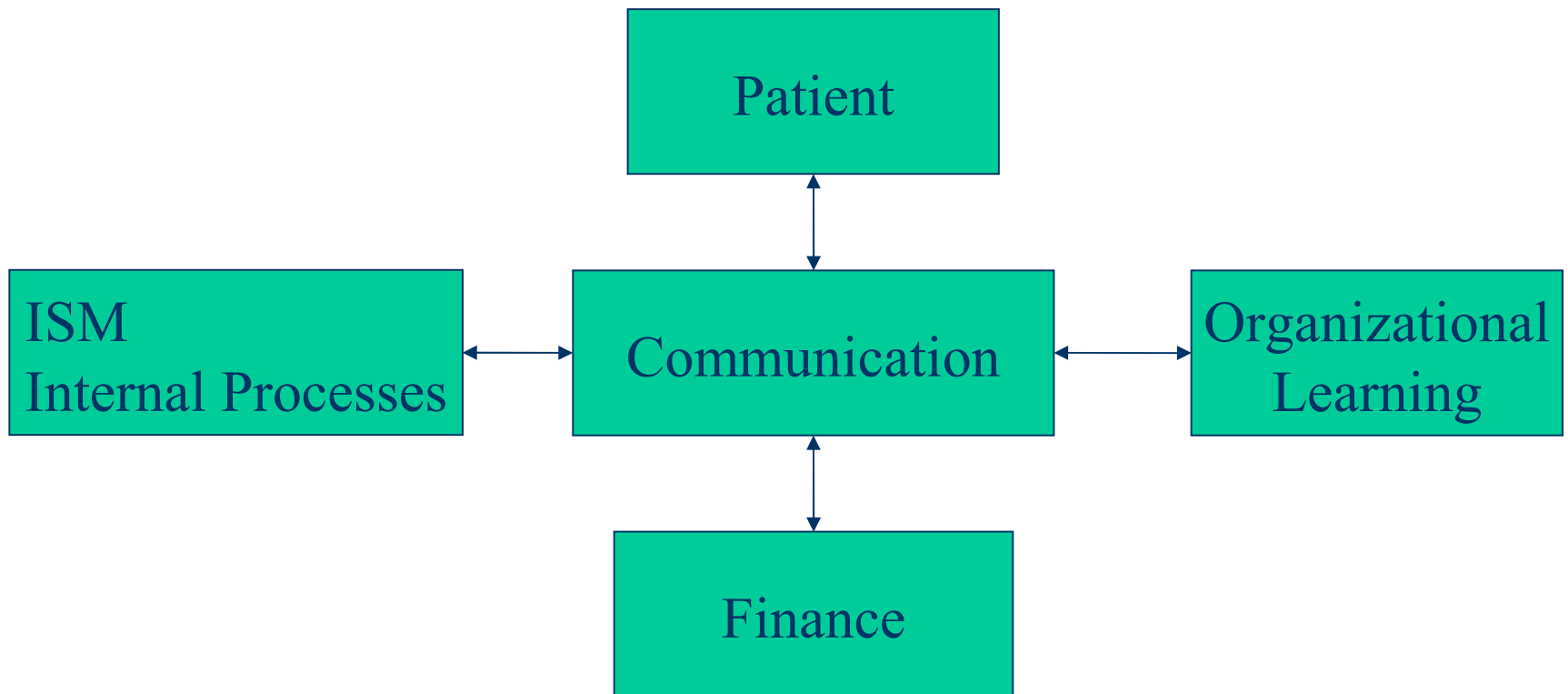
- How can we improve the functioning of the CHU?

● **Organisational learning**

- How can we enable CHU staff to adhere to the objective of the institution, which is to continue to improve and thereby create added value?

PM and the Balanced Scorecard

- The Balanced Scorecard: CHU, Liège
 - ▶ COS Plan: BSC



- The fee-for-service system has, given rise to problems because there has been no ceiling on how many services the hospitals perform.
 - ▶ Originally there has been no incentive to relate performance to actual needs.

- Regarding efficiency, it was the government's intention to cut down LoS and limit the number of hospital beds.
 - ▶ Minimum hospital size of 150 beds.
 - ▶ Mergers, and some hospitals simply had to close down.

- Since 1994, Belgium changed to All Patients DRG (AP-DRG).
 - ▶ View to linking average lengths of stay for the hospitals (adjusted for patient group characteristics) with the funding of the hospitals.