BUSINESS PROCESSES MANAGEMENT AND INFORMATION SYSTEMS

METHODOLOGIES OVERVIEW AND CHALLENGES - A HIGHER EDUCATION INSTITUTION'S FRAMEWORK

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Agenda

Introduction

Motivation and challenges for HEI's

A Higher Education Institution IS: IPS Information

 People and Processes

Dynamic Business Processes Approaches

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The Business Processes Framework for HEIS (BPFHEIS)

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INTRODUCTION

Organizations are dependent on IS to support business processes- extremely important to business success, to make decisions that are aligned with the organization's strategy.

Does organizations and institutions have all the same kind of challenges and characteristics and can adopt existing business processes approaches?

To understand the HEI business processes we have studied different kinds of approaches to business processes modelling and design

Creation of a Framework merging Hoshin Kanri matrix with the alignment between the Strategy and Business Information Systems, BPM, SOA and the SPF Framework a

Definition of methodological aspects in order to validate this framework using one of IPS schools - Superior School of Health (ESS).

MOTIVATION AND CHALLENGES FOR HEI'S

In the last two decades, computer science revolutionized the communication and the access to the information, opening new challenges to the organization of the work and the business processes related to education and learning in HEI – the "new school".

A school in its essence "sells" the acquisition of abilities and generates knowledge. Schools not only need to have one politics of knowledge management, but also to access the applications that allow them to manage the knowledge – its main capital.

IT will have to support and to facilitate the management of the activities and business processes, allowing not only the allotment of resources, but also the coordination of the business processes and activities allowing the creation of top level indicators..

MOTIVATION AND CHALLENGES FOR HEI'S

HEI are institutions that take on very specific characteristics deriving from its activities, its size, or even its management framework and autonomy that the law provides.

With **organizational structures unclear, inflexible, and difficult to define and with very weak lines of authority,** decision-making processes have been very tightly hemmed in by different collective bodies mostly independent of each other and often with diametrically opposed views on the objectives of institution.

HEIs are being **evaluated according to the quality of performance, measuring the degree of compliance of its mission, through performance parameters of action and results.**

According to A3ES (Agency for evaluation and accreditation), the Portuguese institutions are subject to evaluation and accreditation in order to be entered into the European system of quality assurance in higher education.

With the "Bolonha Process" the institutions may be subject to comparisons and rankings mechanisms, and quality performance, very important factors to get a good position.

A HIGHER EDUCATION INSTITUTION IS: IPS INFORMATION SYSTEMS

Setúbal Polytechnic Institute (IPS), a public institution of higher education, was created in 1979, and includes the Presidency Services, a Welfare Social Service and five Colleges that offer a range of graduate courses in different areas such as Technology, Education, Business Administration and Health Care.

The institution has more than 6000 students, 505 teachers and 169 technical and administrative collaborators.

The students from IPS mainly reside far from the school and many of them work during the day and study at night. It would be a competitive advantage to give them access to lectures, as well as, all important academic data – SIGARRA from Porto University was our choice!

Usually top management defines the strategies looking for the results and not to the needs. One way to allow doing this is to review the processes and the "people".

A HIGHER EDUCATION INSTITUTION IS: IPS INFORMATION SYSTEMS

SI-IPS implementation adopted, because of political, financial and organizational factors, was the adaptation of each organic unit to the IS, and this brought **a problem** – the system was **adapted** to each organic unit instead of potentiating the harmonization of all the existing processes.

This can be a sign that the organic units do not have clean structured procedures. IPS is betting on improving the quality and in the management of business processes.

Necessity to create valuable indicators, allowing top management to control the processes - they only can control the processes that have defined or someone defined for them.

On IPS exists orientation to results, rather than guidance on process and quality.

PEOPLE AND PROCESSES

Integrated Processes
- Strategic Management and Organization Development
- Organization Management and Human Resources
- Global Quality Management
- Knowledge Management

Macro Operational Processes
- Teaching / Learning
- Research & Development
- Service Delivery

Support Processes
- Organizational Learning
- Administrative and Financial Management
- Infrastructure

DYNAMIC BUSINESS PROCESSES APPROACHES – DBPA

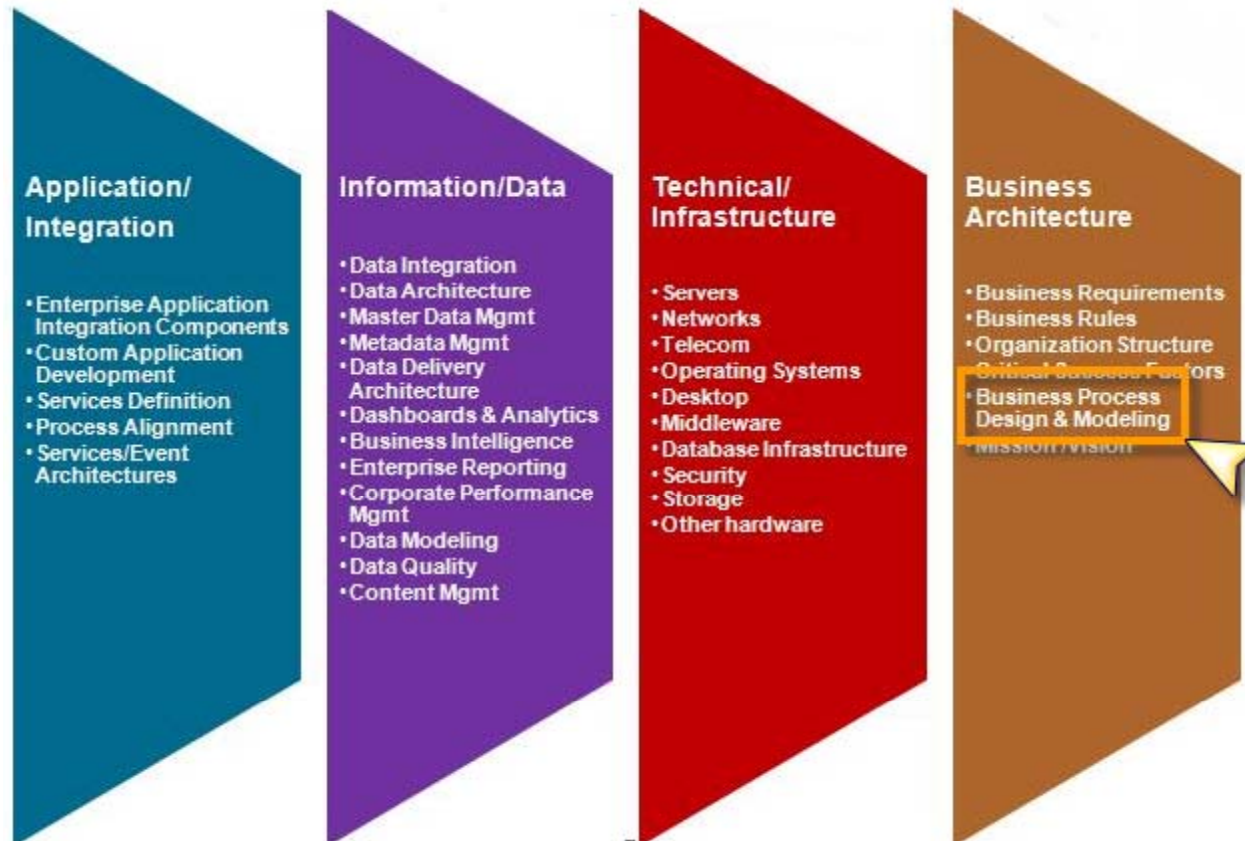Strategic Planning in the context of Enterprise Architecture

BPM

SOA and BPM

# DBPA – Strategic Planning in the context of Enterprise Architecture

☐ Enterprise architecture is the organizing logic for business processes and IT infrastructure reflecting the integration and standardization requirements of the firm's operating model" (Weill, 2007).

Application/Integration
- Enterprise Application Integration Components
- Custom Application Development
- Services Definition
- Process Alignment
- Services/Event Architectures

Information/Data
- Data Integration
- Data Architecture
- Master Data Mgmt
- Metadata Mgmt
- Data Delivery Architecture
- Dashboards & Analytics
- Business Intelligence
- Enterprise Reporting
- Corporate Performance Mgmt
- Data Modeling
- Data Quality
- Content Mgmt

Technical/Infrastructure
- Servers
- Networks
- Telecom
- Operating Systems
- Desktop
- Middleware
- Database Infrastructure
- Security
- Storage
- Other hardware

Business Architecture
- Business Requirements
- Business Rules
- Organization Structure
- Critical Success Factors
- Business Process Design & Modeling
- Mission/Vision

DBPA – Strategic Planning in the context of Enterprise Architecture

- Enterprise Architectures have mechanisms to ensure alignment between information systems and the strategic objectives of the organization.

- A method that involves the application of a set of principles and models to understand artefacts that are essential in the organization
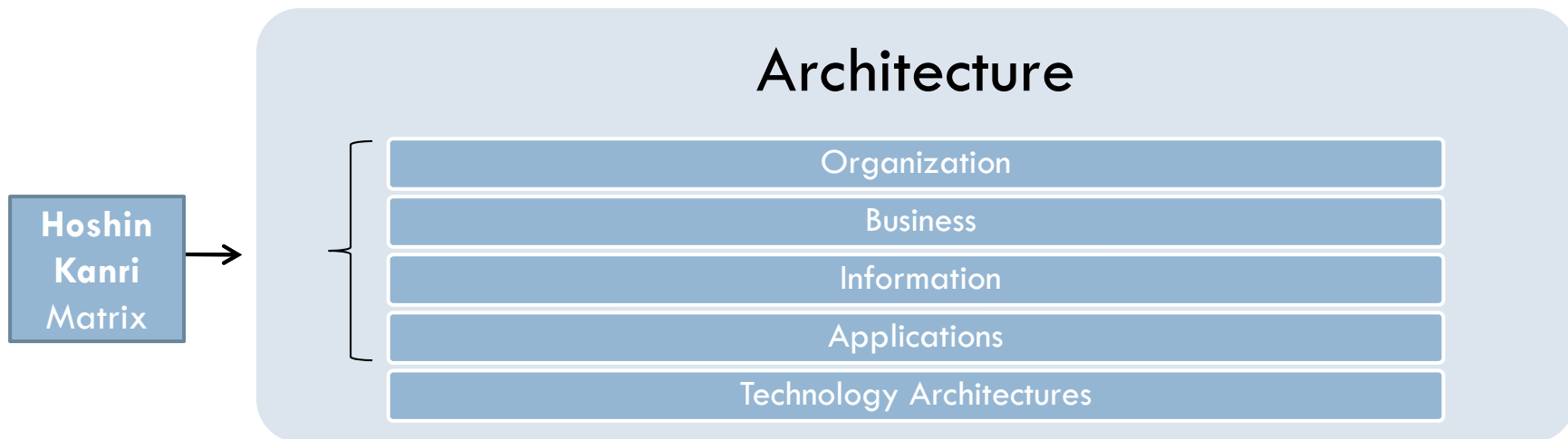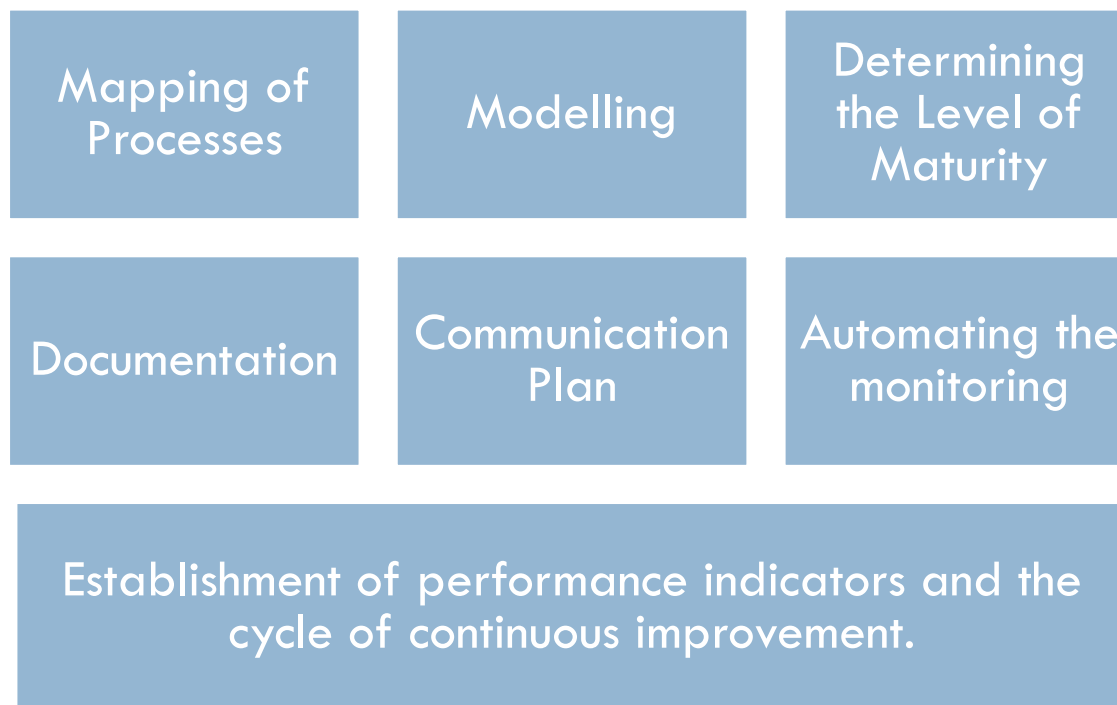
Architecture

| Organization |
| Business |
| Information |
| Applications |
| Technology Architectures |

Hoshin Kanri Matrix

Hoshin Kanri matrix with the alignment between the Strategy and Business Information Systems
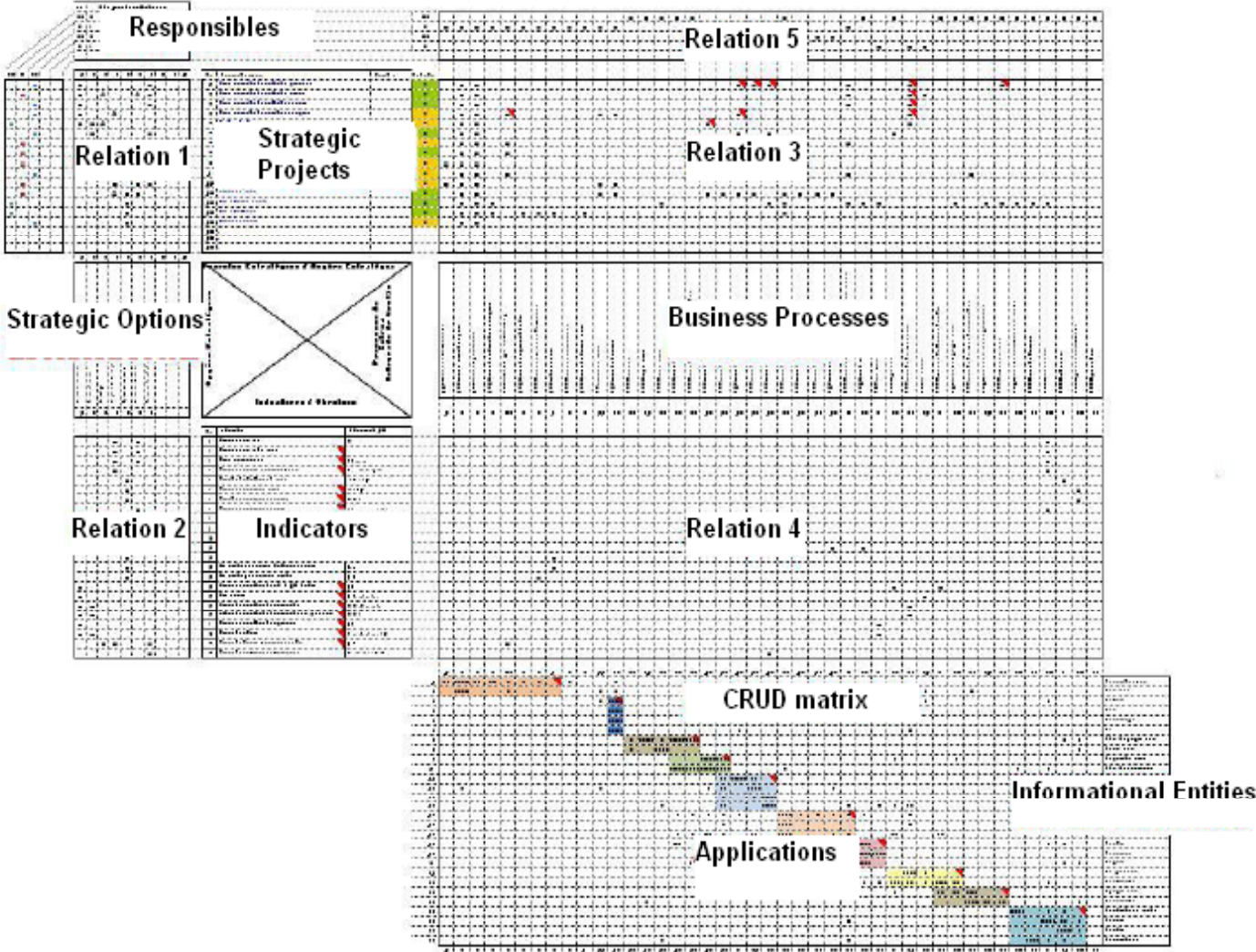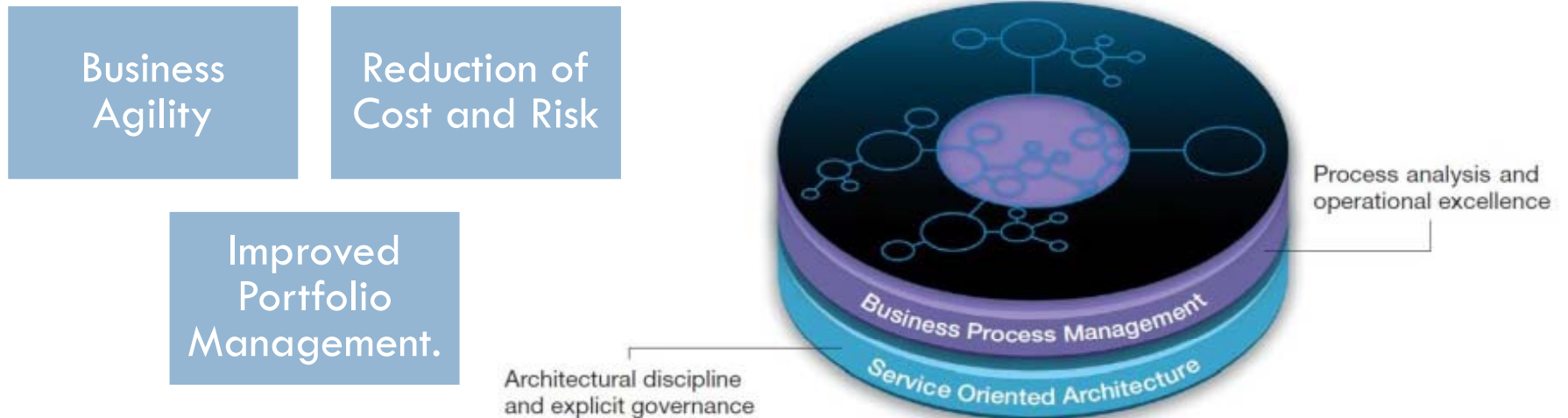
DBPA - Business Process Management (BPM)

☐ Provide the alignment of business processes with the strategy, with goals and create a value chain for the organization.

Mapping of Processes	Modelling	Determining the Level of Maturity
Documentation	Communication Plan	Automating the monitoring

Establishment of performance indicators and the cycle of continuous improvement.

DBPA – Service Oriented Architecture (SOA)

☐ It is centered on the alignment between IT and the business objectives

Business Agility

Reduction of Cost and Risk

Improved Portfolio Management.

Process analysis and operational excellence

Business Process Management

Service Oriented Architecture

Architectural discipline and explicit governance

DBPA - SOA and BPM

SOA
- Service Providers
- Web Services

BPM
- Flexible and Dynamic Process Management

Synergies

+
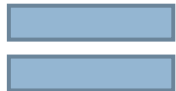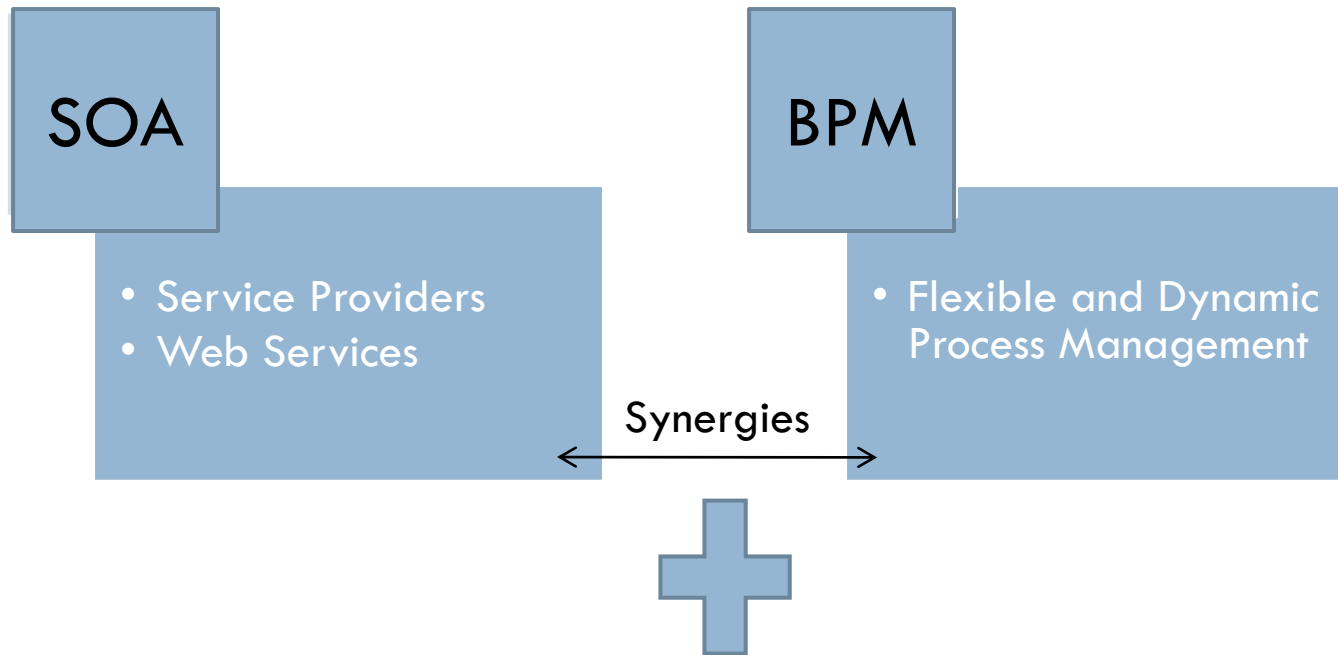
= Dynamically Optimize Investments, Drive Operational Excellence and Manage Business Risk.

OTHER APPROACHES - OA

Organisational Semiotics - OS

Dynamic Essential Modelling of Organizations - DEMO

Language Action Perspective - LAP

Theory of Organized Activity — TOA

Semiotic Pentagram Framework - SPF

OTHER APPROACHES - OA

Organisational Semiotics - OS

Seeks to present new and useful ways to **understand human** information and communication systems from an organisational perspective

Emergent discipline whose purpose is to study:

Organisational context

- Nature
- Characteristics
- Functions
- Effects of information and Communication

OTHER APPROACHES – OA

Dynamic Essential Modelling of Organizations – DEMO

Cross-disciplinary theory for describing and explaining the **action of organisations**

"…communication is a kind of action in that it creates commitments between the communicating parties…", Fernando Flores

The business transaction concept

action   interaction   transaction
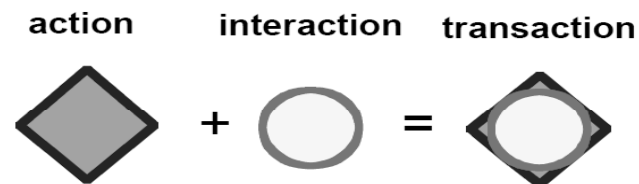
OTHER APPROACHES - OA

Language Action Perspective - LAP

Communication is exchanging sentences, expressing some proposition with the aim of creating commitment between the parties

- Emphasizes how people communicate
- What people do while communicating
- How language is used to create a common shared reality
- How people use communication to coordinate of their activities

OTHER APPROACHES - OA

Theory of Organized Activity – TOA

Based on **'human' activities** which occur within every organization or business system

Human action or act are the key element for the structuring and planning of all activity processes

- Computers and Information Technology is just a supporting tool

OTHER APPROACHES - OA

Semiotic Pentagram Framework – SPF
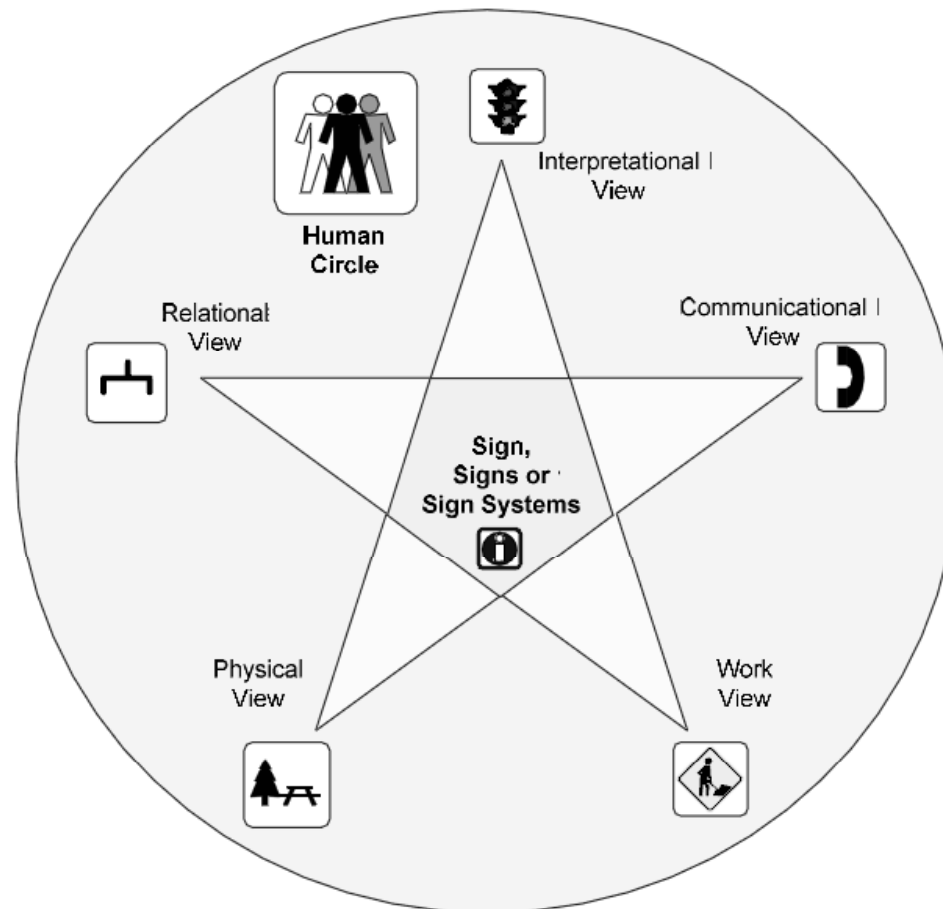
Focus on **the human factor**

Alternative sign model with five different views of the sign:

- Interpretational
- Relational
- Communicational
- Physical
- Work

OTHER APPROACHES – OA

Semiotic Pentagram Framework – SPF

OTHER APPROACHES – OA

Semiotic Pentagram Framework – SPF

Interpretational View

- A passive interpretation of signs where the sign already exist and its possible creation is not the emphasis of the analysis

Physical View

- Where emphasis is on a material view of the signs with less attention to any source of meaning from the signs being carried

OTHER APPROACHES - OA

Semiotic Pentagram Framework - SPF

Relational View

- Concerned with all kinds of relations between signs where they distinguish here between formal relations and informal relations
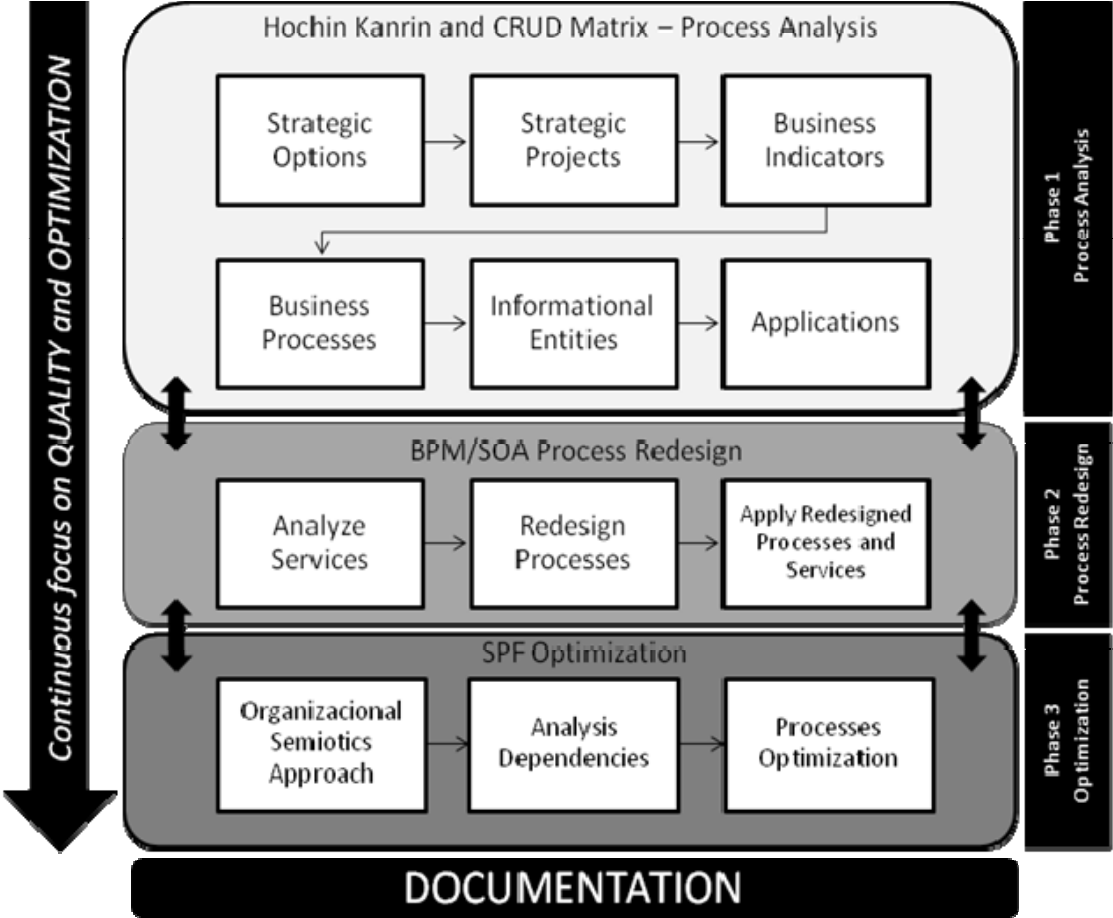
Communicational View

- The concern here is to communicate, so signs are studied from their use within a communication perspective

Work View

- A study on the relation between signs and the common activities or work practices

THE BUSINESS PROCESSES FRAMEWORK FOR HEIS (BPFHEIS)

THE BUSINESS PROCESSES FRAMEWORK FOR HEIS (BPFHEIS)

Phase 1:

- Define the strategic options and strategic projects
- Identified the top-level indicators that allow monitoring development of strategic goals
- Describe the business processes
- Identification of informational entities
- Identify the applications (with CRUD matrix)
- Create a survey to map the existing processes, with the matrix Hochin Kanri and CRUD Matrix.

Phase 2:

- Analyze services supported by SOA (Service Oriented Architecture)
- Re-design the processes with tools like BPMS (Business Process Management Suite)
- Apply Redesigned Processes and services

Phase 3:

- Use Organisational Semiotics - SPF approach to relate human and technology factors
- Analyze the dependencies
- Processes Optimization
- Create a survey that allows evaluating the optimization and increasing quality of processes.

FUTURE WORK

Application of this framework (BPFHEIs) on a high school of Setúbal Polytechnic Institute (IPS) - Superior School of Health – using a set of critical processes

Study this case with the objective to add internal quality – coordination between Business Processes and Quality Processes

Make this case study an example for all organic units of IPS

CONCLUSIONS

This framework enables a processes oriented approach to the institutional strategy, giving a set of very useful business indicators to help decision making in HEI.

The application of the framework may ensure business processes management optimization and quality towards the success of HEI information systems.

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THANK YOU!!