Business Intelligence & Business Process Management

Course description

Prof. Paola Velardi

Prof. Claudio Di Ciccio

Business Intelligence

- The term **Business Intelligence (BI)** refers to technologies, applications and practices for the collection, integration, analysis, and presentation of business information.

- The purpose of Business Intelligence is to **support better business decision making**.

- Essentially, Business Intelligence systems are data-driven Decision Support Systems (DSS).

http://olap.com/learn-bi-olap/olap-bi-definitions/business-intelligence/

Business Process Management

- Whether they involve distributing goods to customers, collaborating with suppliers or coordinating the efforts of employees, business processes are **the foundation on which rest a business's products, services and brands**.

- Business process management (BPM) is a methodology (with related tools) to ensure that those processes support a common set of goals and objectives.

- BPM is about improving processes and implementing systems that enable the improvement.

- **Processes cross organizational boundaries**; that is, they normally occur across or between organizational subunits. Processes are **generally independent of formal organizational structure**.
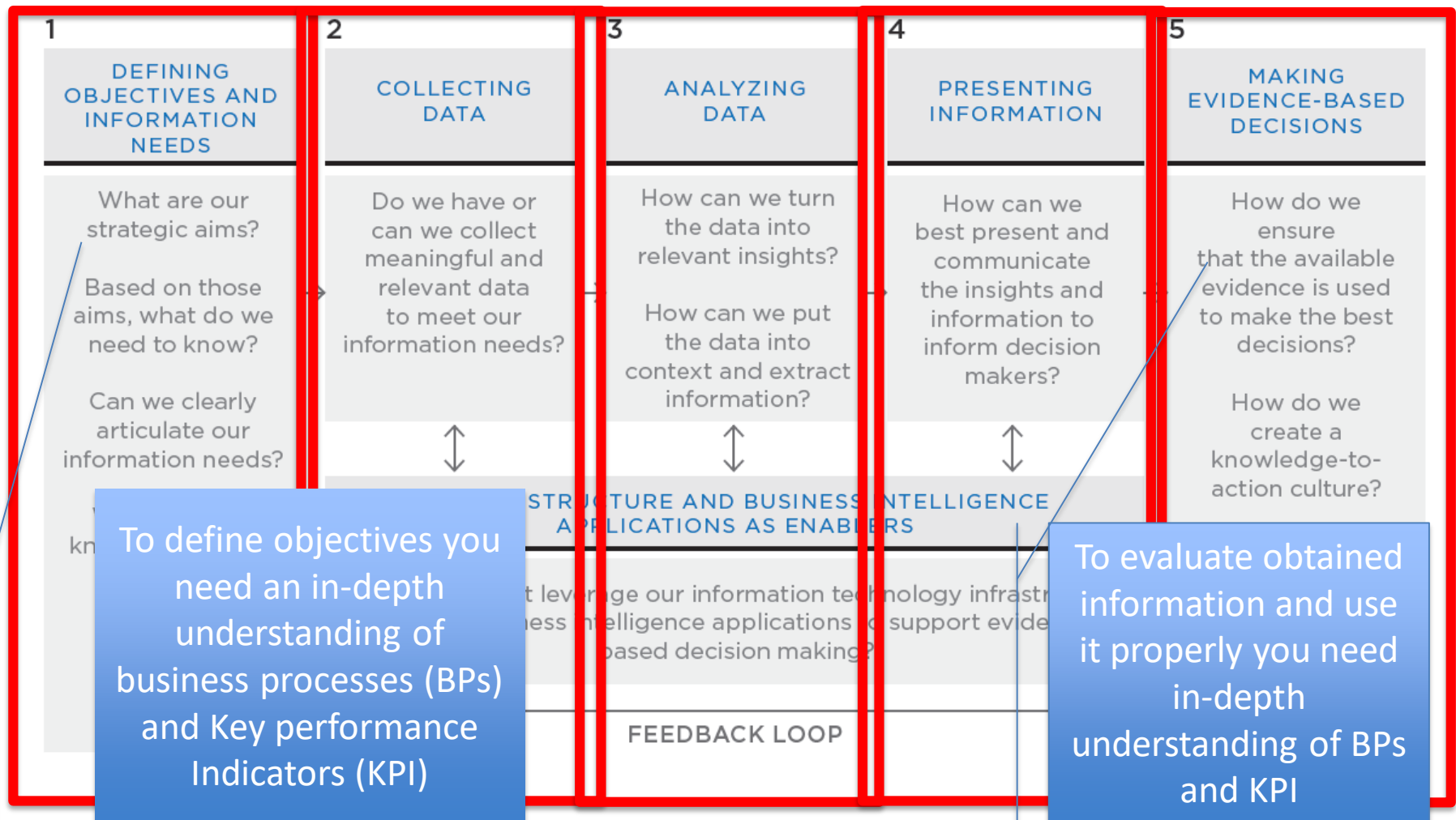
Powerful technologies (BI and BPM) can work in tandem to drive successful operations

- To attain the process goals of efficiency, productivity, control, response and improvement, companies **first must understand their processes**, the needs and skills of the people who use them, the changes that affect them and which areas need improvement.

- To understand these things, they need **relevant information** and the ability to **analyze** and **apply** it.

- Business intelligence (BI) tools provide this information, its contexts and appropriate analytics to DESCRIBE data, PRESCRIBE actions and PREDICT outcomes.

- BI delivers information that, linked with BPM, gives people the input they require to improve business processes. At the intersection of BPM and BI lies **Process Mining.**

BI & BPM

- The ultimate goal of business process management is **performance management**: managing the performance of the organization and its business network by using all assets in ways that achieve a common set of goals and objectives.

- To connect processes with performance goals, companies need **business intelligence capabilities**, including metrics, key performance indicators (KPIs), executive dashboards, **automated process discovery** and **conformance checking**.

- Without BI, it is impossible to **correlate process outcomes to corporate performance goals** or to **apply operational metrics** to **continuous process improvement**.

- BI & BPM in a word: **Business Process Intelligence**

The BI workflow and its connections with BP management

1 **DEFINING OBJECTIVES AND INFORMATION NEEDS**	2 **COLLECTING DATA**	3 **ANALYZING DATA**	4 **PRESENTING INFORMATION**	5 **MAKING EVIDENCE-BASED DECISIONS**
What are our strategic aims?	Do we have or can we collect meaningful and relevant data to meet our information needs?	How can we turn the data into relevant insights?	How can we best present and communicate the insights and information to inform decision makers?	How do we ensure that the available evidence is used to make the best decisions?
Based on those aims, what do we need to know?		How can we put the data into context and extract information?		
Can we clearly articulate our information needs?				How do we create a knowledge-to-action culture?

STRUCTURE AND BUSINESS INTELLIGENCE APPLICATIONS AS ENABLERS

... leverage our information technology infrastr... ...ness intelligence applications to support evide... ...based decision making?

FEEDBACK LOOP

To define objectives you need an in-depth understanding of business processes (BPs) and Key performance Indicators (KPI)

To evaluate obtained information and use it properly you need in-depth understanding of BPs and KPI

How is the course organized

- The course is in two parts:
  - PART A (Prof. Paola Velardi) Business Intelligence (6 CFU)
  - PART B (Prof. Claudio Di Ciccio) Business Process Management and Mining (3 CFU)
  - Course material is available on http://twiki.di.uniroma1.it/twiki/view/BI/WebHome
  - Includes lecture slides, suggested readings, use cases, and links to software tools
  - Two Google groups (subscribe to both)

Learning objectives

- How to exploit ICT tools and methods to model and manage business processes,

- How to exploit ICT tools and methods to derive useful information from (large, heterogeneous) available data,

- With the ultimate goal of improving business performance

- Don't need any skill in programming, will get familiar with some Business Intelligence tool for data analytics (Watson Explorer) and BP tools for Business Process Management and Mining

Exam (BI)

- 60% a written test
- 40% a project
- Good idea if you take a business use case and use it throughout the course for practical exercises
- For those who attend lessons, first written test session is the last day of BI part (mid November)

Exam
(Business Process Intelligence)

- 60% written test
- 40% teamwork report
  - From a process model…
  - … to a process simulation…
  - … to process mining
- See the previous slide about the business case of preference!