



EUNIS BI Maturity Survey Report

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Agenda

- The EUNIS BI Taskforce
- 2013 BI Maturity Survey
- Future activities of EUNIS BITF



BI Taskforce



- Goal: promote the creation of a European collaboration network to exchange and share knowledge and experiences on BI in HE institutions.

www.eunis.org/task-forces/business-intelligence-bi/



BI Taskforce activities

- 2013 BI Maturity Survey
- BITF Conference, Paris, March'14
- Representation at TNC2014, May'14
- BITF Local meeting in Ireland, May'14
- A BI track at the EUNIS Congress, June'14



BI Paris Conference



6-7 March'14

BITF Meeting @UCD



23 May'14



BI Taskforce



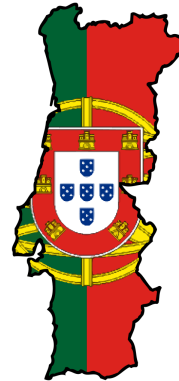
- Send an email (Elsa.Cardoso@iscte.pt) and register on the site to access contents



2013 BI Maturity Survey



2013 BI Maturity Survey



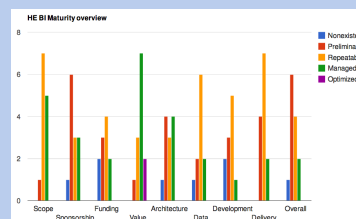
2013 BI Maturity Survey: milestones



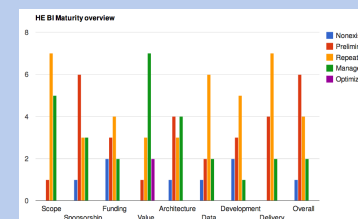
Kick-off @Vila Real



Initial Results @Riga



4 pilot countries



9 countries



“Unlocking BI”: the kick-off of this project

- EUNIS 2012 @Vila Real, Portugal
- **Goal:** Improve the collaboration and exchange of good practices among HE BI practitioners



2013 BI Maturity Survey: Goals

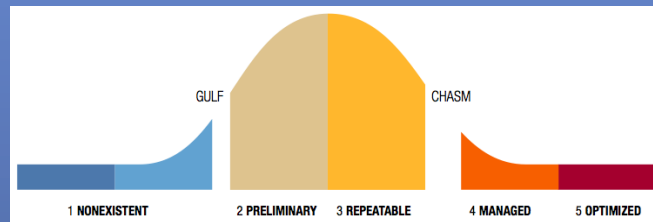


Maturity Models (MM)

- Are used to identify strengths and weaknesses of certain areas in an organization
- MM are commonly applied to assess the AS-IS situation, to prioritize improvement measures, and to monitor progress
- Dimensions
- Sequence of levels (or stages)



BI-specific Maturity Models



TDWI Maturity Model
(The Data Warehouse Institute)

OVERALL MATURITY LEVELS		GENERAL DESCRIPTION	
LEVEL	NAME		
1	ABSENT		
2	INITIAL		
3	EXPANDING		
4	CONSOLIDATE		
5	INSTITUTIONALIZED		

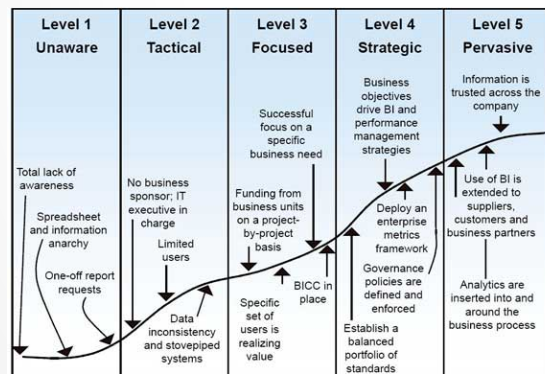
RESULT: OVERALL MATURITY LEVEL		INITIAL		UNBALANCED	

The notion of data as a valuable asset that must be provided to certain addressees in an efficient, trustworthy way is perceived in some functional areas, and some local initiatives arise. Small scale, local success stories regarding data analysis services may happen.

The achieved maturity level shows an unbalanced general situation where efforts must be made to improve the weak dimensions (probably by taking advantage of the strong ones).

		LEVELS				
		ABSENT	INITIAL	EXPANDED	CONSOLIDATED	INSTITUTIONALIZED
DIMENSIONS	I2 TEAM	2	ABSENT	LOCAL	GLOBAL VIRTUAL	GLOBAL FULL TIME
	SCOPE	4	NONE / UNKNOWN	SPECIALIZED	MULTIPLE	GENERALIZED
	SBU ROLE	1	UNWARE	AWARE	PARTICIPANTS	SUPPORTING
	DATA PRODUCTS	2	NONE / UNKNOWN	LIMITED	EXPANDED	MAJORITY
	USER COVERAGE	1	NONE / UNKNOWN	LIMITED	EXPANDED	MAJORITY
	USERS ENGAGEMENT	2	UNWARE	AWARE	CUSTOMERS	DRIVERS
	DATA MANAGEMENT	1	UNWARE	AWARE	MANAGED	SUPPORTED
	BUSINESS VALUE	2	SCARCE	OPTIONAL	INTERESTING	NECESSARY
	STRATEGIC SUPPORT	2	FRED FLOATING	LOCALLY EMBEDDED	PROJECT FOOTING	SUSTAINABLE SERVICE

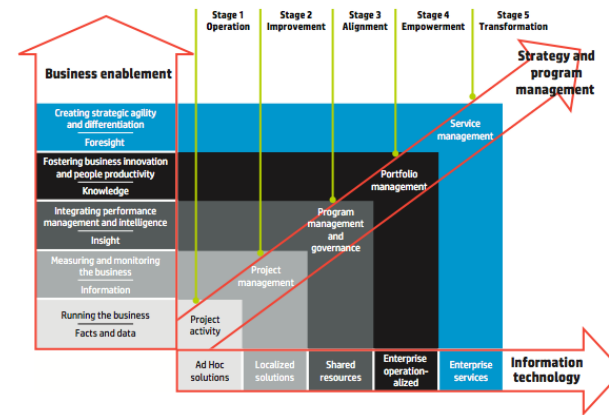
OCU Maturity Model
(Institutional Intelligence)



BI = business intelligence
BICC = BI competency center

Source: Gartner (December 2008)

Gartner Maturity Model



HP Maturity Model



2013 BI Maturity Survey

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Preliminary results

2013 BI Maturity Survey

- European perspective of 9 countries
- Questionnaire addressed to: IT Directors/CIO (mostly), or BI Managers, or Rectory level
- Promoters: Local members of EUNIS BITF in each country
- AlmaLaurea (from Italy) survey platform was used

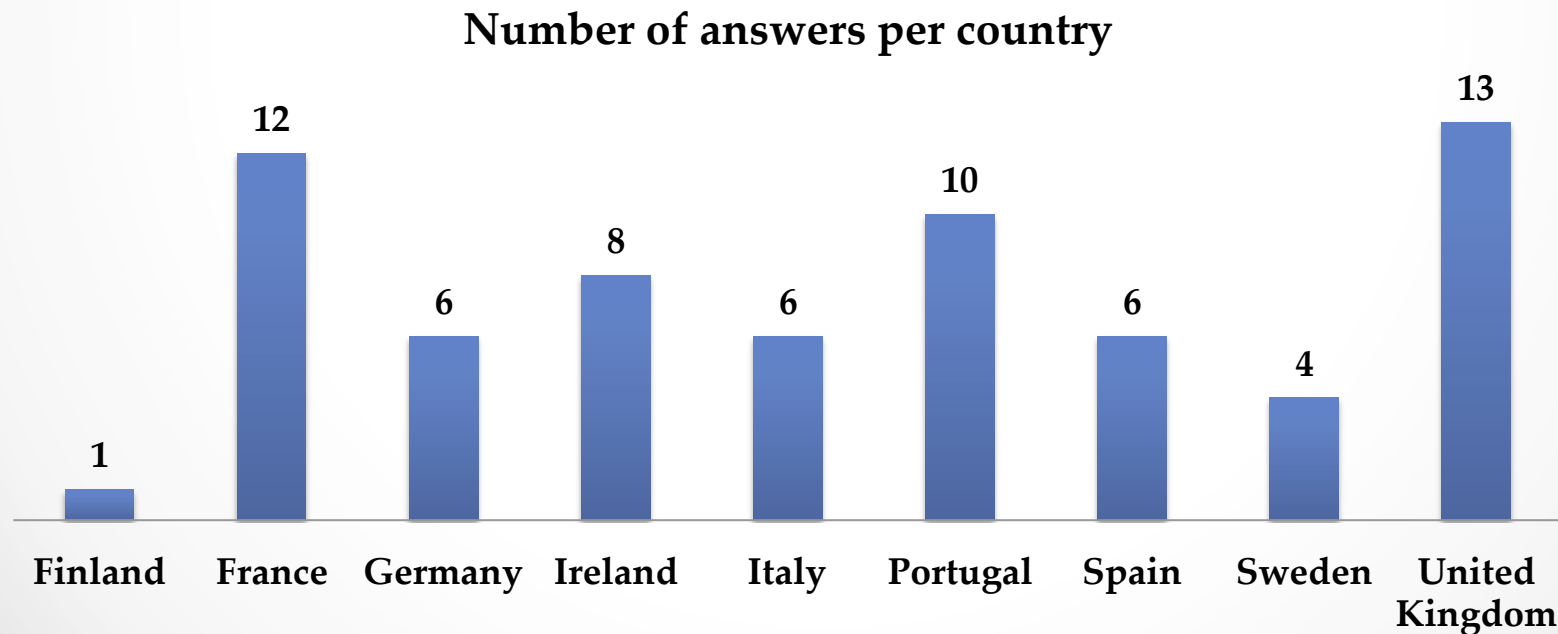


2013 BI Maturity Survey

- Assessment questions required by two maturity models:
 - **TDWI BI MM (TDWI Research, 2012)**
 - **Institutional Intelligence White Book MM (OCU 2013)**
- Original TDWI survey was used with its 40 questions in 8 dimensions. Only minor changes were introduced to better reflect the HE terminology.
- One new HE-specific MM, representing a lean approach to maturity assessment with 9 questions + 9 dimensions

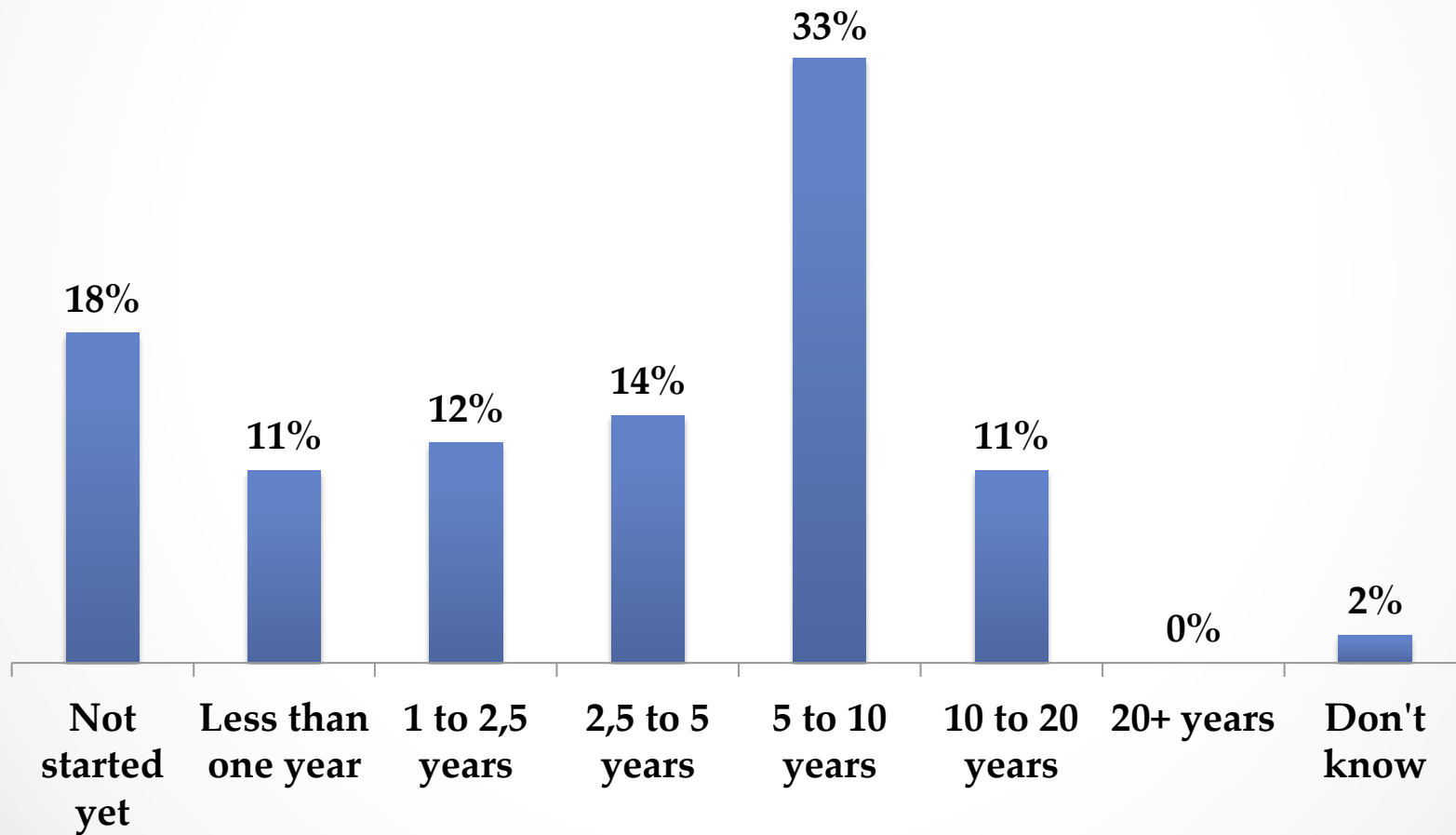
Profile of respondents

- **Global response: 66**
- 9 countries
- Sector: mostly Public HEI (92%)
- System for PT and IT: only Universities (not Polytechnics)



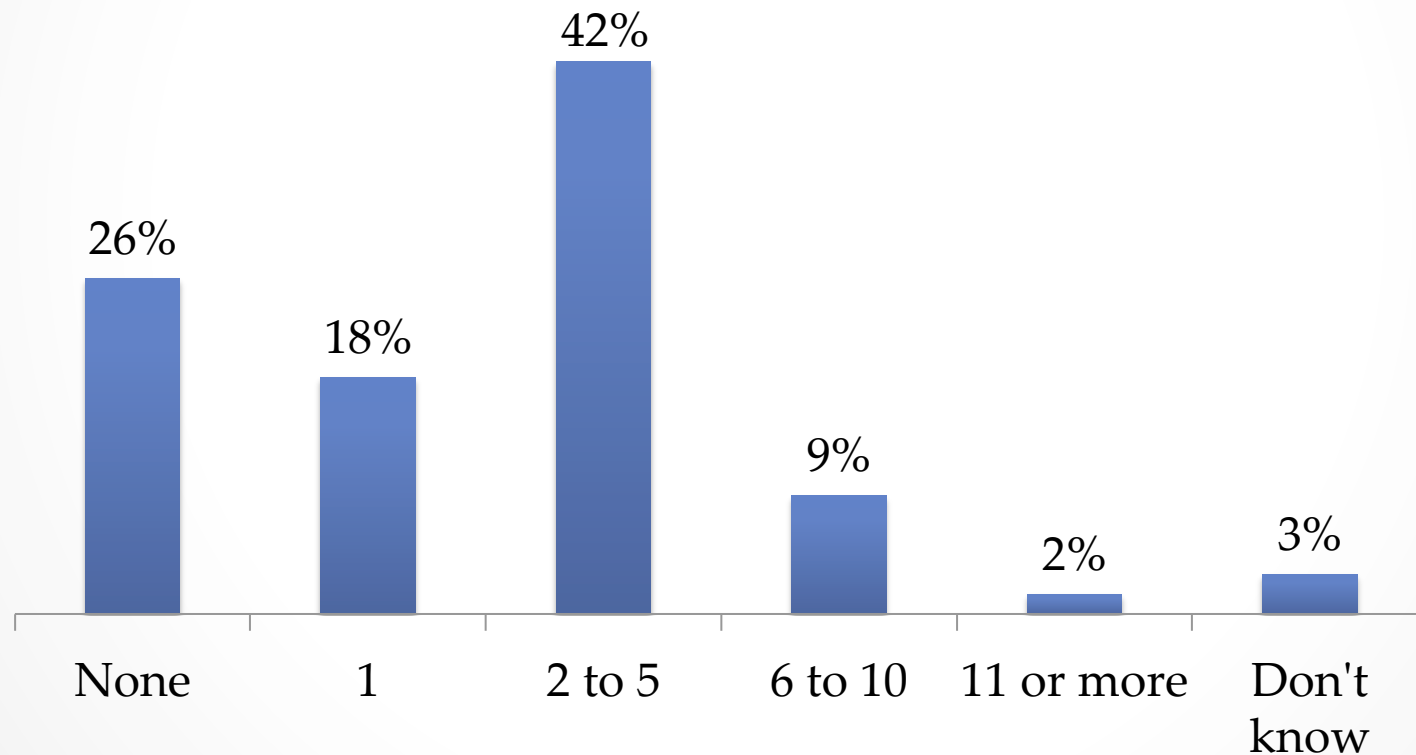
Profile of respondents

- When did your HEI start a BI/DW initiative?



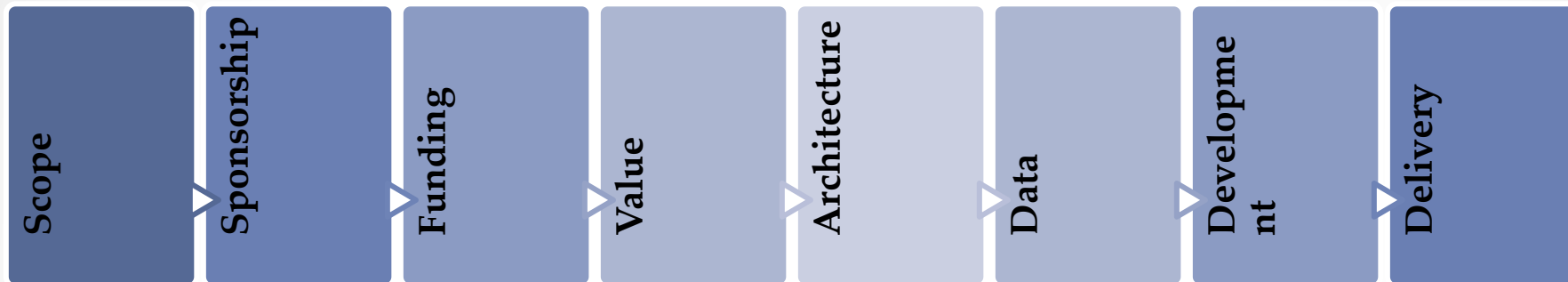
Profile of respondents

- Number of full-time equivalent BI/DW staff members (including contractors)



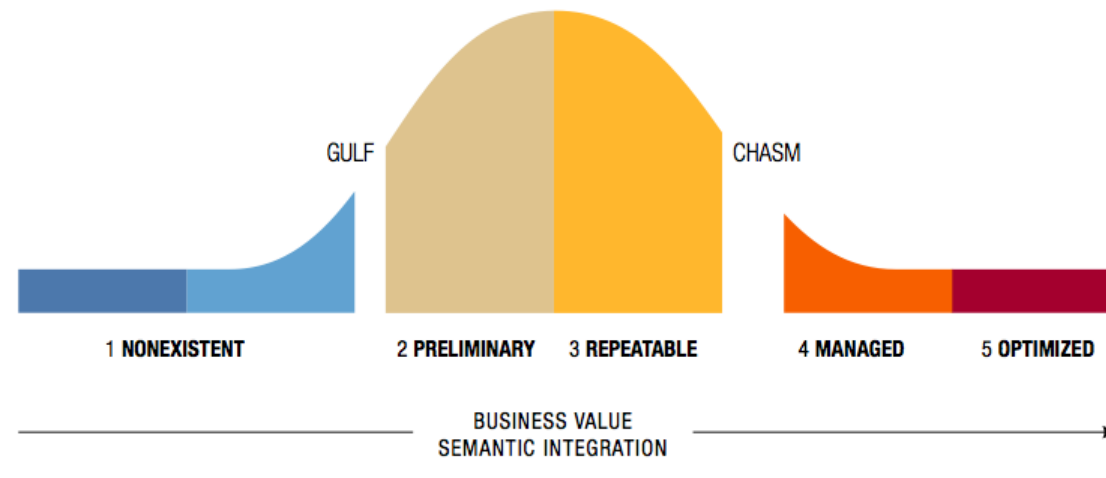
TDWI BI Maturity Model

- 8 dimensions



- ▶ 5 stages of maturity

TDWI's BI Maturity Model—User Adoption Curve



TDWI BI MM: dimensions

- **Scope.** To what extent does the BI/DW program support all parts of the organization and all potential users?
- ▶ **Sponsorship.** To what degree are BI/DW sponsors engaged and committed to the program?
- ▶ **Funding.** How successful is the BI/DW team in securing funding to meet business requirements?
- ▶ **Value.** How effectively does the BI/DW solution meet business needs and expectations?

Source: (TDWI Research 2012)

TDWI BI MM: dimensions

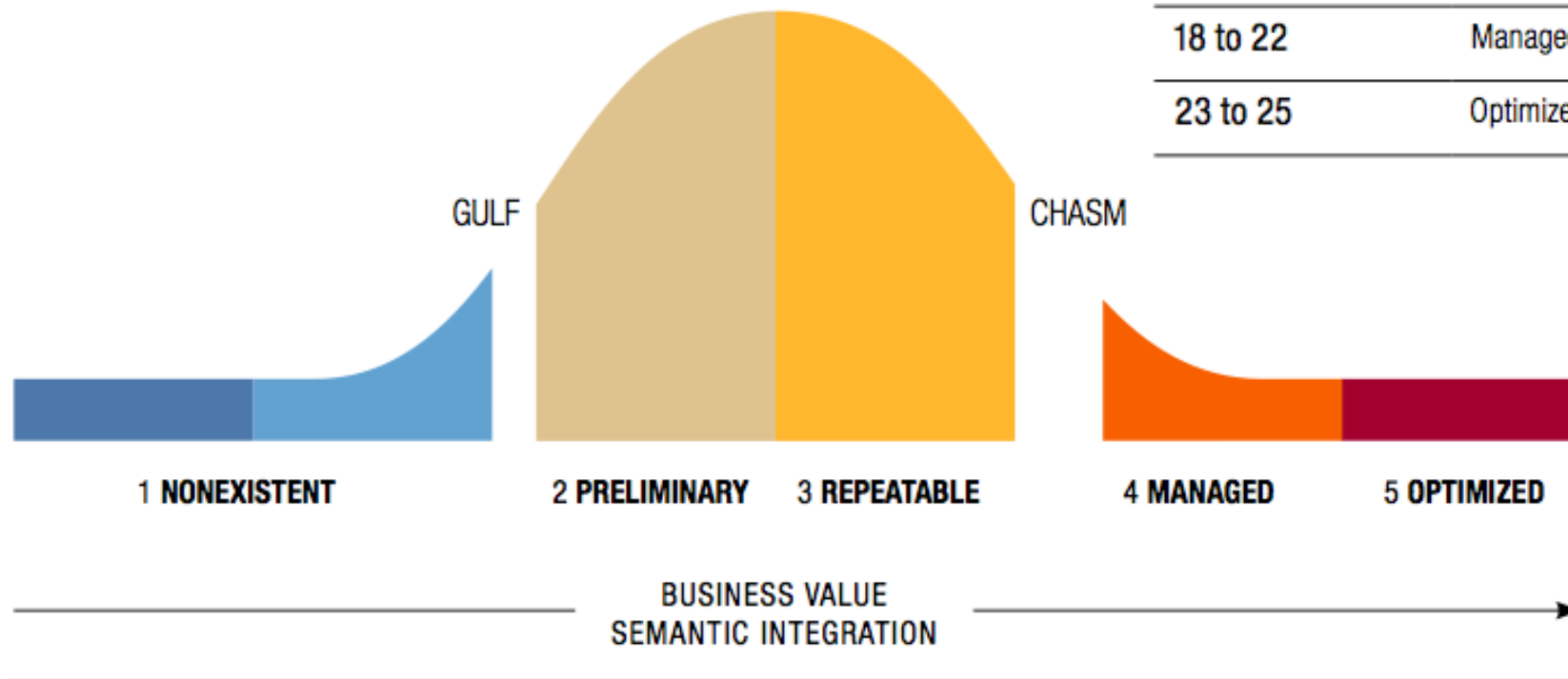
- **Architecture.** How advanced is the BI/DW architecture, and to what degree do groups adhere to architectural standards?
- ▶ **Data.** To what degree does the data provided by the BI/DW environment meet business requirements?
- ▶ **Development.** How effective is the BI/DW team's approach to managing projects and developing solutions?
- ▶ **Delivery.** How aligned are reporting/analysis capabilities with user requirements and what is the extent of usage?

Source: (TDWI Research 2012)

TDWI BI Maturity Model: stages

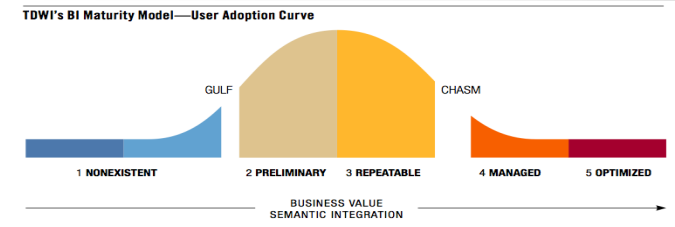
SCORE	STAGE
5 to 7	Nonexistent
8 to 12	Preliminary
13 to 17	Repeatable
18 to 22	Managed
23 to 25	Optimized

TDWI's BI Maturity Model—User Adoption Curve



Source: (TDWI Research 2012)

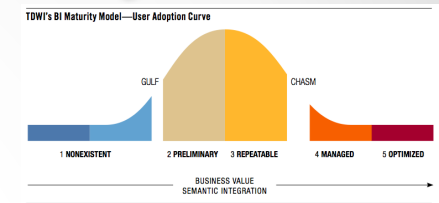
TDWI BI Maturity Model: stages



- Nonexistent: operational reporting + spreadmarts (user-created isolated reports)
- Preliminary: first attempt to DW/BI (narrow scope)
- Repeatable: consolidation of data marts; a BI program rather than ad hoc projects
- Managed: Unified DW architecture; fully loaded DW; predictive analytics
- Optimized: Organizations use BI/DW to provide customers and suppliers with tailored, interactive reports, dashboards, and other information services

Source: (TDWI Research 2012)

TDWI MM: levels of maturity for each dimension



Category/Stage	Nonexistent	Preliminary	Repeatable	Managed	Optimized
Scope	Individual	Department	Division	Enterprise	Inter-enterprise
Sponsorship	Non-existent or uncommitted	↔	Somewhat committed & accountable	↔	Very committed & accountable
Funding	None	Departmental budget	Divisional budget	Corporate IT budget	Self-funding
Value	Cost Center	Tactical	Mission critical	Strategic	Competitive differentiator
Architecture	Spreadmarts	Non-integrated data marts	Non-integrated data warehouses	Central DW with or without data marts	BI or data service via service-oriented architecture
Data	Not trustworthy, not timely, not comprehensive	↔	Somewhat trustworthy, timely, and comprehensive	↔	Fully trustworthy, timely, and comprehensive
Development	Non-standardized processes	↔	Somewhat standardized processes	↔	Fully standardized processes
Delivery	View static reports	Analyze trends and issues	Monitor processes	Predict outcomes	Automate processes

Source: (TDWI Research 2012)

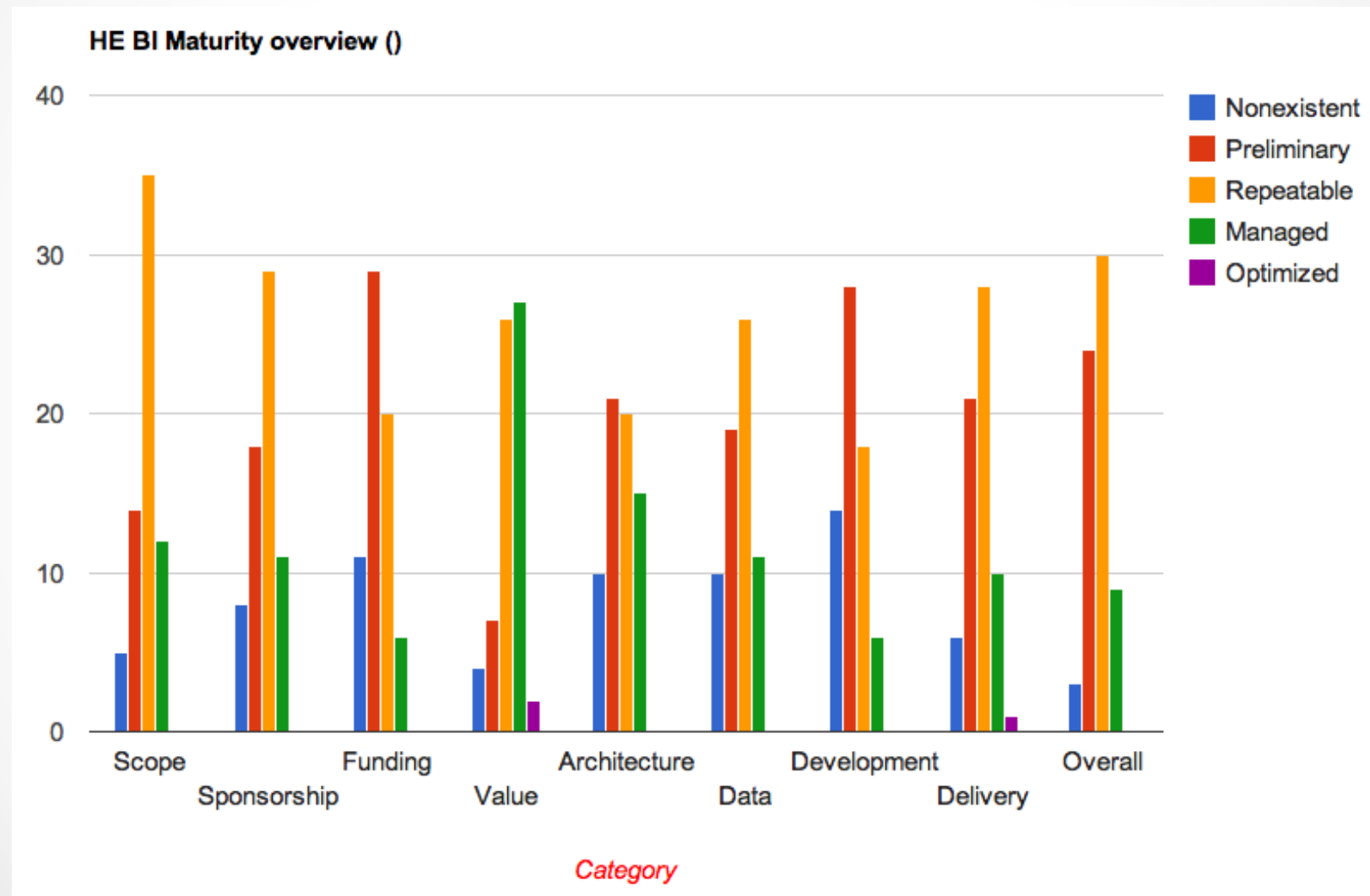
2013 BI Maturity Survey



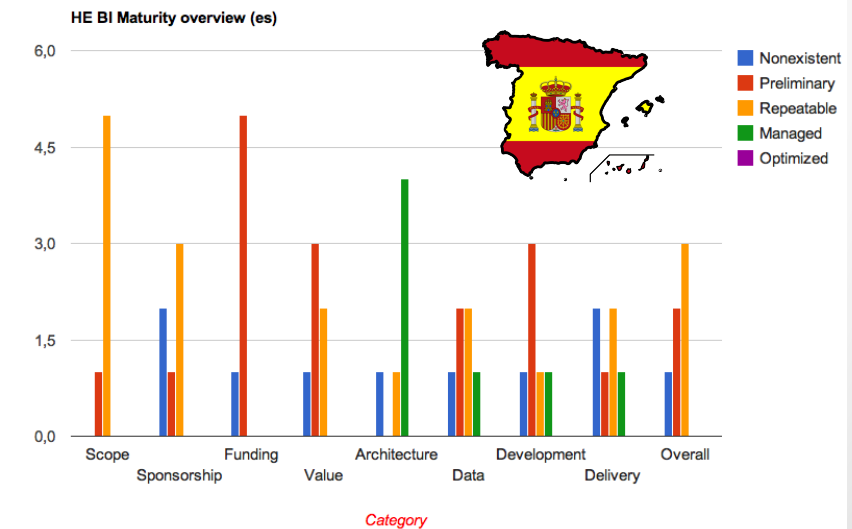
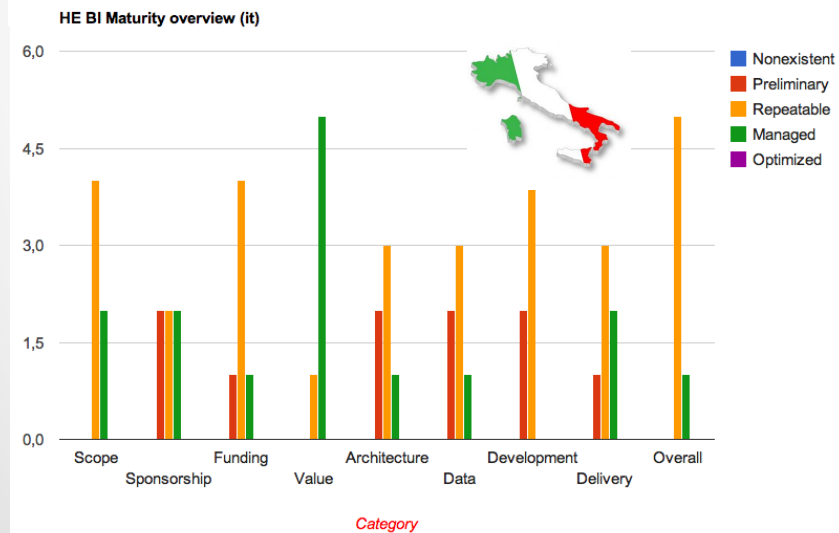
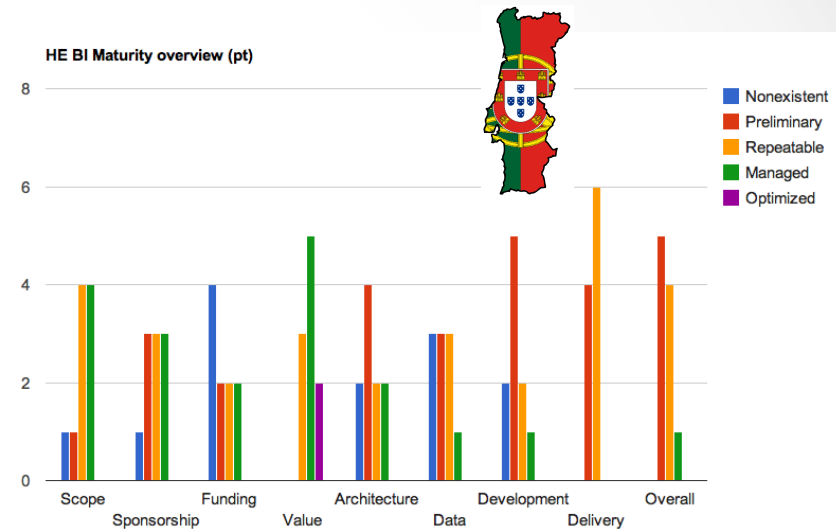
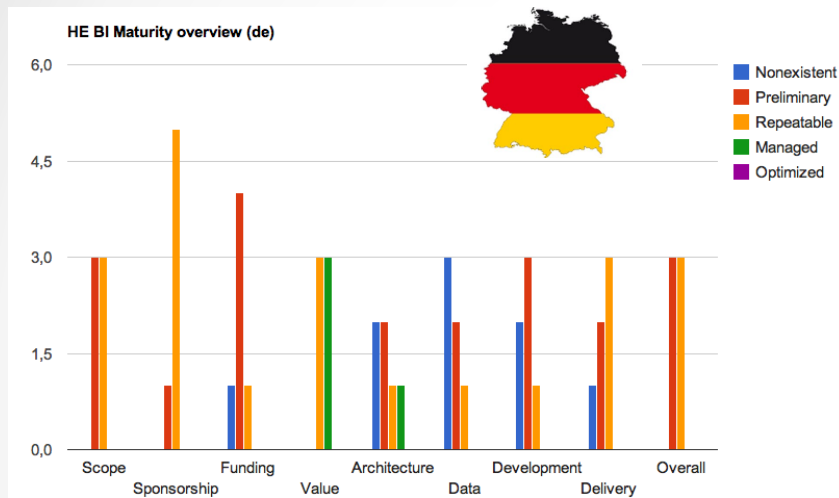
- A first picture of the use of BI in European HE Institutions
- Lack understanding of BI key concepts
- Result interpretation requires participation of each country



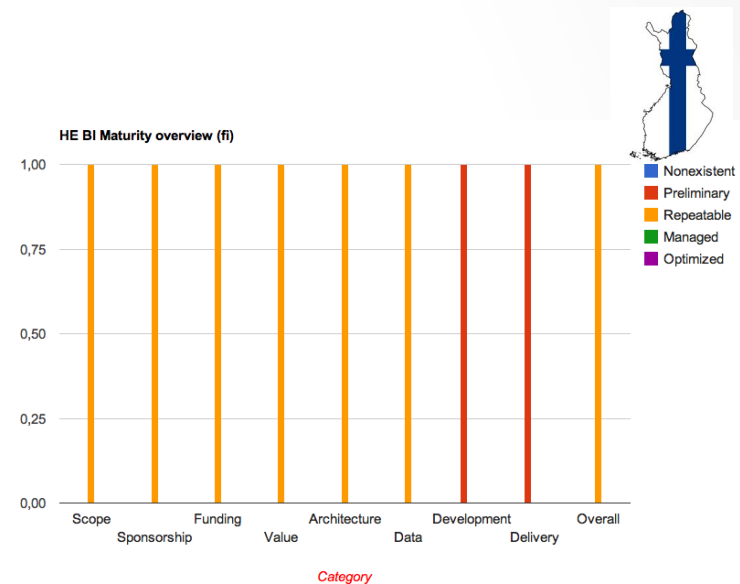
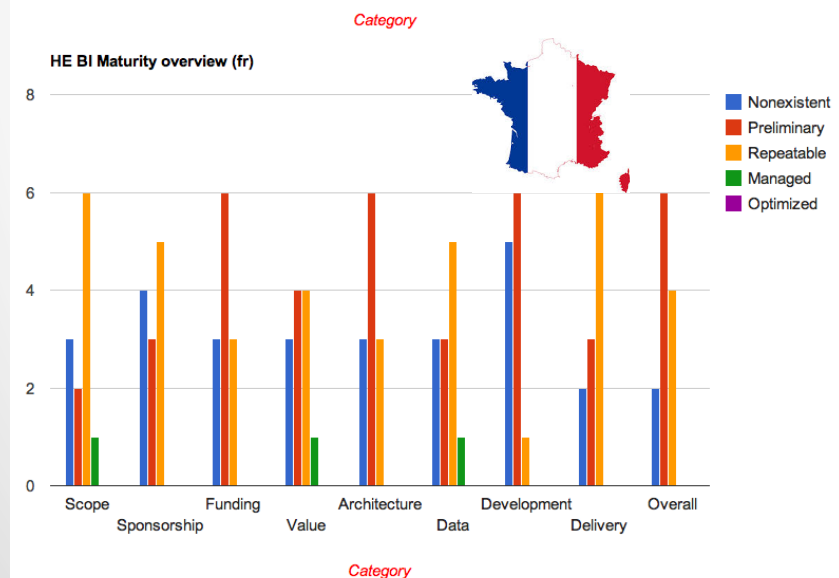
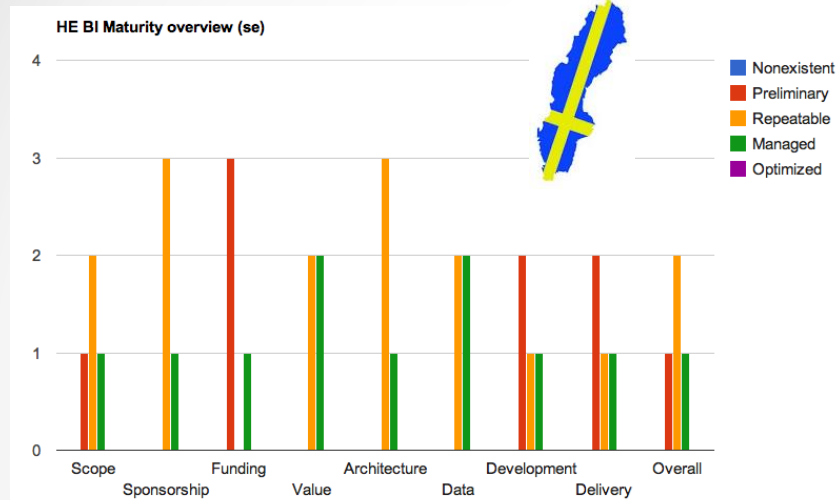
Survey analysis: aggregated view



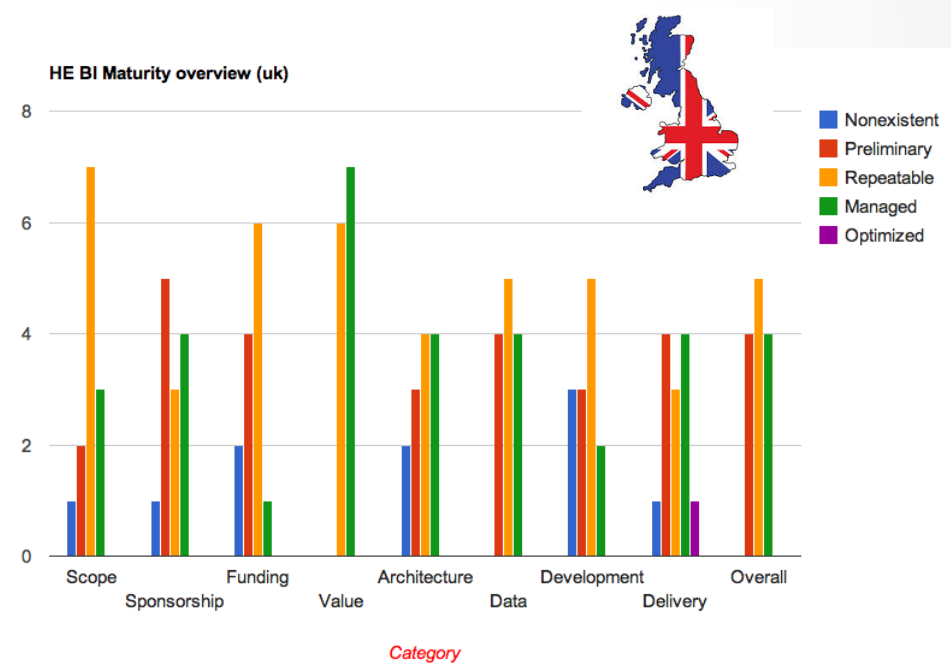
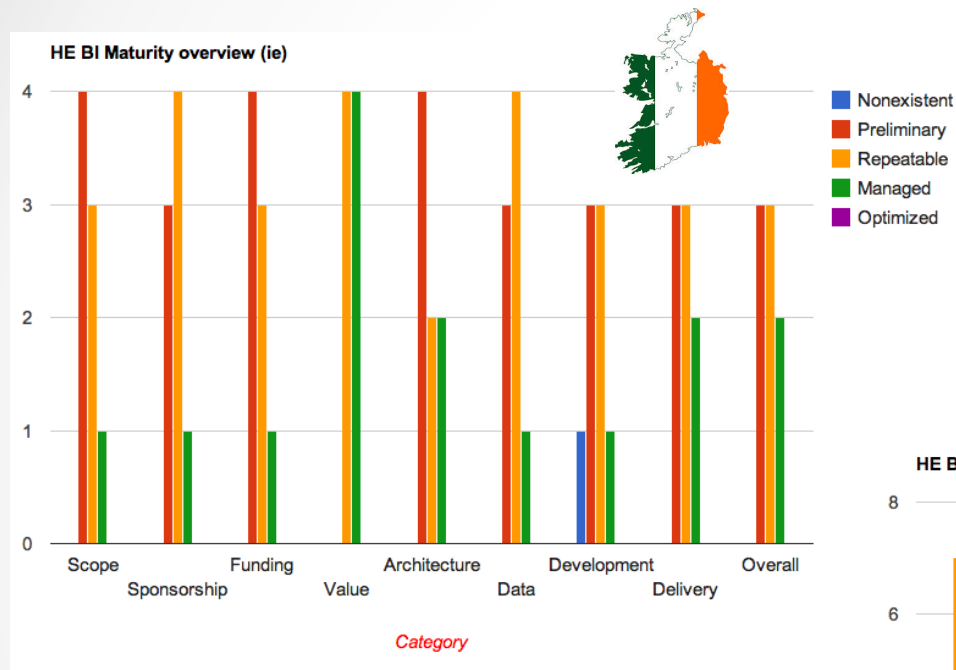
Survey analysis



Survey analysis



Survey analysis



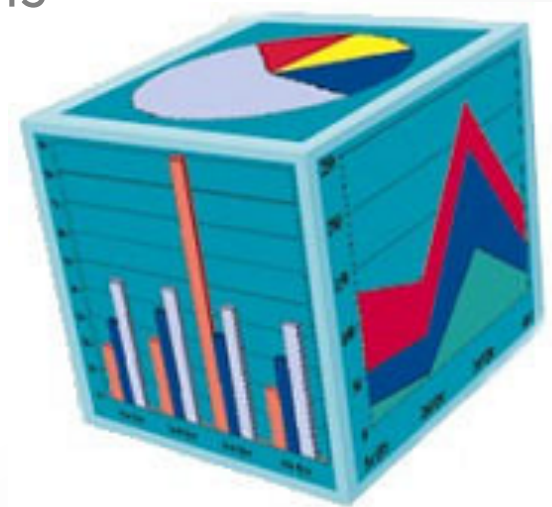
Business Intelligence and CSF in Higher Education

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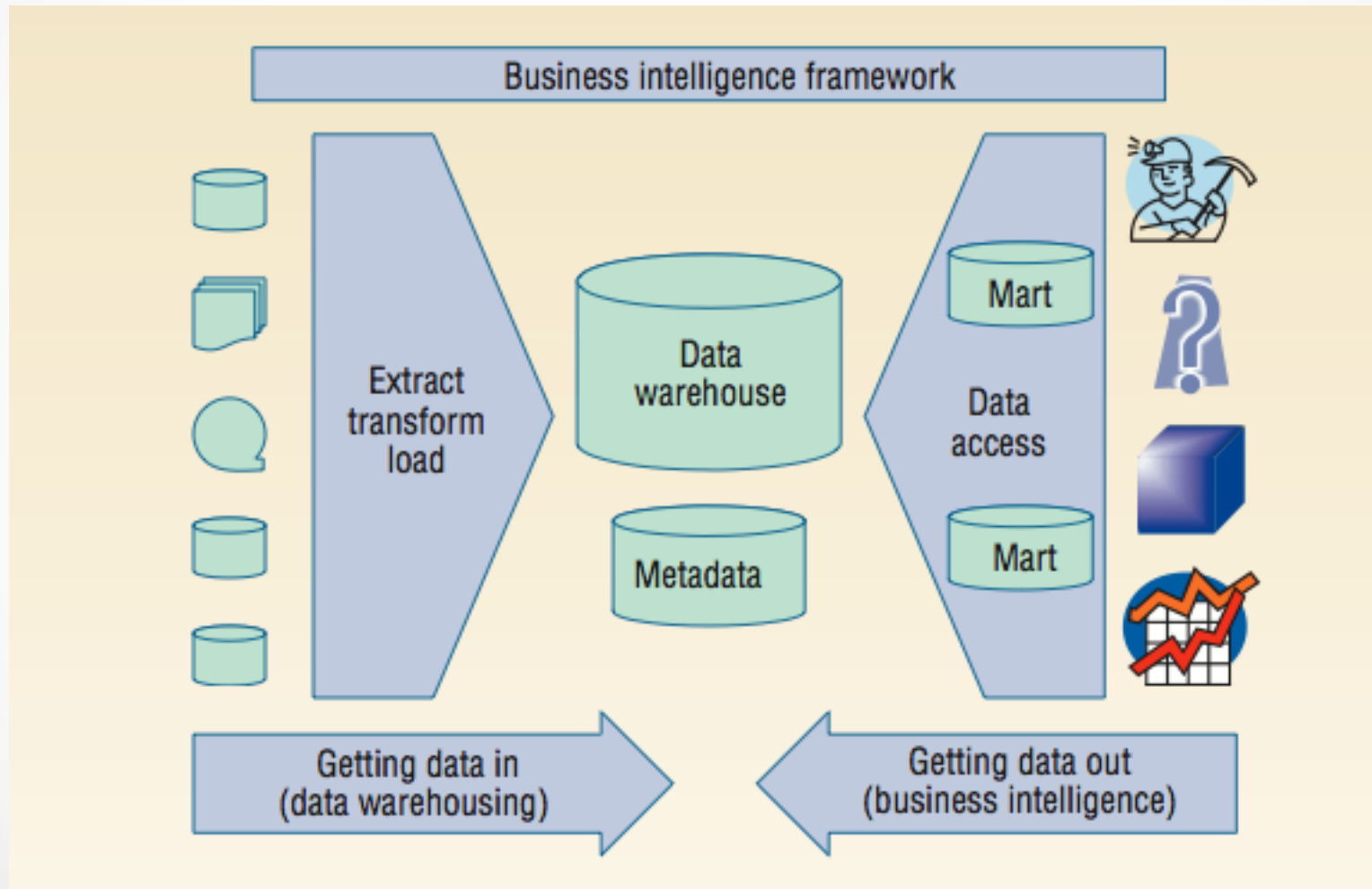
An overview

Defining Business Intelligence

- BI encompasses a broad category of applications and technologies for gathering, storing, analyzing, sharing and providing access to data to help enterprise users make better business decisions
- Highly linked to achieving organizational goals

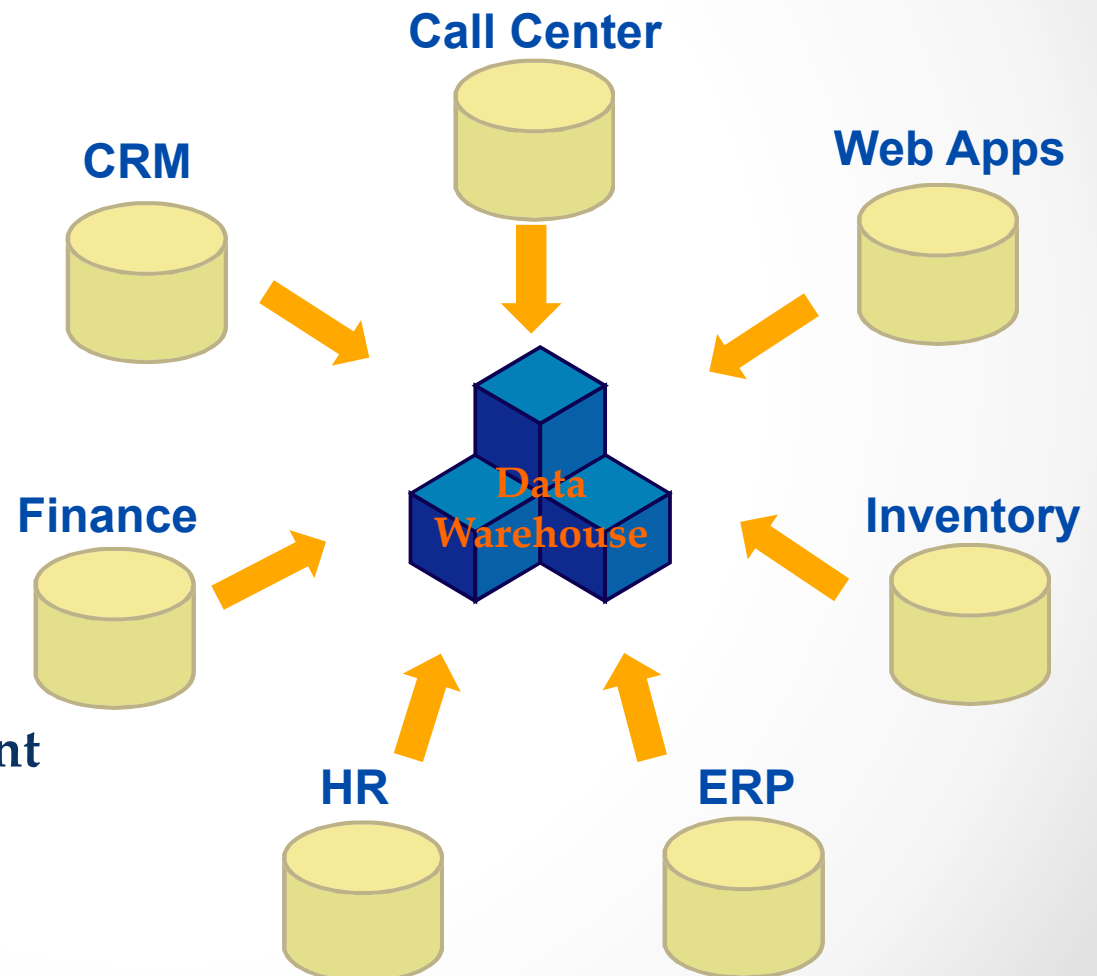


Business Intelligence



DW/BI Systems

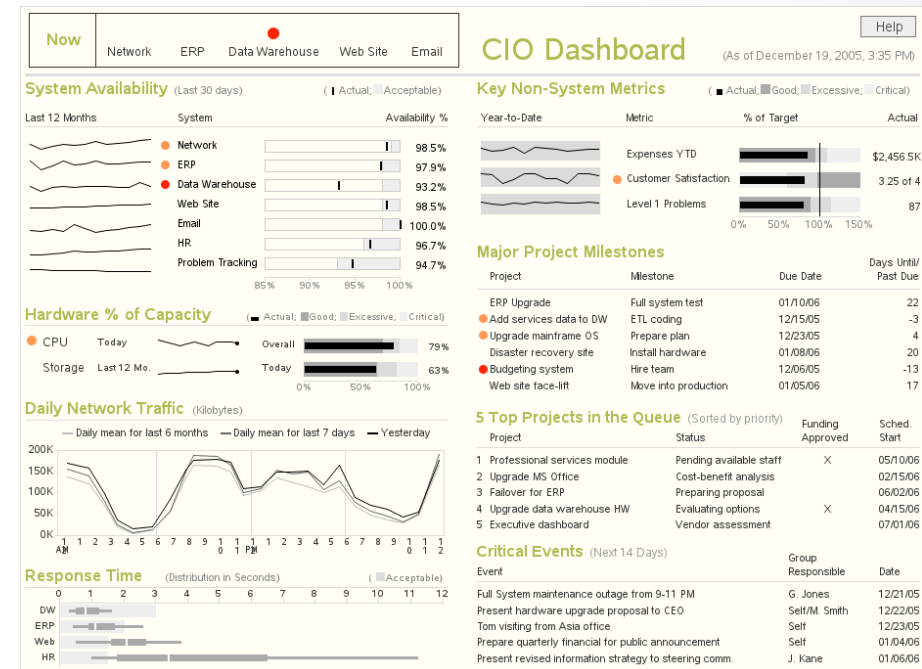
- **Data Warehousing:
Getting data in**



Integrating data from different source systems into a central repository, the DW

DW/BI Systems

- **Business Intelligence: Getting data out**



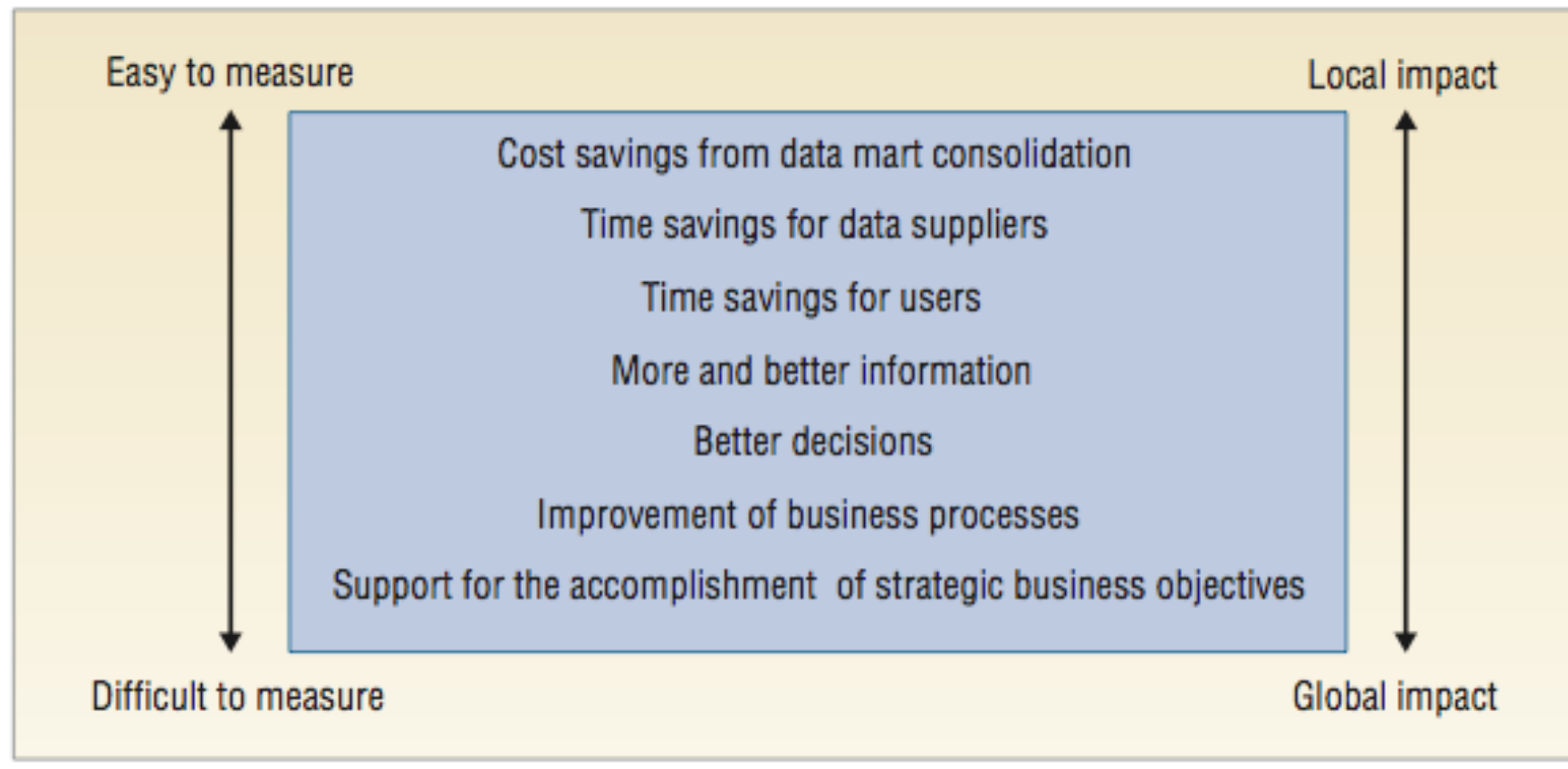
Business users and applications accessing data from the DW to perform enterprise reporting, OLAP, querying, and predictive analytics

Critical Success Factors (CSF) of BI Initiatives

- A DW/BI program is an expensive and risky endeavor, but when successful is a high return initiative
- CSF for DW are most often described in the literature using factors of failure.



BI Benefits



As business users mature to performing analysis and prediction, the level of benefits become more global in scope and difficult to quantify

Critical Success Factors (CSF) of DW/BI Initiatives

- Literature review:
 - Existent studies focus on anecdotal evidence gathered from the experience of a small set of companies
 - contributions from practitioners
 - Very little information about CSF of DW/BI in Higher Education



Most common reasons of DW/BI failure

- Weak sponsorship and management support
- Insufficient funding
- Inadequate user involvement
- Organizational politics

Source: (Watson et al., 1999)



A model of Data Warehousing success

- Proposed by Wixom & Watson (2001)
- Cross-sectional survey performed in 111 organizations (90% from the US, other 10% from South Africa, Canada and Austria)
- Most respondent were DW managers
- 225 surveys were sent (mostly contacts from the TDWI conferences)

Source: (Wixom and Watson, 2001)

A model of DW success

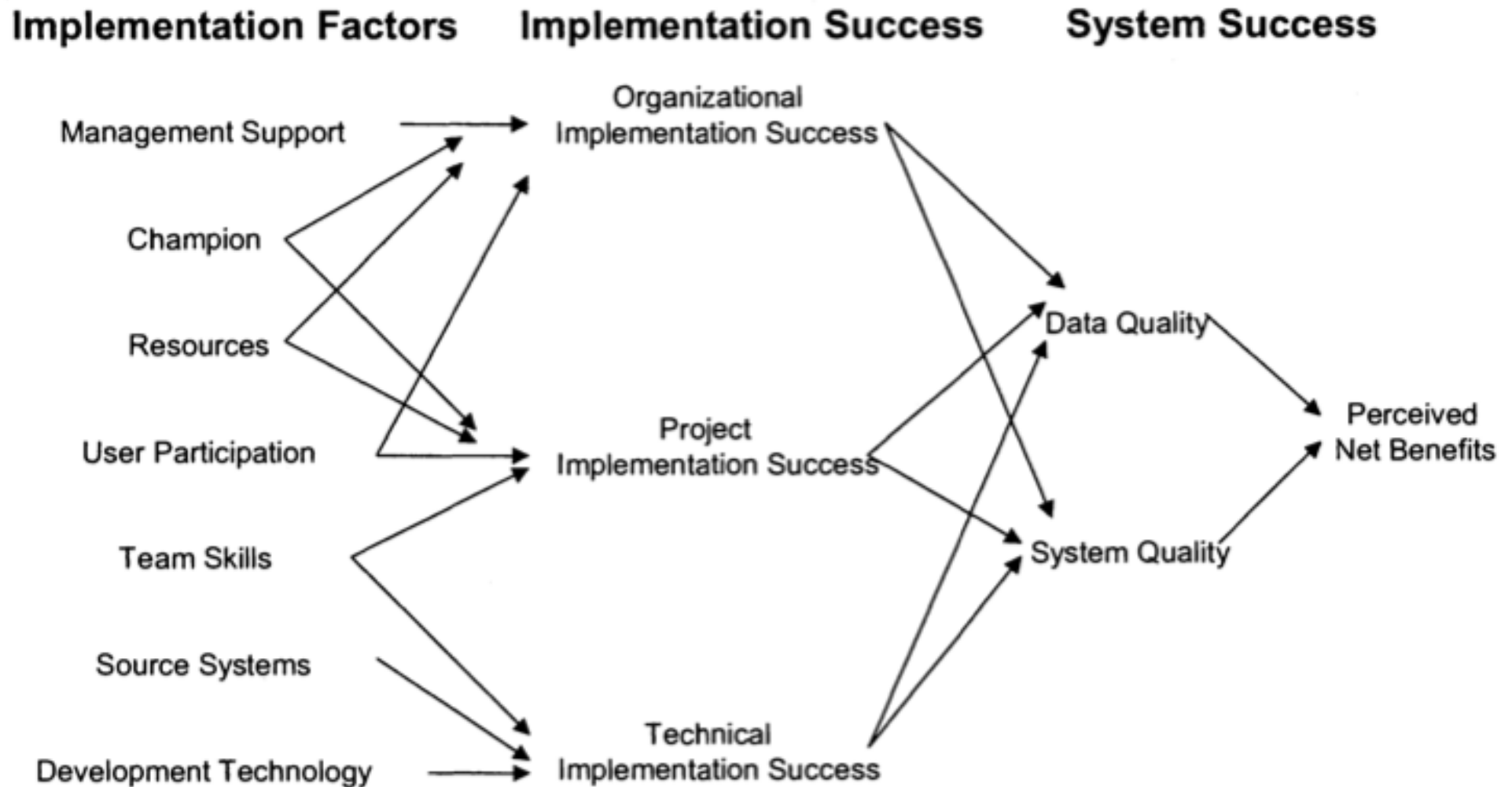
Table 1. Respondents by Industry

Industry	Number of Respondents	Percent of Respondents
Manufacturing	16	14
Healthcare	15	13
Retail/ Wholesale	13	12
Telecommunications	13	12
Financial Services/ Banking	11	10
Insurance	9	8
Government	8	7
Utilities	6	5
Education/ Publishing	3	3
Petrochemical	2	2
Other ^a	15	14

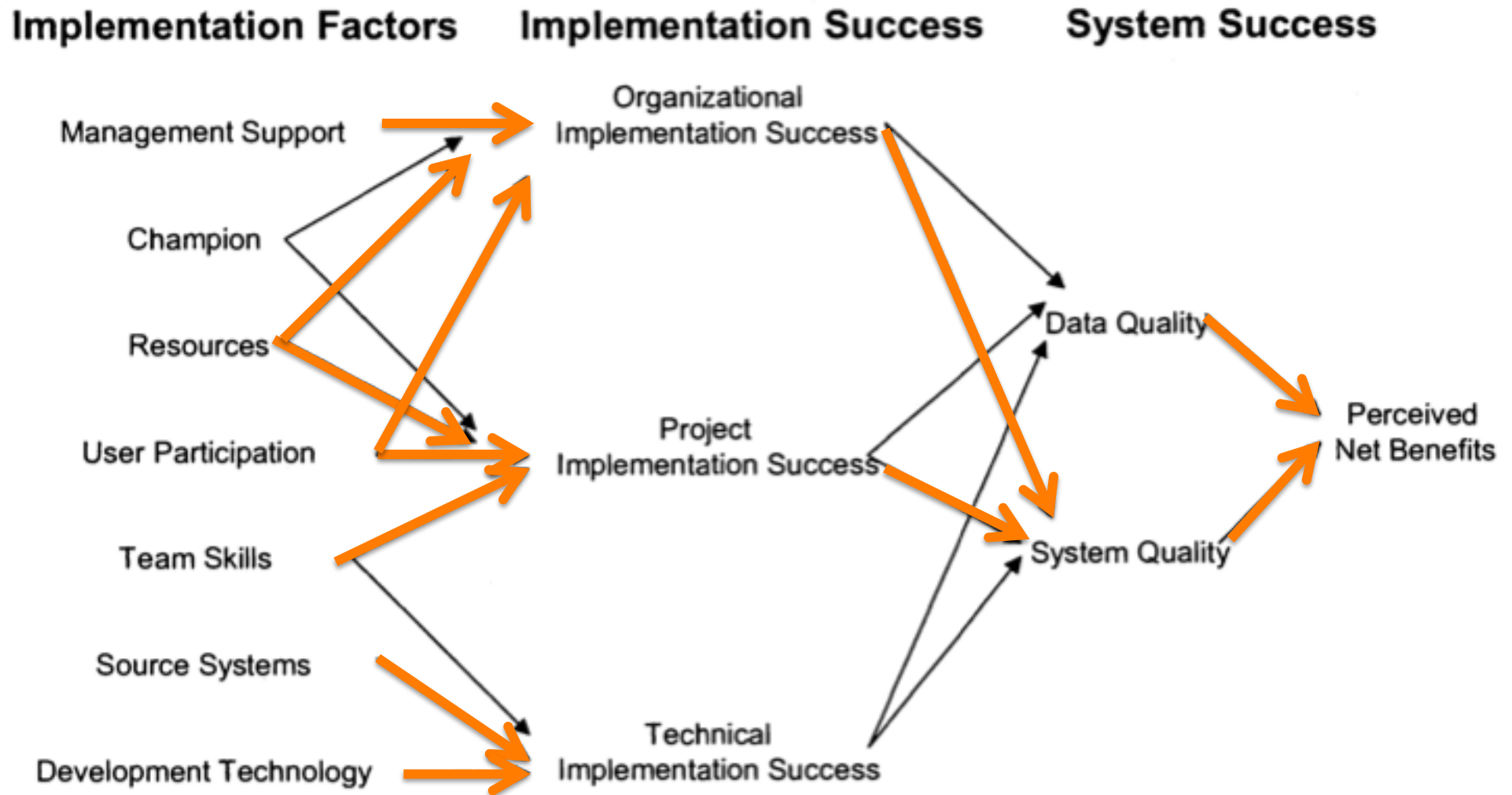
^aOther industries included Transportation, Market Research, Reseller, Travel, Defense, Distribution, and Consumer Products

Source: (Wixom and Watson, 2001)

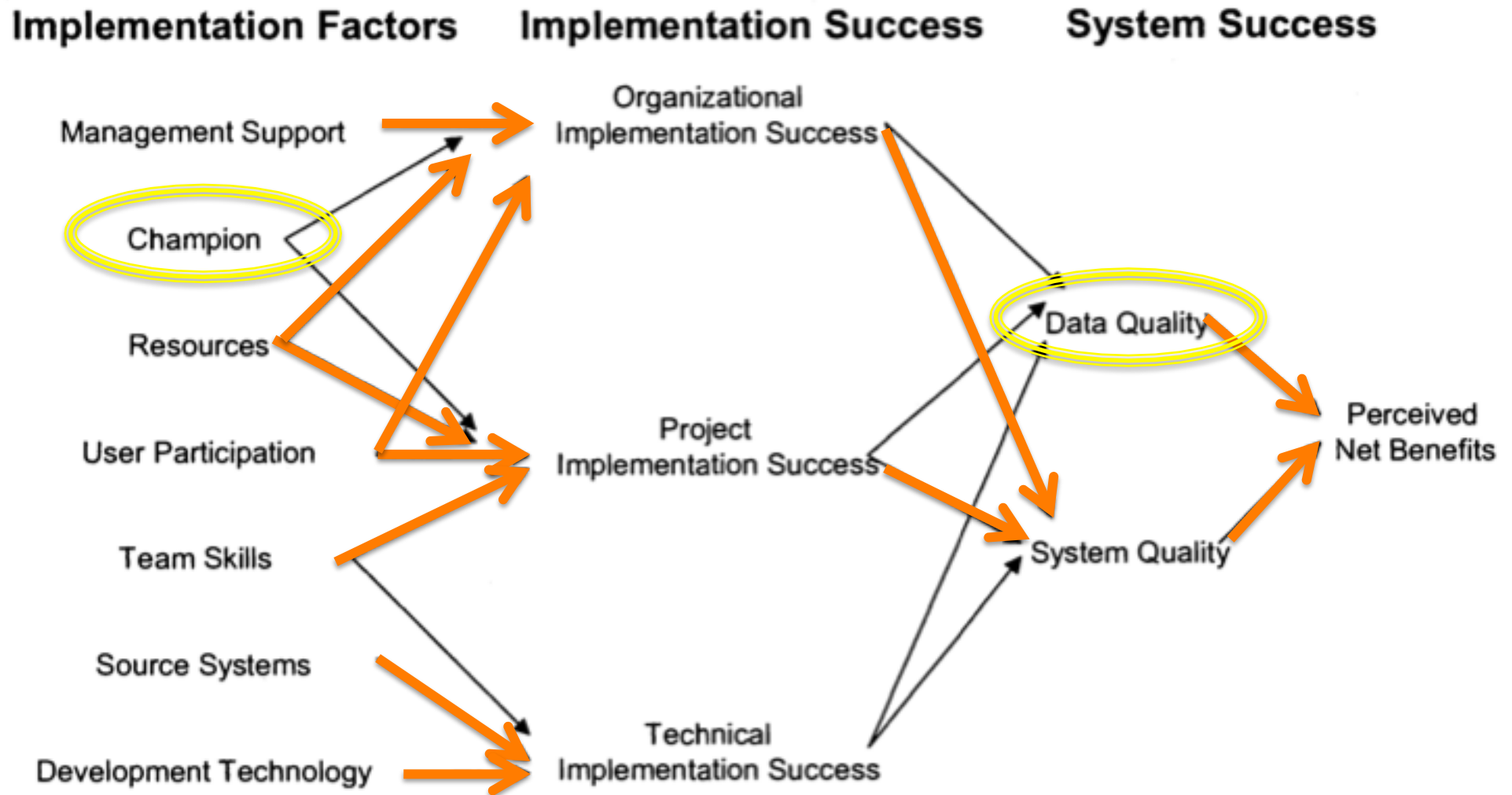
A model of DW success



A model of DW success



A model of DW success



Concluding remarks

- Data gathered from this project constitutes the first European assessment of the maturity level of BI programs in Higher Education institutions
- The survey enables each participating institution to perform a benchmark of its BI maturity level against the total average score
- The survey is anonymous; however, individual institutions can use the TDWI score calculations to perform a self-assessment evaluation

Concluding remarks

- BITF national events are being promoted to foster the discussion and analysis of survey results
- Training/communication is required to ensure that maturity model and CSF concepts are fully understood by academic stakeholders (IT Directors/ CIO, BI managers, Rector)

References

- OCU (2013) Alcolea, J. J. (eds) White book of Institutional Intelligence. Office for University Cooperation, Madrid, Spain.
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- Wixom, B. and Watson, H. (2001) An empirical investigation of the factors affecting data warehousing success. MIS Quarterly, Vol. 25, No.1, pp. 17-41 (March 2001)
- Watson, H. and Wixom, B. (2007) The current state of Business Intelligence. Computer, Vol. 40, Issue 9, pp. 96-99. IEEE Computer Society



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