

Evaluation of the maturity level of BI initiatives in European Higher Education Institutions: initial report from the BI Task Force @EUNIS

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1. MATURITY LEVEL OF BI INITIATIVES IN HIGHER EDUCATION

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. Nowadays, the value of BI is perceived as more than information dissemination or tactical responses to information requests from individual managers; it is highly linked to achieving organizational goals. Therefore, well-designed and deployed BI initiatives can play an important role in organizations enabling better management, leadership and decision-making, to achieve efficiency and financial benefit.

Maturity models are used to identify strengths and weaknesses of certain areas in an organization. The use of maturity models (MM), and their inherent maturity levels, is perceived as a valuable instrument for organizational assessment and development (Mettler and Rohner, 2009). Several maturity models have been developed to assess the strengths and weaknesses of BI initiatives (Lahrmann et al., 2010). However, to our knowledge, there is no academic evidence of the usage of maturity models in Higher Education (HE). Empirically established MM like that of TDWI can be applied to organizations in different industries, including HE. However, they lack the specifics of each industry, focusing on generic organizational aspects. Recently, as a result of a collaboration project between different HE stakeholders, in Europe and the US, a new maturity model has been designed specifically for the HE sector (Alcolea, 2013).

In 2012, after a “Birds of a Feather” meeting held in Vila Real (Portugal) during the 2012 EUNIS Congress, the BI Task Force @EUNIS decided to undertake an assessment of the maturity level of BI initiatives in Higher Education Institutions (HEI). Currently, the active members of the BI Task Force include people from the University of Osnabrueck (Germany), the University Institute of Lisbon (Portugal), the Italian consortia *AlmaLaurea* and *CINECA*, and the Spanish *Office for University Cooperation* (OCU). The open and collaborative network of EUNIS members is the appropriate environment to nurture an observatory of BI maturity in the European HE sector. The goal of this project is to raise awareness of the critical success factors and pitfalls of BI initiatives, providing a transparent and unbiased assessment of the current state of affairs of BI implementations in European HEIs. The initial scope of the project involves the maturity assessment in four countries: Germany, Italy, Portugal and Spain. This paper describes the context and the design decisions of the survey for the maturity assessment of HE BI initiatives in these countries.

2. DESIGN OF THE SURVEY

The survey was designed to include the assessment required by two maturity models, the TDWI MM (TDWI Research, 2012) and the HE-specific MM proposed by Alcolea (2013), referred to as the White Book Maturity Model (WBMM).

The TDWI MM and associated Benchmark Survey (TDWI Research, 2012) enables a quantitative assessment of the maturity level of a BI program, as well as a comparison with the overall maturity score of BI programs of other organizations. The goal of the BI Task Force was to design a survey to enable HEIs to benchmark their BI initiatives against other European HEIs. To this end, the original TDWI survey was used with its 40 questions in eight categories (five questions each), representing the dimensions of the TDWI's BI Maturity Model. Only minor changes were introduced in the questions to better reflect the HE terminology. The categories presented in the survey are eight, the same are present in the TDWI MM: scope, sponsorship, funding, value, architecture, data, development, and delivery. The new MM presented in (Alcolea, 2013) represents a lean approach to maturity assessment. The WBMM model uses only nine questions to build a qualitative profile of the maturity of a BI initiative. The WBMM has nine dimensions: team, business units' role, users engagement, data products, user coverage, scope, business value, strategic support, and data management.

In order to gather information for the assessment with both models, the survey comprises a total of 49 questions. The nine questions pertaining to the WBMM were distributed across the eight-abovementioned categories. The survey is prefaced by a set of questions for the classification of the institution. These questions provide the background information required to contextualize and compare the results of the survey, for instance in terms of the size of the HEI (measured in terms of the number of students), type (public vs. private), country, budget, etc.

This pilot project includes the assessment of the maturity of BI initiatives of HEIs in four European countries: Germany, Italy, Portugal and Spain. The BI Task Force will contact a number of HEIs in each country that accounts for at least 90% of the national total number of enrolled students in HE in the academic year of 2011/2012. The scope of this project includes both public and private HEIs. In Germany, from a universe of 395 HEIs the BI Task Force plans to contact at least 205 HEIs, representing 93% of German student population in HE (with a total public share of 94%). The Italian HE System includes 96 institutions (67 public, 11 virtual), all of which will be part of the survey. However, the Arts and Music Higher Education system, consisting of several small institutions with a low number of students, will not be addressed by the survey. In Portugal, from a universe of 134 HEIs the BI Task Force will contact at least 49 HEIs, which accounts for 90% of the Portuguese student population in HE. In Spain, all 76 HEIs will be contacted and invited to participate in the survey.

The operationalization of the survey includes the following activities: (1) translation to Italian and Spanish of the original English version of the survey; (2) coding of the survey into an online survey platform (in this project, the AlmaLaurea survey platform will be used); (3) a controlled test of the survey in each country with a small number of HEIs, to detect and correct possible flaws in the survey; (4) running of the survey for a period of 40 days; and (5) data analysis of collected results.

3. SUMMARY

The data gathered from this project constitutes the first European assessment of the maturity level of BI programs in HEIs. The survey will enable each participating institution to perform a self-assessment and benchmark of its BI maturity level against other HEIs. The survey will also enable the evaluation of a HE-specific MM (WBMM). The main goal of the BI Task Force @EUNIS is to promote the creation of a European HEI-BI knowledge base, by systematically collecting and disseminating knowledge and experiences about BI in HEIs. The BI Task Force intends to fulfill this goal by acting as an independent observatory that periodically promotes the MM assessments.

4. REFERENCES

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Started his career as an analyst/programmer in FORUM INFORMÁTICO Y TECNOLÓGICO, where he spent several years involved in a project for developing an ERP system. After that, he joined the ALTRAN GROUP, where he worked as a BI consultant for the telecom sector for two years. In 2002 he started working for OCU as a BI Architect, being involved in several BI implementations in different Universities. Since 2008 he is the Director of the Institutional Intelligence area in OCU.

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He is the head of Planning and Controlling Unit in Cineca and coordinates a multi-skilled group of consultants, analysts and developers. His team develops and deploys an integrated suite of Business Intelligence solutions for Higher Education Institutions. The range of BI applications includes an enterprise Data Warehouse made up of analytical module for Finance, HR, Students, Teaching and Research, and decision support solutions for planning, budgeting, management control, forecasting, dashboards and KPIs.