

UNIVERSITIC: IT SURVEY IN SPANISH AND LATIN AMERICAN UNIVERSITIES

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1. ABSTRACT

The knowledge society that Europe designed in Lisbon is based on a modern higher education system with innovative methods and resources. Universities that were pioneering in introducing computation and Internet for research have been walking fast to adopt information technology (IT) in three levels: teaching, management and government.

In Spain, this evolution has sometimes lacked of assessments and of lightness. For this reason, the IT Committee of the Spanish Association of University Rectors (CRUE in Spanish set of initials), in 2004, drove the establishment of an inquest, called UNIVERSITIC, in order to achieve a global assessment of IT in universities that includes: IT description, IT Management and IT Governance.

The results of the first year's survey showed that Spanish Universities, in general had adopted a compromised stance with the aim of incorporating and use of IT, but frequently this compromise was more reactive than proactive, more improvised than planned.

Ten years later, this survey has been improved and now also includes the Latin America area. Current results indicate that universities usually plan IT implementation and they are aware of the need to achieve best practices both in IT management and in IT governance. So the UNIVERSITIC survey and its results are very useful for the Spanish and Latin American universities and we hope it could become a good reference for European Higher Education Institutions (HEIs) too.

2. WHAT IS UNIVERSITIC?

Today HEIs compete for best positions, as well as to get funds in local, national and international environments. At the same time collaborations are more and more necessary to succeed and to improve research. In this context, IT benchmarking is a powerful tool for quality and productivity.

In Spain, CRUE is running a survey called UNIVERSITIC since 2004 (Spanish UNIVERSITIC, 2013). Its main goal is to measure the current state of IT at each university and to compare it with the rest of Spanish Universities (IT benchmarking).

The IT Committee of CRUE (ITCC), composed by IT Directors and IT Vice Rectors (CIOs) of all Spanish Universities, and a group of researchers called the GTI4U Team, carried out this process.

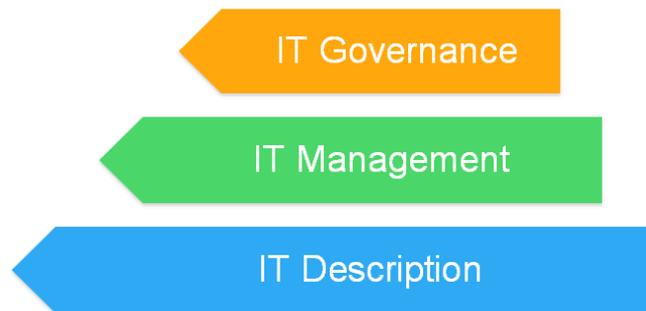
They collaborated to design the UNIVERSITIC survey based on a three tier catalogue (Figure 1):

- **IT Description:** Indicators in this tier allow us to obtain a detailed inventory of IT in all Spanish universities. They are distributed on 6 axes (Teaching and Learning, Research, Management, Information Management, IT Training and Culture, and IT Resources) that include 16 objectives and a total of 79 IT indicators.
- **IT Management:** These indicators are useful to analyze if universities have implemented IT management best practices. They are divided on 7 axes (IT Resources, IT Projects, IT

Services, IT Direction, IT Quality, Regulations and Standards, IT Collaborations, and IT Trends) that include 20 objectives and 117 IT indicators (80 variables plus 37 indicators).

- **IT Governance:** this tier makes it possible to analyze if IT governance best practices are implemented in each university. This analysis is based on the ISO 38500 principles (Responsibility, Strategy, Acquisition, Performance, Conformance and Human Behaviour) and includes 30 objectives and 128 indicators.

Figure 1. UNIVERSITIC a three tiers catalogue



Two years ago CRUE, GTI4U Team and Inter-American Organization for Higher Education (OUI-IOHE) began to collaborate using the same catalogue to analyse the status of IT at Latin American Universities (Latin American UNIVERSITIC, 2013).

UNIVERSITIC is the name that incorporates:

- A **Catalogue of IT indicators**, include cost and volume indicators but most of them are best practices indicators. There are 3 different kinds of indicators: description, management and governance. The last design of this catalogue was in 2011; now we are working on the UNIVERSITIC 2015 version that will support the next survey and it will be launched in April 2015.
- An **Annual Survey**, whose results are published in a report of the same name. There are two different surveys: Spanish UNIVERSITIC (nine editions) and Latin American UNIVERSITIC (only two editions).
- A **Knowledgebase**, which includes values from 9 survey editions in Spain and 2 in Latin America. This database is very important because it facilitates the comparison of the IT status of 105 universities from 12 countries (64 Spanish and 41 from Latin America). Each participating university has confidential access to this information.

Each year we launch three surveys. Two of them are an IT Description and Management Survey (Spanish UNIVERSITIC and Latin American UNIVERSITIC); the third one is an IT Governance Enhancement Project (ITGEP) which is a very different survey. In the next sections both types of survey are described.

3. UNIVERSITIC: AN IT DESCRIPTION AND MANAGEMENT SURVEY

3.1. Description

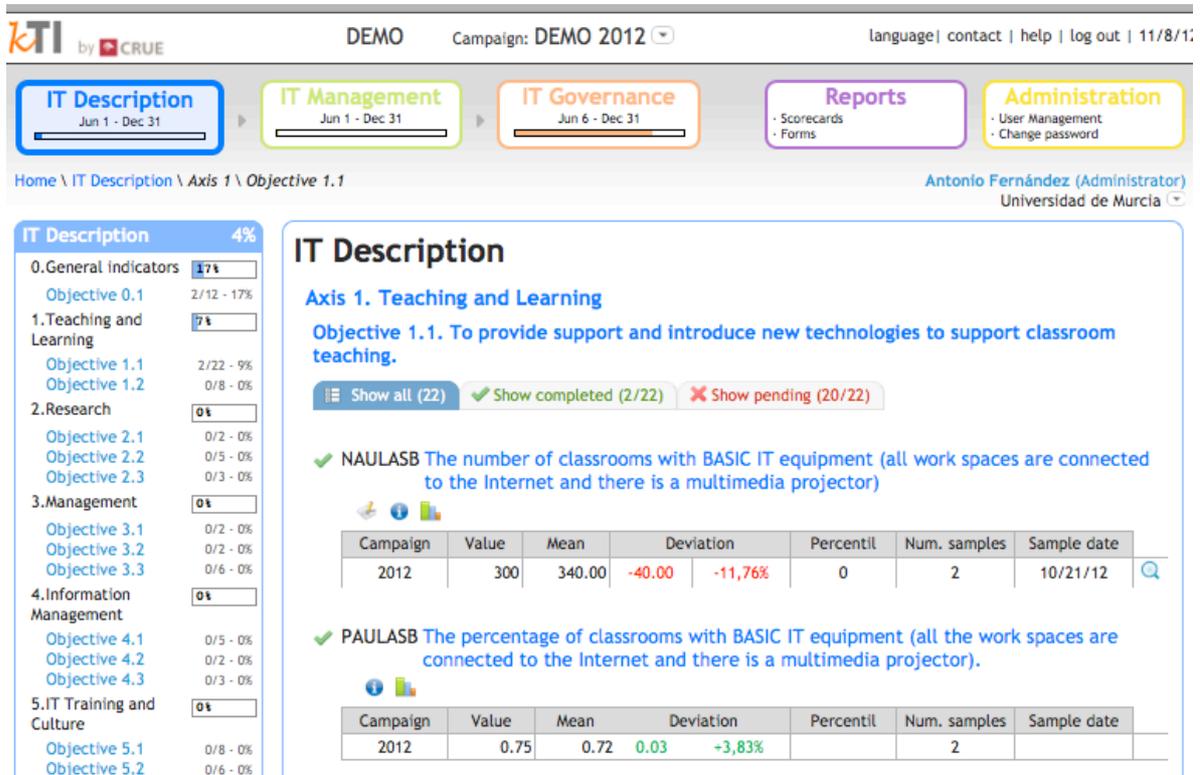
UNIVERSITIC is an annual survey and includes the IT Description and IT Management tier of the global catalogue. All of the indicators are quantitative values; there are no qualitative variables. The variables include cost and volume indicators but most are “best practice” indicators.

This survey is funded by CRUE (comes from partners) and therefore participation is currently free of charge. CRUE hires the GTI4U Team to promote participation, supervise the campaign, validate the dates, analyse the data and write the UNIVERSITIC Report.

UNIVERSITIC is usually launched in April and the report with its results is published at the end of the year. For the last two years, both surveys (Spanish and Latin American) were running at the same time.

The UNIVERSITIC survey is supported by web software named kTI (<http://kti.crue.org>). This software allows us to collect IT indicator values and show several online reports (dashboards). It has been prepared so that the design of new IT indicator catalogues is a simple and straightforward process (Figure 2).

Figure 2. kTI, web software supports UNIVERSITIC



The Head of the IT area of each university is in charge of the data gathering needed for the survey in his/her university. Usually, the responsibility of obtaining the data is distributed between different departments of the HEI. Each of these departments completes the IT indicators that correspond to them in kTI.

CRUE has established a Confidential Information Policy and for this reason the UNIVERSITIC Report only contains a detailed analysis of the aggregated results for all universities. Participants also receive an Excel file with all the collected values, which allows them to prepare their own reports and compare their situation with others universities (benchmarking) but they can only publish anonymous information.

Figure 3. Participation at Spanish and Latin American UNIVERSITIC



3.2. Participation

After ten years, Spanish UNIVERSITIC has achieved a high 88% level of participation (64 of the 73 Spanish Universities). However in the Latin American UNIVERSITIC survey the participation is still low, with only 41 universities making a return. These universities are from 11 different countries (Bolivia, Colombia, Chile, Cuba, Ecuador, Honduras, Mexico, Paraguay, Peru, Dominican Republic and Venezuela).

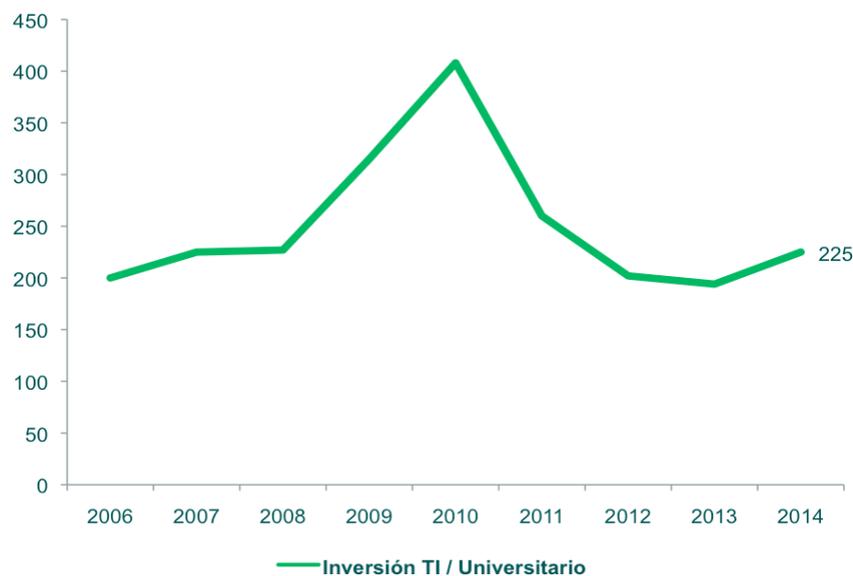
3.3. Results

Now, as an example, some of the main results of Spanish UNIVERSITIC 2014 per each axis of IT Description and IT Management are presented.

IT Description

- **Teaching and Learning.** 2 out of 3 classrooms have Internet access and a multimedia projector, 4% are fully IT equipped and 20% have no IT equipment.
- **Research.** 2 out of 3 researchers have the scientist's CV included in a global university database.
- **Management.** 60% of the e-government elements are implemented, so half of the management services are web available.
- **Information Management.** 2 out of 3 universities are supporting datawarehouse software.
- **IT Training and Culture.** 1 out of 3 training courses of the university have information technologies contents.
- **IT Resources.** There is an average of 282 students per IT staff member.

Figure 4. IT expenditure/student



IT Management

- **IT Resources.** IT expenditure has dropped drastically and goes up again to 225€/student (Figure 4).
- **IT Projects.** 70% of IT projects finished on time and 85% of them within budget.
- **IT Services.** 20% of IT services are outsourced.

- **IT Direction.** IT Directors spend 25% of their time planning IT strategies, 35% designing projects and monitoring IT services, 25% meeting providers and users or solving IT problems, and the rest of their time is devoted to other activities.
- **IT Quality, Regulations and Standards.** 1 out of 3 of the universities consider that its IT provision is controlled with an innovative style, 1 out of 5 with conservative style and most of them (4 out of 10) are followers.
- **IT Collaborations.** 87% of the universities usually collaborate with others to implement IT best practices.
- **IT Trends.** The first concern of the Spanish Government Team is *IT Governance and leadership* and the second is *IT for Learning*.

4. IT GOVERNANCE ENHANCEMENT PROJECT (ITGEP)

4.1. Description

In 2011, CRUE developed GTI4U, (Fernandez and Llorens, 2009) a reference framework for the implementation of corporate governance of IT specifically designed for universities and which fully complies with the ISO 38500 (2008) international standard.

CRUE then launched the “IT Governance Enhancement Project” (ITGEP) to assess the maturity of corporate governance of IT practices and to implement them at Spanish universities, so the IT Governance tier of the UNIVERSITIC catalogue is included in ITGEP.

CRUE promotes participation and supports the ITGEP with kTI and with a free IT Governance online course, however each participating university funds ITGEP.

ITGEP consists of 4 stages (Figure 5):

1. **Creating the IT Governance Committee (ITGC).** A working group is established to take responsibility for conducting the remaining stages of the ITGEP in the university. It should be composed of several members of the Governance Team (Rector/Vice-Chancellor, Vice-Rectors/Pro-Vice Chancellors and CIO) and also by IT directors with strategic responsibility.
2. **Educating the ITGC.** The second stage must consist of educating the members of the ITGC to be aware of the principles, structures and processes involved in IT governance, in order to become conscious of their responsibility in relation to this matter.
3. **Self-assessment of the maturity of corporate governance of IT.** ITGC firstly must establish **best practices** of corporate governance of IT that are currently being carried out in their university. They must then determine, for their university, the **maturity level** of these practices in relation to each of the six principles of corporate governance of IT laid out in the ISO 38500.
4. **Drawing up an Improvement Plan for IT Governance (IPITG).** This stage begins with a proposal of the IT governance maturity level that the university wishes to attain in the short term, i.e. in one year. Then the ITGC will agree a set of improvement actions in order to achieve the chosen maturity level.

Figure 5. Stages of the IT Governance Enhancement Project (ITGEP)



4.2. Results

Since 2011 ITGEP is being implemented at ten Spanish Universities. Once the ITGEP has concluded, certain preliminary conclusions can be identified regarding the maturity and best practices of corporate governance of IT that are applied in all of them.

Figure 6 shows that for the principles of Responsibility, Strategy, Acquisition and Performance; 1 out of 3 best practices proposed by GTI4U are implemented, while for the other two principles the rate of implementation falls to 1 in 5.

Figure 6. ITG Best practices implementation average in the ITGEP



These results clearly indicate that the universities taking part in the ITGEP are in the early stages of implementing best practices related to IT governance. This situation does not mean that they take their responsibilities lightly, or that their IT policy is inadequate, however, they would be well advised to formalise their corporate governance of IT and to implement the best practices of reference.

5. CONCLUSIONS

For ten years we have successfully used IT benchmarking in Spain and we commenced work in the Latin America area two years ago applying the same tools. This approach allows us to compare the IT Description and Management status of 105 universities (64 Spanish and 41 from Latin America) with 12 other countries. We have also established the IT Governance maturity level in ten universities and we know how to apply improving actions to increase it.

At the beginning, Spanish Universities, in general, adopted a compromised aim with the introduction and use of IT, but frequently it was improvised than planned. Ten years later, UNIVERSITIC now helps universities to plan their IT implementation and to achieve best practices on IT management and IT governance. The UNIVERSITIC survey and its results have proven to be a very useful tool for Spanish and Latin American Universities and we hope it could also be a good reference for European Universities.

Today, even in the European Higher Education area, it is very difficult to know the actual IT situation of a university in relation to another one located in a different country.

A possible solution is that European universities work together. Thus, in our opinion, European Higher Education institutions should collaborate in order to achieve the following main objectives in the short-medium term:

- Knowing the current state of the IT in all European Universities
- Each university should be able to compare its situation with the European global situation and with similar universities.
- Improve the IT role in higher education through designing a common strategy.
- Compare the evolution of IT within all European Higher Education Institutions

In order to achieve these objectives, the European universities must first design a unique and common set of IT goals that all could share. The common agreement on these basic goals, from which the aims of the IT support organization could then be established, is the main requirement of the work. Secondly, they could establish a unique and common set of indicators for all universities. Next, a European survey would be conducted. Finally, when the IT situation of European Higher Education Systems is analyzed, a set of common improvement actions could be proposed.

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