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# Digital IT Governance for Universities

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**University  
of the future**

A thousand year old  
industry on the cusp of  
profound change



**ERNST & YOUNG**

Quality. Expertise. World.

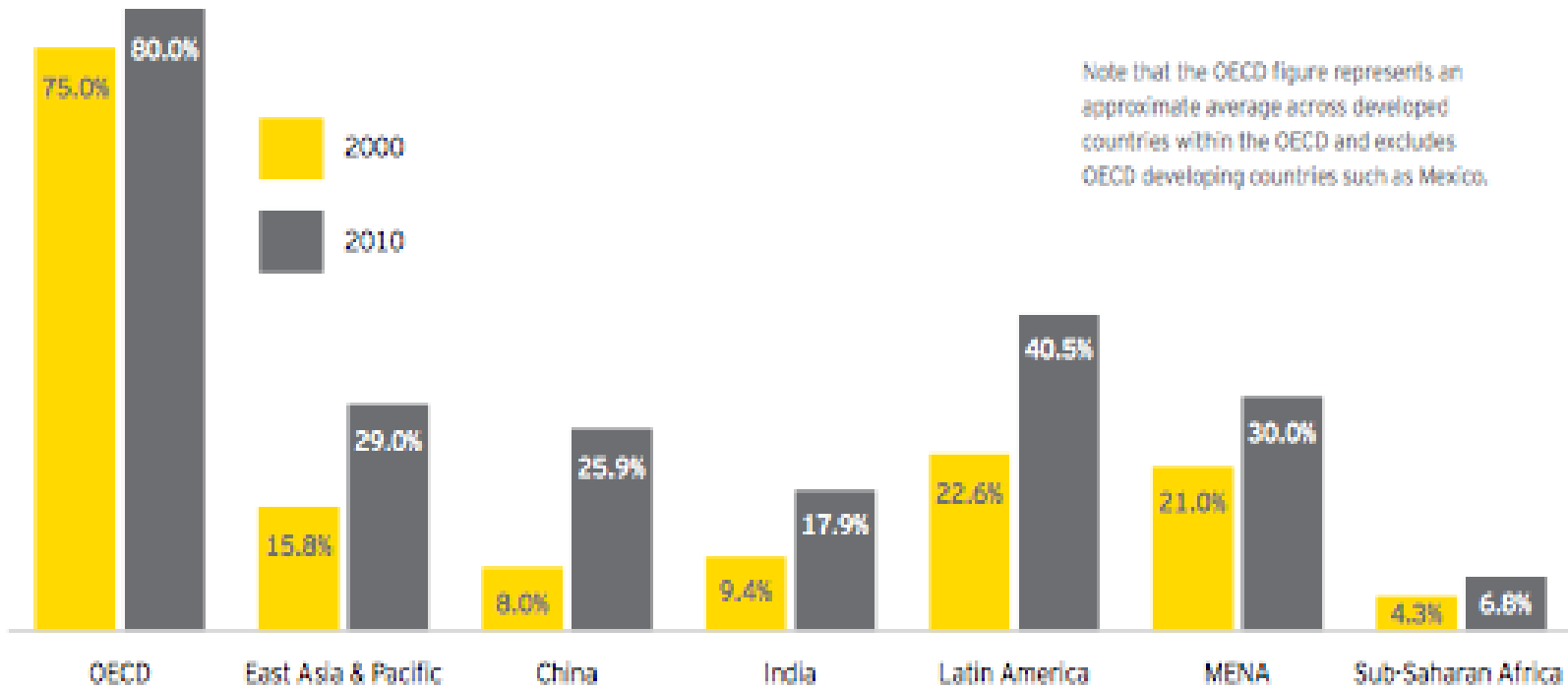


*The current Australian university model, a broad-based teaching and research institution, with a large base of assets and back office, will prove unviable in all but a few cases.*

*University of the future, EY Australia, 2012*

# Tertiary education participation rates

Figure 2: Tertiary education participation rates (Proportion of 18-22 years olds in post secondary education)



*“Our major competitor in ten years time  
will be Google ... if we are still alive”*

*University of the future, EY Australia, 2012*



# Drivers of change

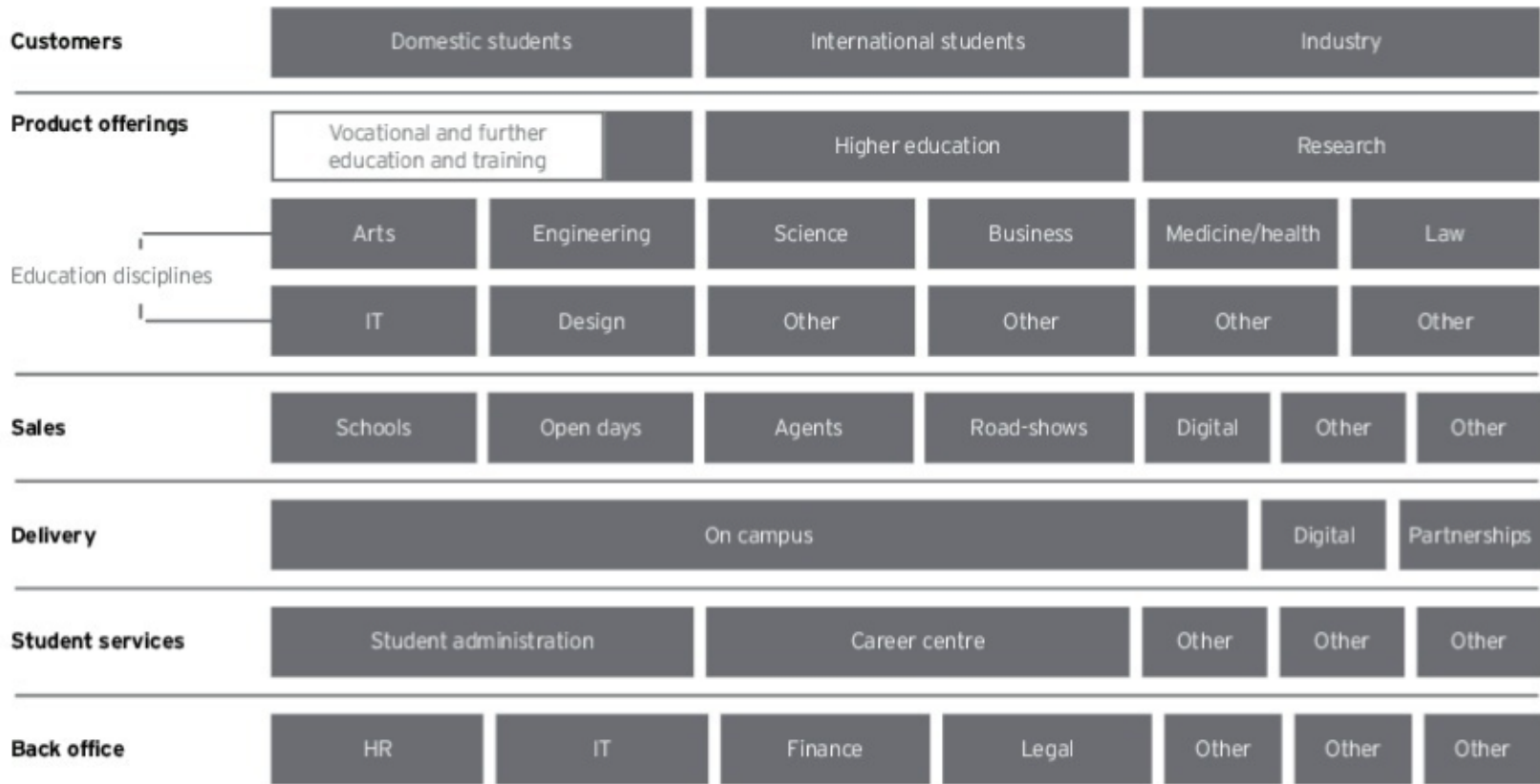
- Democratization of knowledge and access.
- Contestability of markets and funding.
- Digital Technologies.
- Global Mobility.
- Integration with industry.



*Digital technologies will transform the way education is delivered, supported and accessed, and the way value is created in higher education and related industries.*

*University of the future, EY Australia, 2012*

**Figure 7: Current model – established universities**



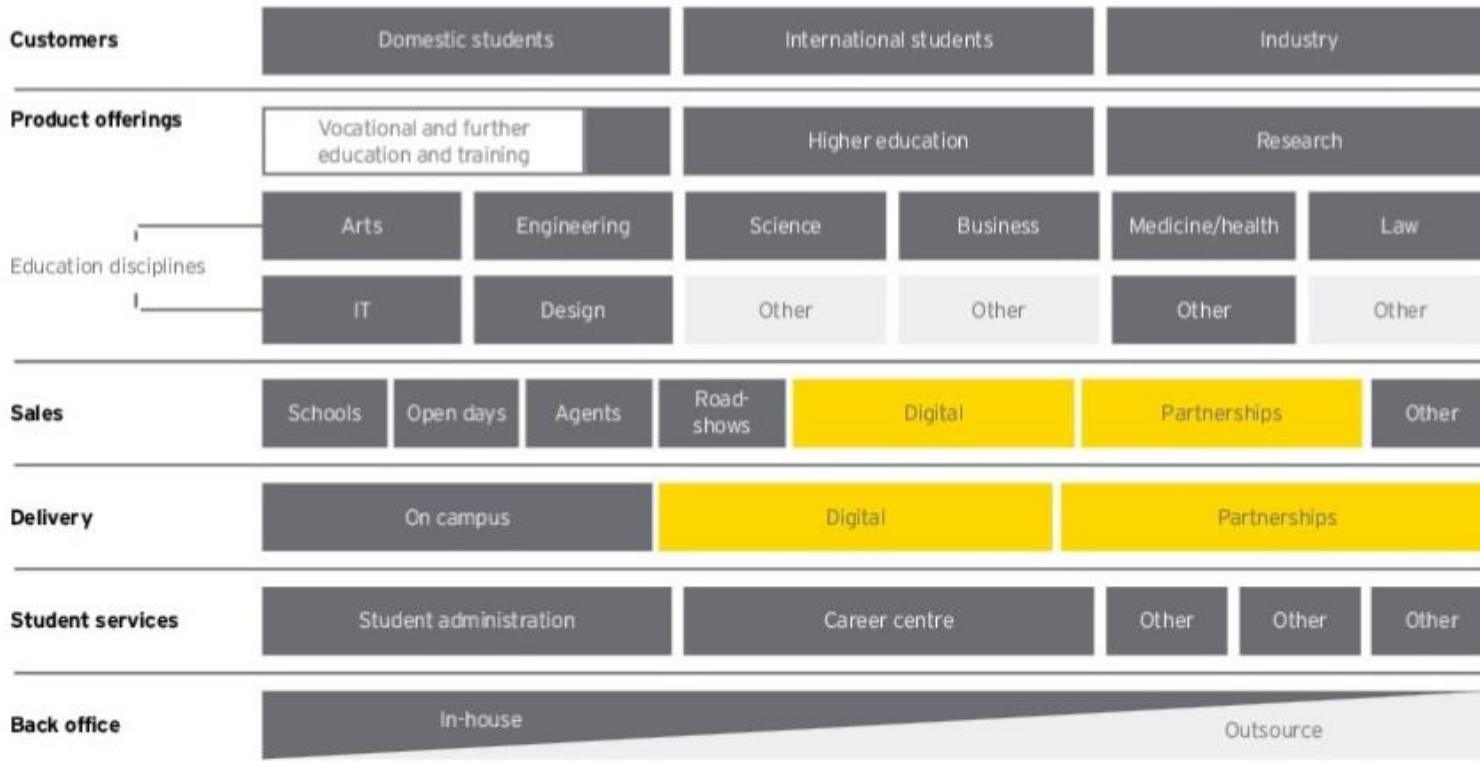
Source: Ernst & Young

Legend  Current area of focus

In the current model most Australian universities:

- ▶ Serve a broad mix of student segments – school leavers. mature age students.
- ▶ Deliver and manage the vast bulk of student services and back-office

*University of the future, EY Australia, 2012*

**Figure 8: Potential future model – ‘Streamlined Status Quo’**


Source: Ernst &amp; Young


**In this model, the university:**

- ▶ Continues to serve a broad mix of student segments.
- ▶ Continues to offer a broad range of disciplines, but discontinues a small number of sub-scale/unprofitable disciplines (or merges those disciplines)
- ▶ Forms a range of sales and delivery partnerships with public and private higher education providers, TAFEs, secondary schools, industry partners and other institutions that can open up new markets – or more efficiently

*University of the future, EY Australia, 2012*

# KIC ICT Labs

## EIT ICT Labs

[Home](#)[Innovation Areas »](#)[Education »](#)[Research »](#)[Business »](#)[About us »](#)[News & Events »](#)

### Education

- Doctoral School
- Master School
- Open Educations
- Summer Schools

[VISIT MASTER SCHOOL](#)[VISIT DOCTORAL SCHOOL](#)

## Breeding Entrepreneurial Talent Through Broad Educational Activities

EIT ICT Labs has the ambition to renew European higher education in ICT by cross fertilising cutting edge technical education with robust innovation and entrepreneurship education. EIT ICT Labs focus is on particular education activities such as the Master School and Doctoral School. Strong industrial involvement in the educational programmes as well as substantial hands-on experience on innovation and entrepreneurship are important. EIT ICT Labs educational activities enhance capacity for creativity, risk taking



# KIC Innoenergy



- Education ▶
- Master School ▶
- PhD School ▶
- Students' testimonials ▶

## WHY A NEW EDUCATION IN ENERGY?

Europe's need for highly skilled and entrepreneurial graduates, in particular masters and PhDs, will continue to grow in the years ahead. Europe not only needs employees but also future employers and entrepreneurs.

To meet these needs KIC InnoEnergy has gathered the **best technical universities, business schools and energy related corporations in Europe**, which together propose to you a completely new approach of education, that combines the best technical training in energy with transferable skills in innovation and entrepreneurship.

KIC InnoEnergy also offers a **PhD school with several thematic tracks** and a Post Master programme as well as self-assessment learning material and life-long education for industry.

For questions regarding KIC InnoEnergy's educational offer, please contact the coordinators of the Masterschool of the PhD School.

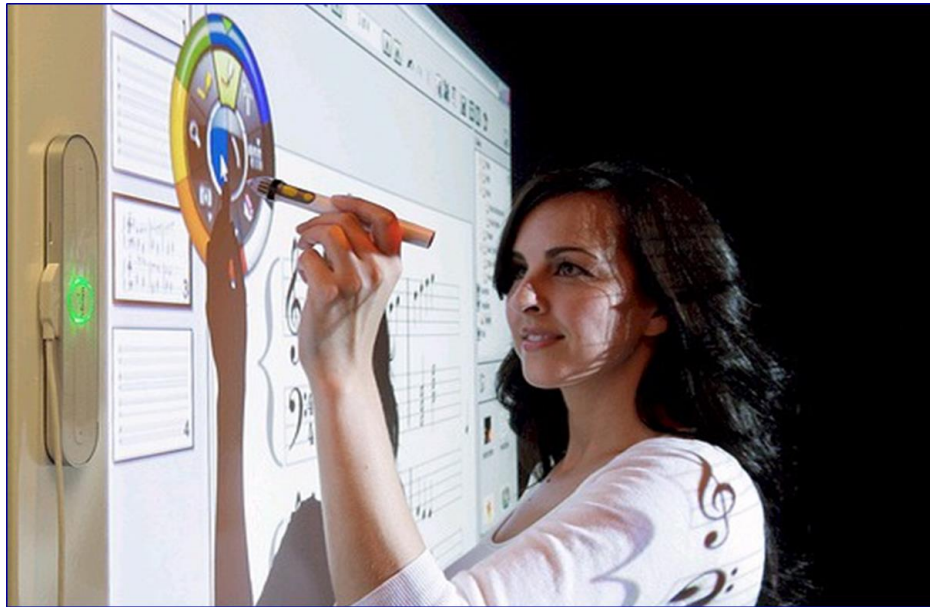
[E-mail](#)

## WHY SHOULD STUDENTS CHOOSE OUR MASTER PROGRAMMES?



# Global Agenda Council on Emerging Technologies

- Enhanced Education Technology was selected in 2012 among the Top 10 Emerging Technologies



# Enhanced education technology

- *A growing young population demanding education.*
- *Education under the requirements of knowledge society.*
- *Personalized IT-based approaches to education.*
- *Learner–centered education.*
- *Critical thinking and creativity.*
- *Ubiquitous access to internet and open courseware.*
- *The new scenario is facilitating outside classroom and continuous education*

## Global Agenda Council on the Future of Universities 2012-2014

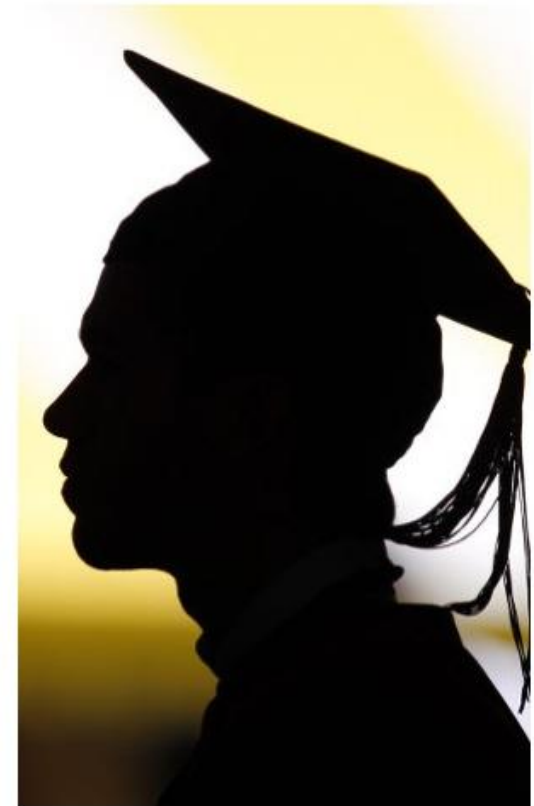
### The challenge

Higher education and research face the pressure of globalization, competition and commercialization. The rising cost of higher education in the Western world, combined with increasing strains in the job market and a poor economic environment, contribute to these pressures. According to CourseSmart, an e-textbook provider, tuition in the United States has increased 1120% since 1978. It is no surprise, therefore, that the recent boom in massive open online courses (MOOCs) has occupied debates and newspaper columns over the past 12 months. Directly or indirectly, the boom in MOOCs is putting higher education on the spot, along with the larger research sector. The speed at which change will happen has yet to be determined, but there is agreement that change will be deep, and that the universities which will be able to turn their challenges into opportunities will thrive.

### What the Council is doing about it

The Global Agenda Council on the Future of Universities has identified three broad challenges and opportunities:

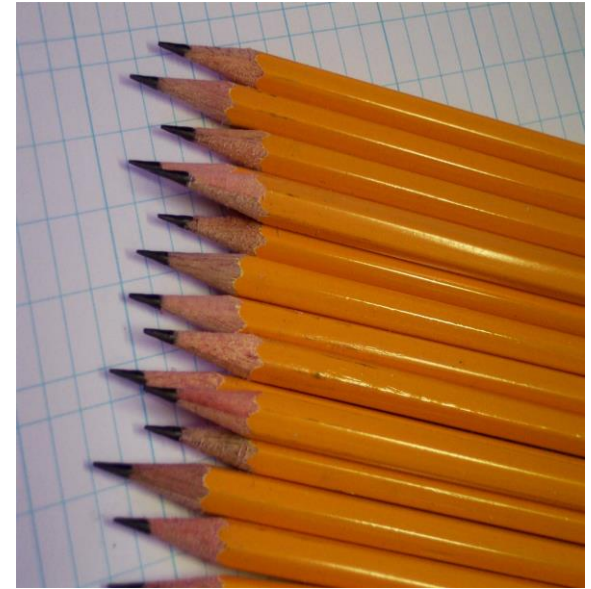
1. The roles of technology and online education, which are testing the entire learning and teaching model
2. The evolving roles of research and knowledge creation, which are under pressure from technology, funding and governance issues, new players and other factors, and which may no longer only be the prerogative of universities





# Global Agenda Council on the Future of Universities 2012-2014

- The roles of technology and online education, which are testing the entire learning and teaching model.
- The evolving roles of research and knowledge creation, which are under pressure from technology, funding and governance issues, new players and other factors.
- The challenge of values of the university and the social contract it holds with society in a world that is more global.



# What the university of the future look like?

- Online education is already the accepted norm
- The student at centre stage
- Universities will show a unique appeal.
- Online tsunami will impact revenue streams
- High tuition fees must offer a distinctive experience
- What's the difference between a degree and a certificate?
- Most successful universities will show a good balance between classical intellectual traditions and new educational models

# 14 Challenges from USA National Academy of Engineering

- **Advanced Personalized Learning** is one of the 14 grand challenges.
- **Students capabilities are different** and may require a personalized approach.
- **Digital Technologies** facilitate the interaction between instructors and learners.
- Some advanced technologies like **genetic algorithms** and **recommender systems** are applied to education

# Some facts related to IT in universities

- An important part of the innovation in the learning and teaching models is based on digital IT
- The open distribution of learning materials is creating a revolution and a growing flow of multimedia contents.



Source: *IT Trends in University Education. CRUE*

# Some facts related to IT in universities

- New production models and their corresponding distribution channels, let anyone, and by extension, any university **to become a producer of multimedia contents**.
- Growing students **mobility** increase the demand of **interoperability** among university systems, both administrative and academic.



Source: *IT Trends in University Education. CRUE*

# Massive Open Online Courses

## MOOCs

- On-line
- Open to anyone
- Massive. Hundreds of thousands students per course
- Global
- Based on the intensive use of learning support platforms
- No full time students are required

# A shift to more digital oriented education is happening

- Internet visibility management.
- A widely use of digital learning platforms.
- A growing production of open multimedia contents in higher education.





# A shift to more digital oriented education is happening

- **New services** (virtual labs, video conference, multimedia streaming, etc.).
- Coexistence with a **digital identity**.



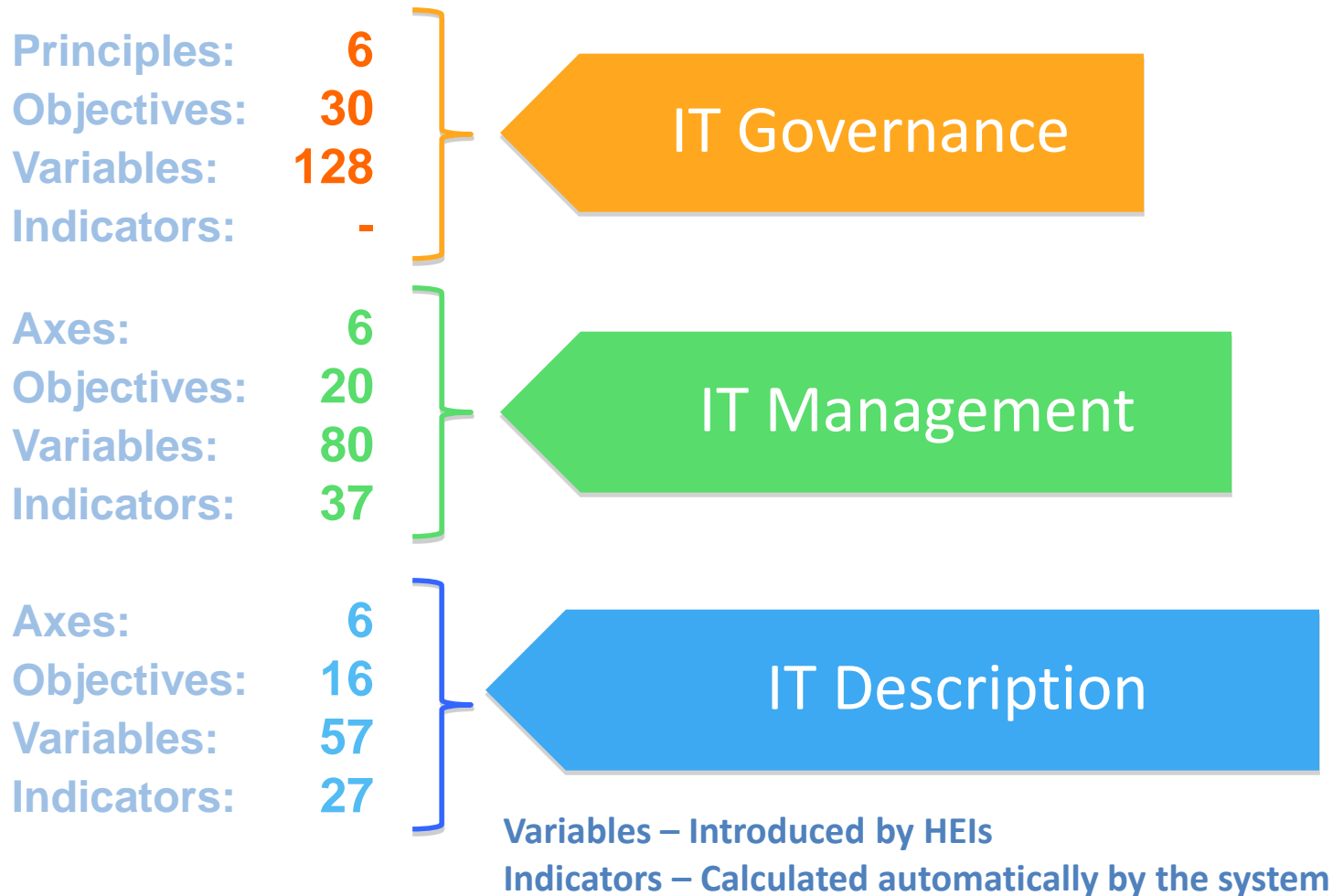


The shift to more digital models in higher education is unstoppable. The challenge is how to manage this change.

# Some Data from Spanish Universities



# UNIVERSITIC is a catalogue

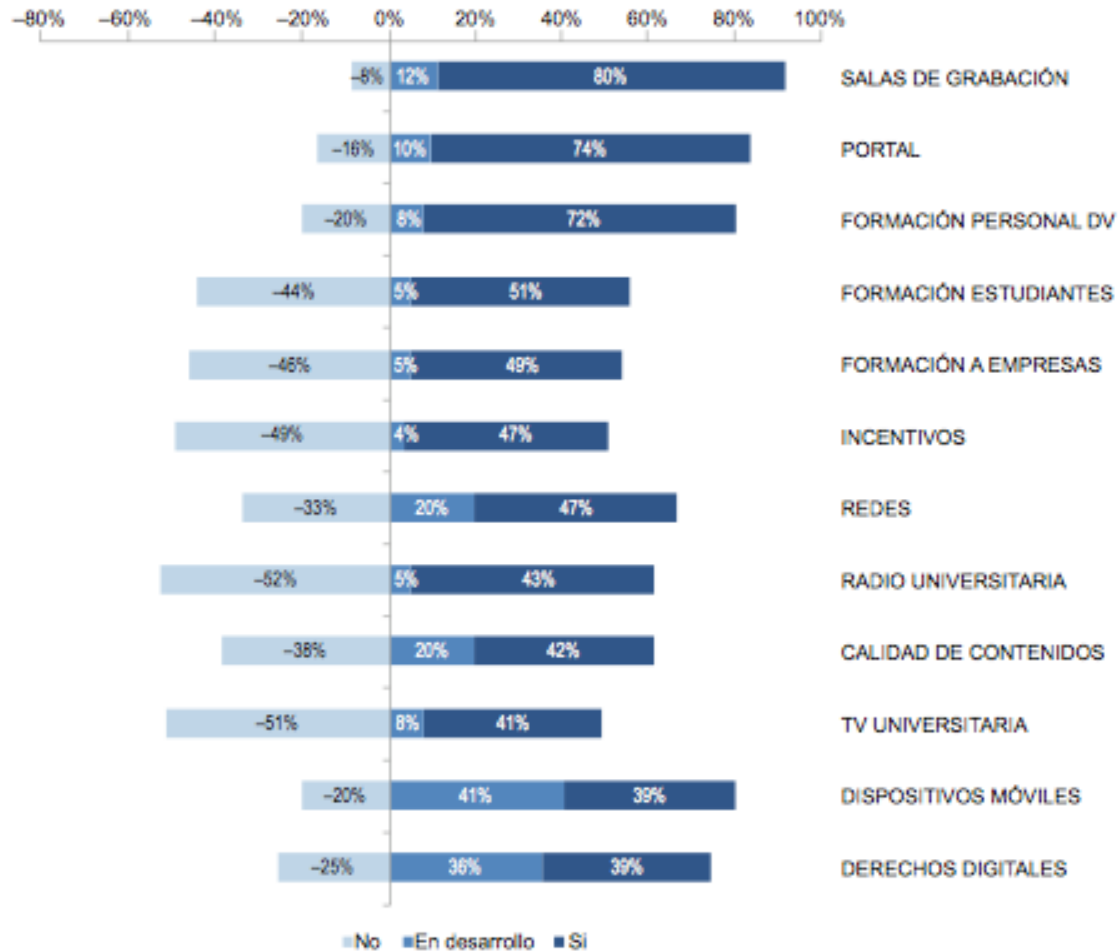


# Universitic 2013

Tipo de equipamiento	N.º Aulas	% Porcentaje
<b>Básico</b> (todos los puestos conectados a Internet y proyector multimedia)	17.060	63,09%
<b>Avanzado T1</b> (todos los puestos conectados a Internet, proyector multimedia y pizarra digital)	2.441	9,03%
<b>Avanzado T2</b> (todos los puestos conectados a Internet, proyector multimedia y posibilidad de grabar contenidos y/o distribuir la clase en tiempo real)	1.039	3,84%
<b>Avanzado T3</b> (todos los puestos conectados a Internet, proyector multimedia, posibilidad de grabar contenidos y/o distribuir la clase en tiempo real y red propia conectada a una pizarra digital)	926	3,42%
<b>Sin equipamiento TI básico</b>	5.573	20,61%
<b>TOTAL</b>	<b>27.039</b>	<b>100,00%</b>

# Universitic 2013

## Best practices in education



# Some preliminary conclusions

- In general, Spanish universities are in a good situation regarding IT infrastructure and services provided to their communities.
- On the contrary, IT Governance and Management could be clearly improved.
- The University of the Future requires a better IT Governance as a fundamental condition.



# IT Governance

From Win Van Grembergen

”the organizational capacity to control the formulation and implementation of IT strategy and in this way ensure the fusion of business and IT”

# The importance of IT Governance

- Universities (related to IT Governance) are not different from other organizations.
- IT management in universities has been often oriented to achieve the efficient use of IT resources to support the rest of university services.
- It is not enough, to conceive IT as an operative element which is isolated managed.
- IT should be an strategic element aligned with the global objectives of the university and delivering the maximum value.



# Conditions for an effective IT Governance

- IT is an essential part of university planning and strategy.
- Responsible of IT planning and decision making should be clearly identified.
- A project portfolio management system should be established.
- Risks assessment and management.
- IT's impact in the university business should be measured and monitored.
- Standards and regulations should be followed and implemented.

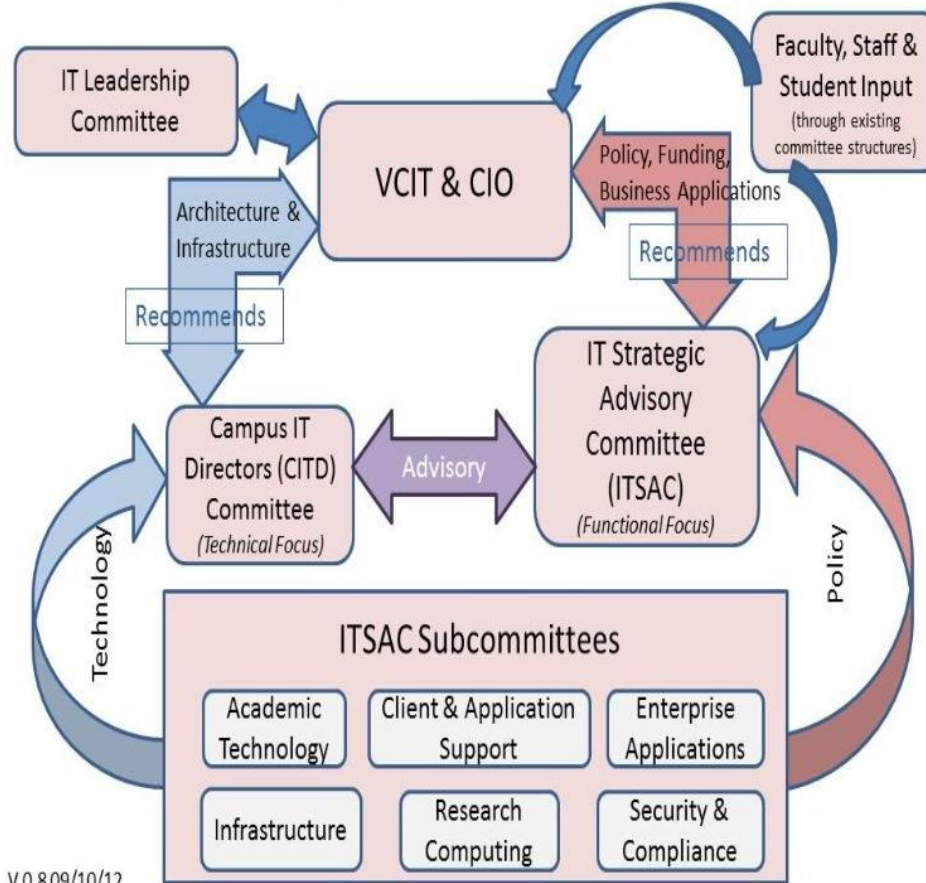
# EDUCASE recommends

- Facilitate the cooperation among universities.
- Develop IT Governance models specifically designed for universities.
- Promote best practices.
- Include IT Governance aspects in the students CV.



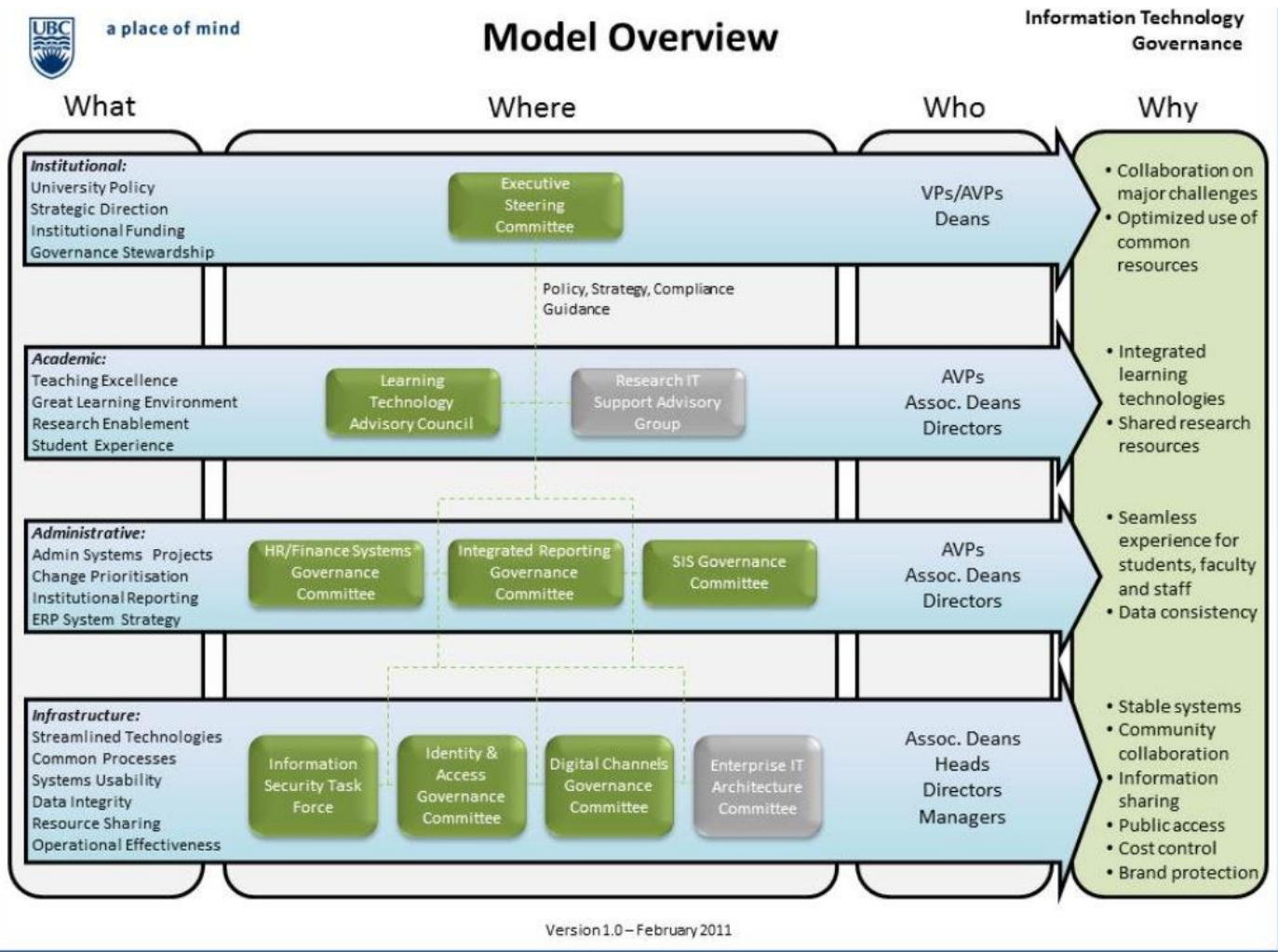
# IT Governance at NCS University

## IT Governance at NC State Flow



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# British Columbia University



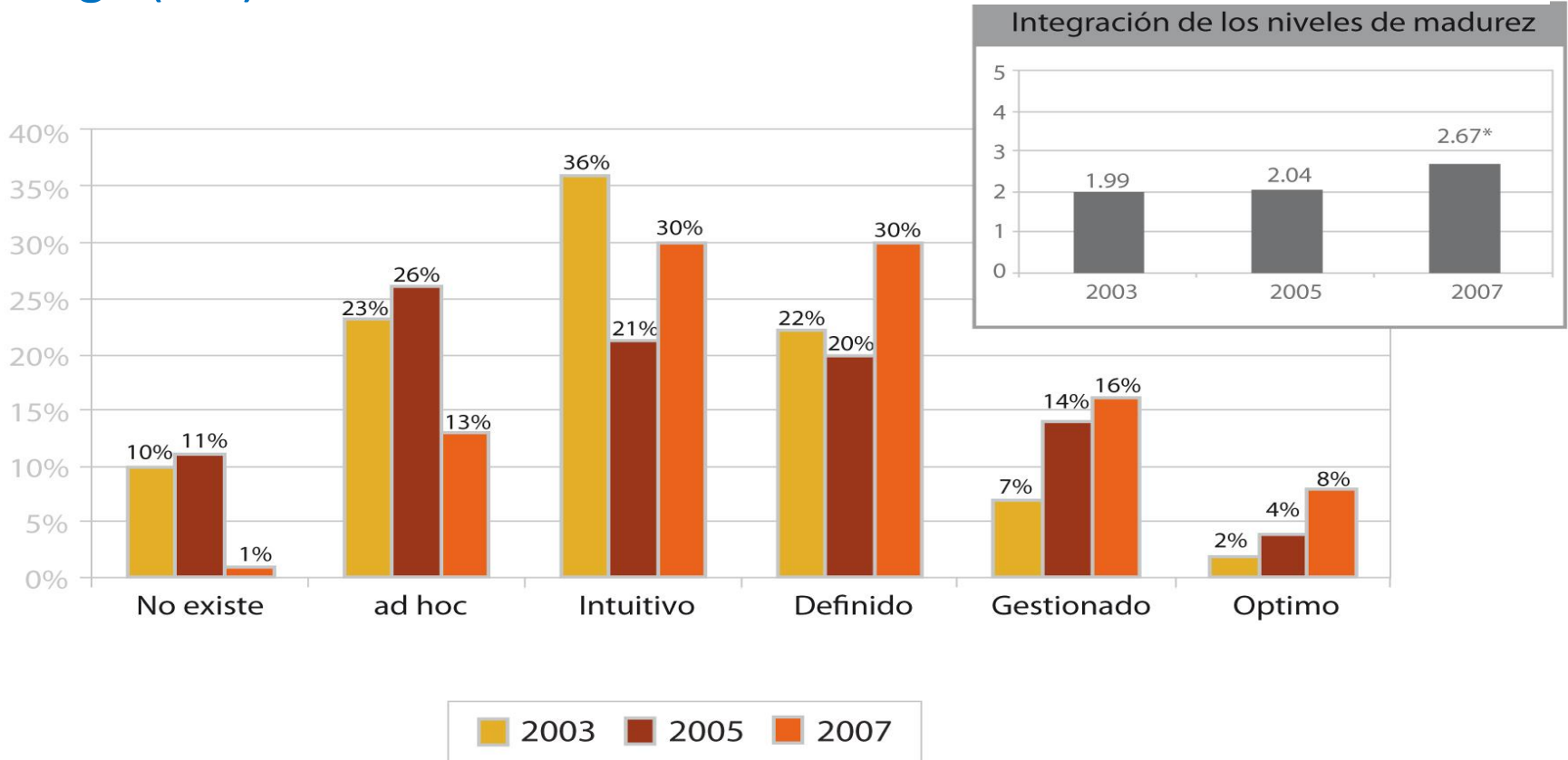
# Description of the ITGEP Programme for Spanish Universities

## Goals

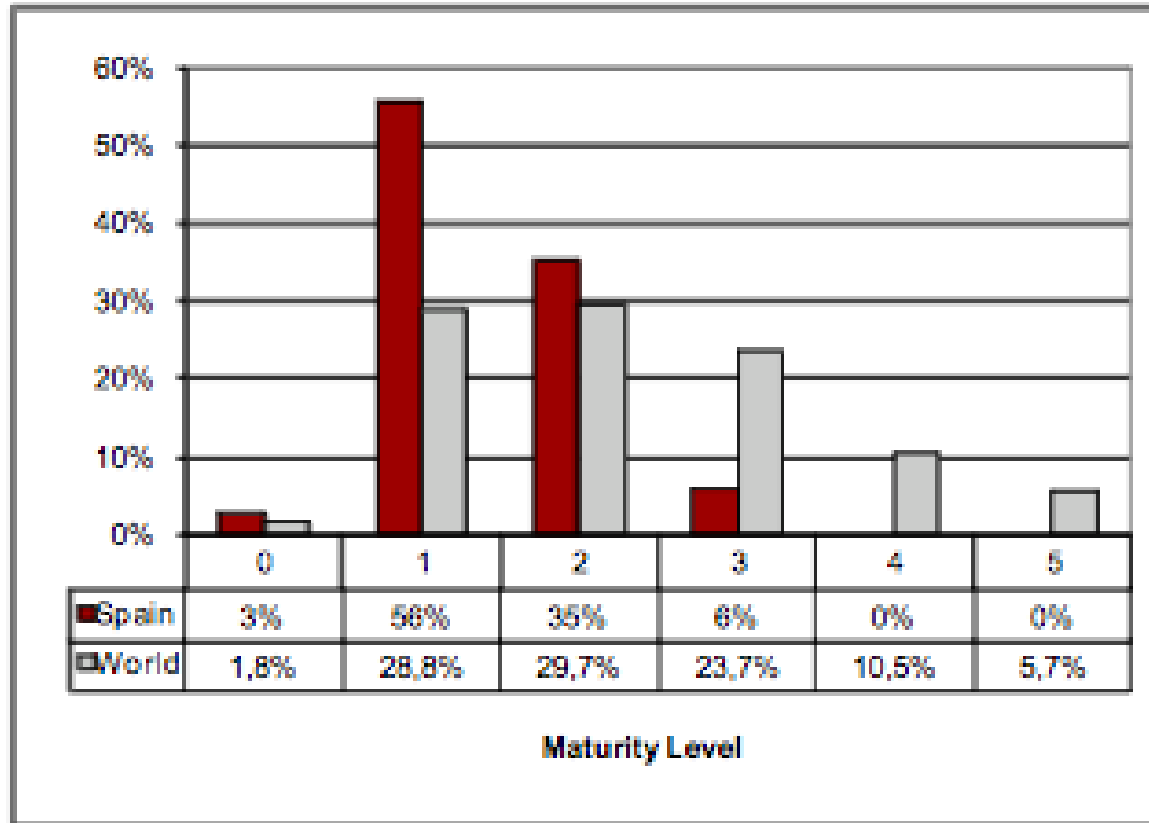
- To assess the maturity of corporate governance of IT practices.
- To promote the implementation of IT governance in the Spanish University System.
- To provide an empirical assessment of GTI4U (proposed model).
- To become an excellent reference for universities that intend to implement corporate governance of IT systems or to improve existing ones.

# IT Governance Maturity Level Evolution

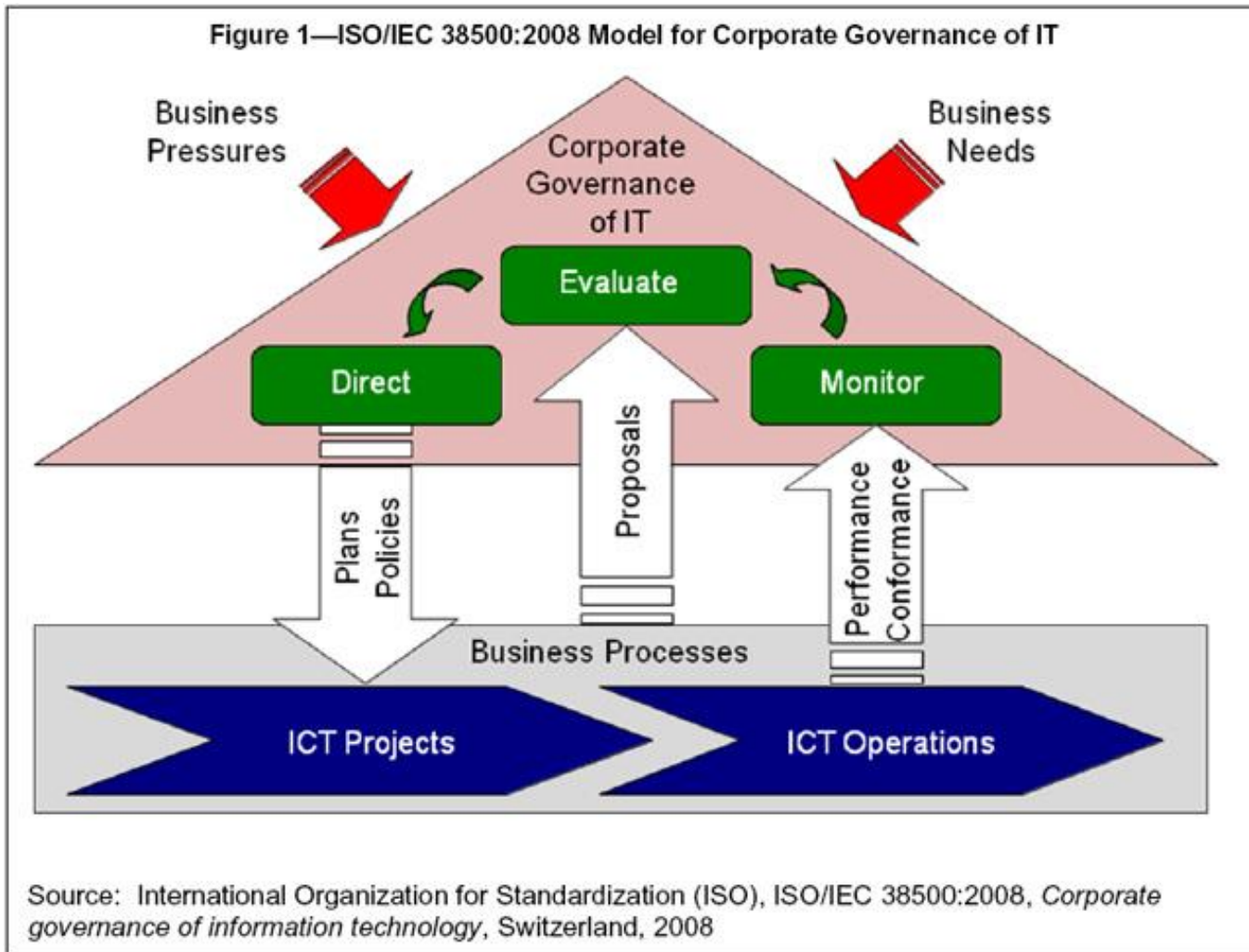
The maturity level in universities has continuously grown during the last few years, from 1.99 (2003) to 2.67 (2007). Maturity range (0-5)



# IT Maturity Level in Higher Education



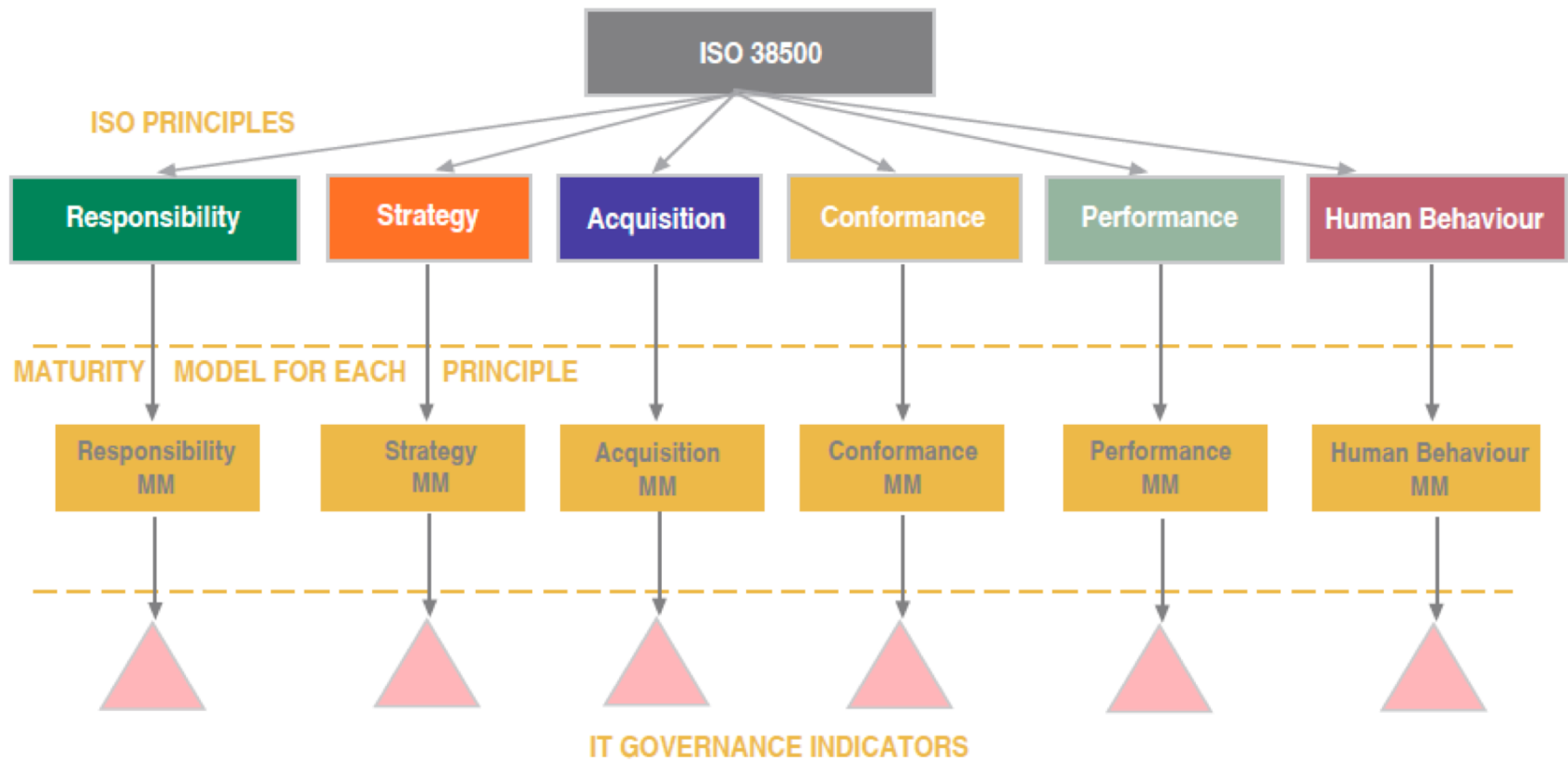
# ISO/IEC Model for Corporate Governance of IT





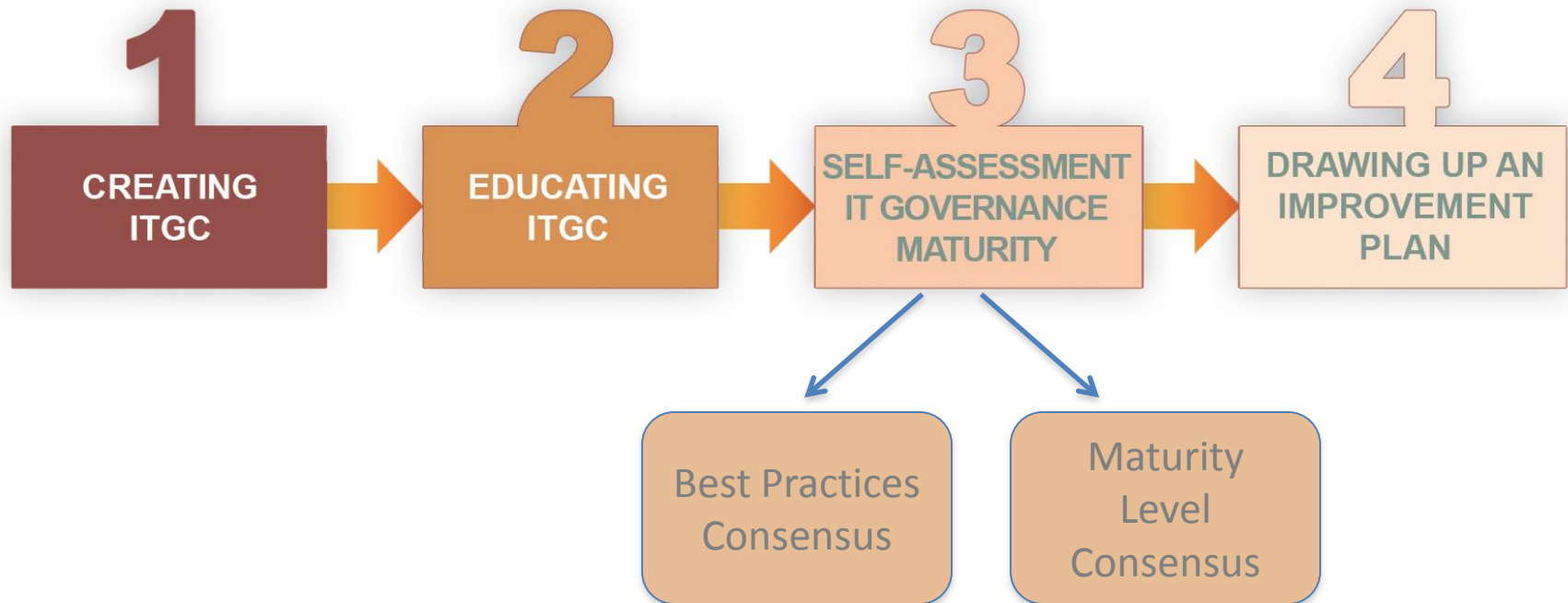
# Description of the ITGEP

## IT Governance Model for Universities (GTI4U)



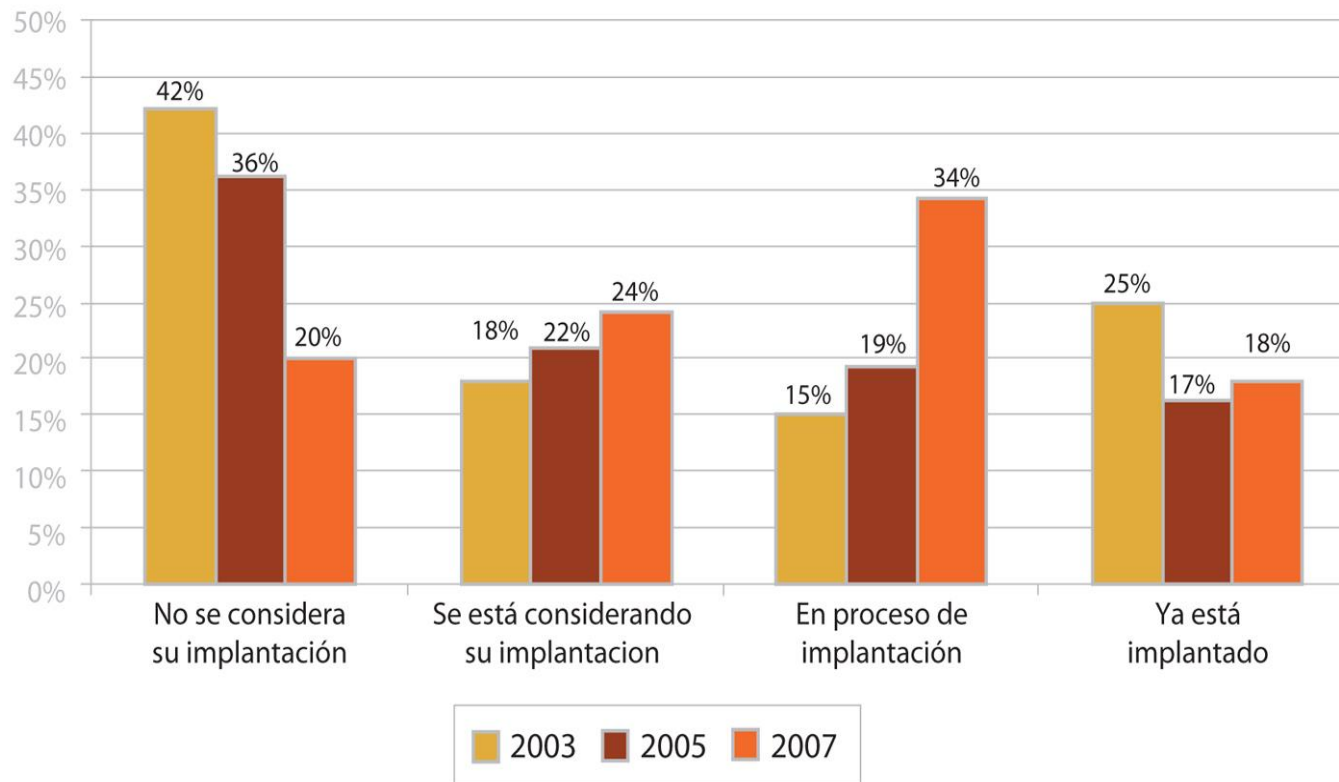
# Description of the ITGEP

## Stages of ITGEP



# Current situation of IT Governance in Spanish Universities

More than 50% of Spanish universities have already implanted or are in the process to be implanted.



# Conclusions

- IT and their constant innovation are conditioning the structure and operation of universities.
- The Future University will be different from the current model and the digital wave grows continuously. The challenge is how to manage all these changes.
- IT Governance is one of the key instruments to help the change management.