Information Systems Strategy and IT Governance ITC4212

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ITG frameworks
for specific organizational requirements

Content

Why ITG is important for universities?

ITG frameworks for universities

- JISC framework for ITG
- ITG frameworks for universities (ITG4U)

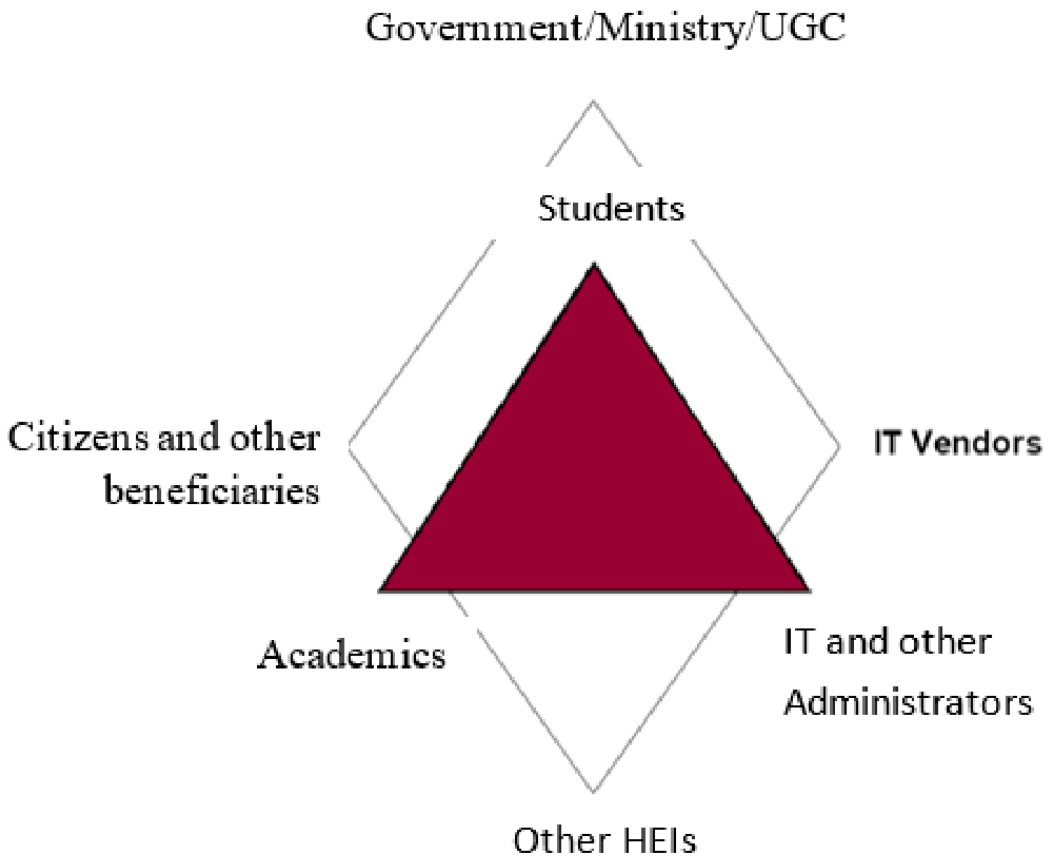
Importance of ITG in universities

- **IT is needed in a wide spectrum of requirements** in universities such as administration, teaching and learning and research.
- University governing bodies and policy makers need to **utilise IT in an efficient and effective manner** to improve and maintain academic, administrative and competitive positions locally and internationally.
- All over the world, countries have invested extensively in development of information technology in universities.
- **Investments in information technology create values in the higher educational systems of the country**.
- Though we invest more and more on information technology there are little evidence to justify, **how IT spending has improved Higher Educational Institutional performance**.
- IT governance in universities should **align with institutional objectives and goals to deliver the expected benefits of IT**.

Importance of ITG in universities

- Various factors need to be considered in having proper IT governance in universities.
- Many of the principles underlying the development of IT governance frameworks in the commercial sector may be equally valid for universities.
- IT governance aspects such as decision-making structures and approaches to risk assessment may be used in universities with little or no modifications as similar to other organizations.
- However, when considering the **processes that are specific to university education** such as **performance measurement, particularly profit-related financial performance measures need to be modelled with a different viewpoint to suit the concepts of IT governance**.
- As the role of IT governance is significant in the performance of universities proper **alignment of IT governance with the other university and corporate governance structure is to be considered with serious concern**.

Primary and Secondary Stakeholders in ITG in Universities



ITG frameworks for universities ..contd..

- Universities with effective governance have actively designed a set of **IT governance mechanisms such as committees, budgeting processes, approval, in line with the organization's mission, strategy, values, norms, and culture**
- Many companies' **IT structures have become increasingly complex** due to the continuous developments and enhancements of products and services to their stakeholders. Thus many **leading organizations invented principles for better governance of their IT resources**

..contd.. ITG frameworks for universities

- **In a university teaching, learning, research and administration** are the processes happening when compared with business processes of a typical organisation
- **In universities it's often difficult to ascertain whether the spending on IT is really contributing to the institutional objectives**
- Thus, **the concept of IT governance has penetrated the universities as a response to the growing pressure to ensure that universities are achieving value for money**.
- Accordingly, each university is to utilize all its resources with the objective of achieving goals as set/prioritized in the overall governance strategy.
- One of the main reasons why IT governance systems are being implemented and **maturing at a slower rate in universities** may be the lack of frameworks in the university environment.
- It is recognized that **guidelines for IT governance would need to meet the specific needs of higher education institutions**.

JISC framework for IT governance

- Authors are unanimous that there's no single IT governance framework is available to meet specific requirements of an organisation.
- **Most of the existing frameworks are complementary, with strengths in different areas, thus, using existing frameworks as starting point organisations have to roll their own models by mix and match approach.**
- **Recognising that none of the IT governance frameworks developed for the private sector provides a good fit for the requirements of the higher education**, Joint Information System Committee (UK) formed a team from the University of Strathclyde to develop a framework and toolkit to assist institutions in evaluating the management and governance of their information systems.

..contd.. JISC framework for IT governance

- As indicated by the University of Strathclyde (2007) developing an IT governance framework with distinct scope and boundaries is difficult and might cause various issues due to;

i. A large variety of systems should be considered as IT underpins almost every activity of universities.
ii. Systems that are to be developed or exist can have cross-sectional boundaries and issues may arise due to the conventional management structures
iii. As IT is embedded with other systems it is difficult to ascertain the effectiveness only in the component of IT

.contd.. JISC framework for IT governance

- As a solution to the issues indicated above JISC developed its framework around **five perspectives on governance, management, resources, structures, and services;**
  - **IT management**: the services, resources, and organization structures are the primary components of information systems and IT management.
  - The **governance** activity sits above and overlaps with management, and is primarily concerned with ensuring that management is effective and that activities are aligned with institutional priorities

.contd.. JISC framework for IT governance

JISC framework on IT governance for universities

.contd.. JISC framework for IT governance

- This framework has been produced with a **service-centered approach by having service as the center of the diagram**.
- The ‘service’ aspect delivers its services to stakeholders with the use of the **organization and the resources**
- According to the framework each of the perspectives i.e. governance, resources, organization, and services contains three key elements.
- The framework has been developed with the assumption that IT governance and management can **be achieved and improved by reviewing these twelve key areas.**
- This framework contains **a series of self-assessment questions** to allow institutions **to judge their strengths and weaknesses and benchmark across a range of information systems and IT governance issues**.

.contd.. JISC framework for IT governance

- This model has prepared self-assessment questions for the following 12 areas;;
  - **Governance** – vision, alignment, assurance
  - **Resources** – people, technology, finance
  - **Organisation** – structures, policies, decision-making
  - **Services** – systems, projects, service delivery

Governance

Vision: **IT vision of the institution** is to realize whether the institution has **defined its strategy for information systems and IT**.

- Primarily universities need to have **information strategy, IT strategy** with the approval of the top management. These strategies are to **be updated periodically and linked and covered all the aspects of the organisation.**

- **Alignment**: This aspect is to ensure whether the **information and IT systems of the organisation is to align with the organizational strategy**.
  - Universities need to have **IT steering committee** to oversee IT activities with relevant IT expertise and other stakeholders in the university. This committee is to be given **responsibility for taking decisions and monitoring activities including fund allocation for various projects and systems**.

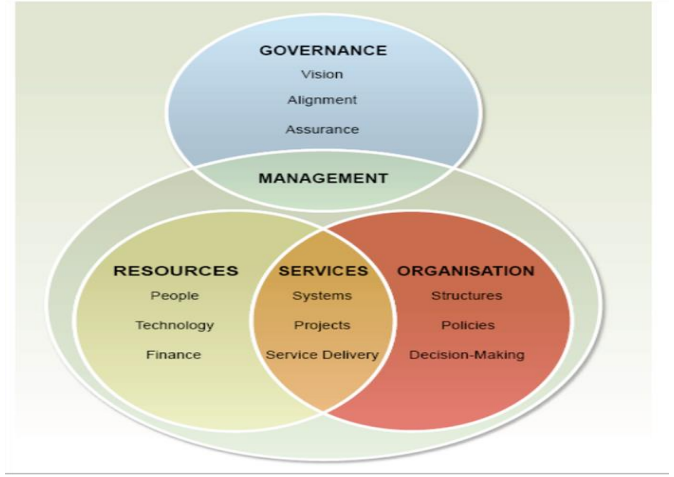
- **Assurance**: This perspective provides **assurance to its governors that their information systems are aligned to strategy**.
  - Submission of **periodical reports** to the relevant executives and top management, conducting of **systematic internal and external reviews and risk associated with investments** including risk associated with underinvestment are reviewed under this aspect.

Resources

- **People**: This aspect assures whether the organization has the **right people and skills to make effective use of IT in the organization**. Whether the universities have the **right number of people to manage their IT**, whether there is **staff as a backup** to run the organization's IT without interruption, and whether the staff and students have been provided the **required training** to manage IT services and resources are some of the concerns of the 'people' aspect.

- **Technology:** This aspect is to have the **right IT for managing its information strategy**. **The capacity of the IT infrastructure** to meet universities' present and future requirements, IT with the **highest security precautions**, the **existence of regularly updated long-term IT replacement plans,** and **processes to identify emerging new technologies** are some of the processes that need to be available.

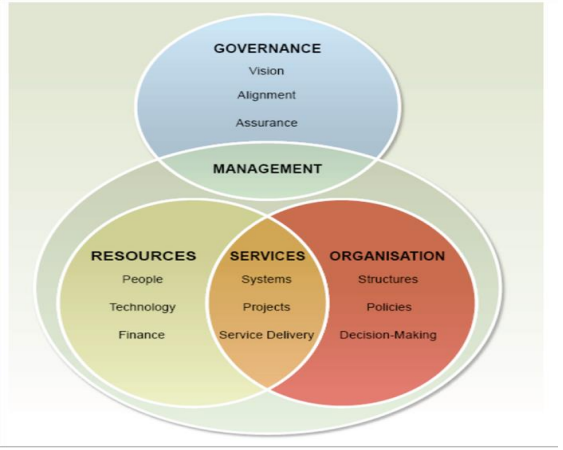
- **Finance:** This aspect assures one of the primary concerns of the top management whether the **universities achieve value for money invested in IT and information systems**. The existence of processes for **identification of how much money to be spent on IT**, **aligning spending of funds with the information strategy**, **regular reporting procedures, and allocation of funds** through the **reviewing of the IT steering committee** are some of the processes available in universities.



Organization

Structure: This aspect is to have the **right information system support structure** in line with the information strategy and IT strategy. **Periodical reviewing of which information systems and elements are centralized, decentralized or federal** are to be considered in relation with the cost, benefits and risks associated. Further, a **documented policy** is to be available explaining rights and responsibilities with devolved IT and information systems and periodical reviews are to be conducted to see the **suitability of the existing IT structure of the university**.

- **Policies:** Universities need to have **a set of policies and procedur**e to manage its information and IT systems. **Acceptable use policy, information security policy, monitoring relevant compliance and legislation, disaster recovery, and testing of the disaster recovery** are some of the processes to be available under the policy aspect.
- **Decision making:** This is to ensure that the **universities make informed and effective decisions** about information and IT systems. Having an **IT steering committee with sufficient expertise, submission of project proposals for significant investments, evaluating proposals** in relation to their potential benefits and regular identification of obsolete services are some of the processes to have in place to have the right decision-making.



Services

- **Systems:** Systems aspect considers whether s**ystem architecture support the institutional strategy**. Some of the concerns coming under this aspect are having **structured approach for planning its systems, integration of key corporate systems, cohesive access for key corporate systems, infrastructure sufficiently flexible to adapt future requirements and consideration of potentially appropriate solutions**.

- **Projects:** This aspect is to assure that the **universities take necessary precautions to achieve objectives as planned in project defining**. Use of **project management methodologies and submission of regular reports** are some of the processes to be available.

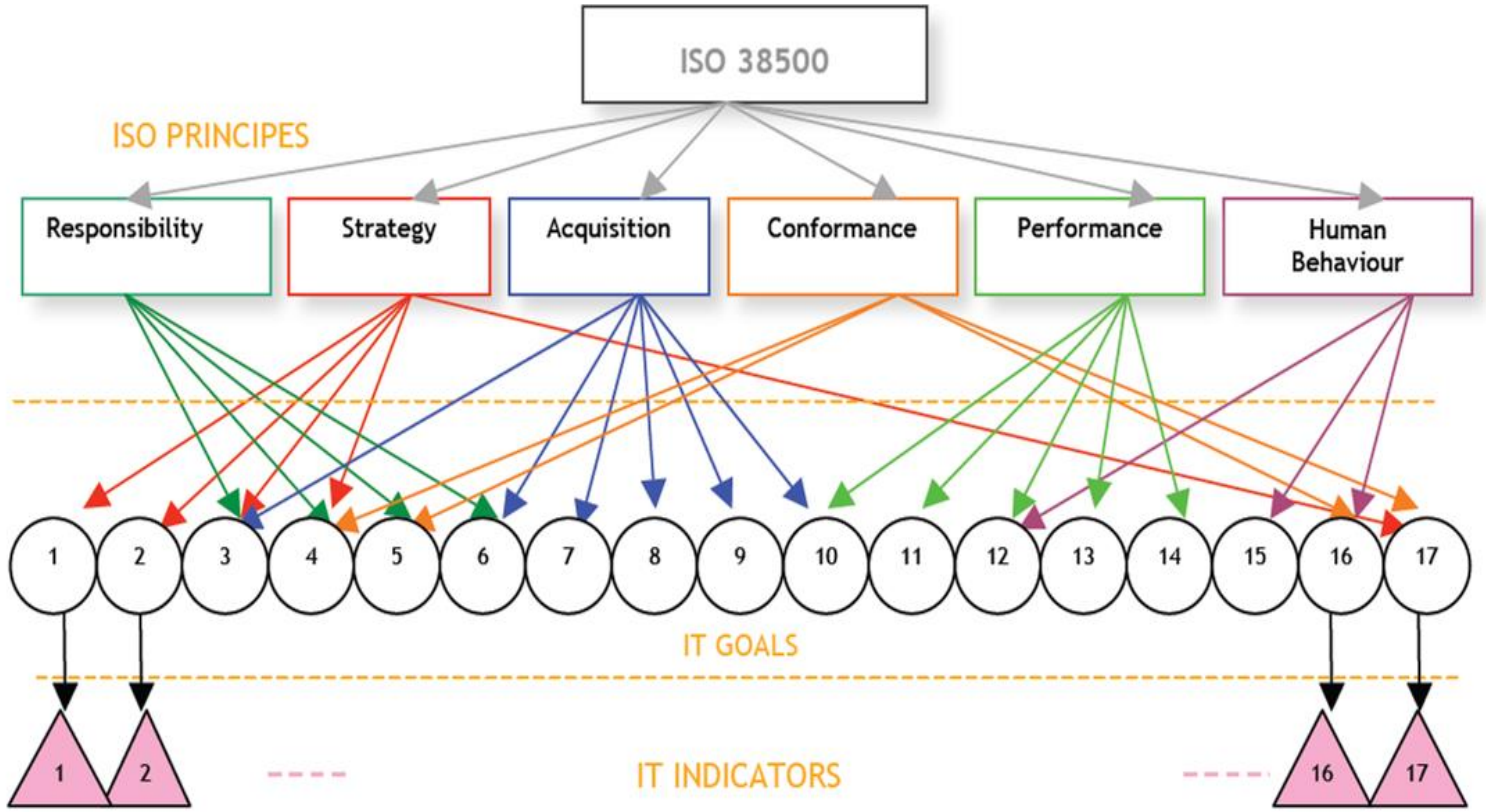
- **Service Delivery:** Aspect of ‘service delivery’ is to ensure that the **IT services meet the expectations of the users**. **Regular canvassing of the requirements, active management of expectations, monitoring of the service levels, and obtaining feedback on user satisfaction** are some of the processes to available under service delivery.

IT governance framework for universities (ITG4U) ..contd..

- Using the model developed by JISC and other previous studies Fernandez (2008) developed an IT Governance Framework (ITG4U) for the Spanish Association of University Rectors (CRUE in Spanish).
- This framework based on the JISC framework, utilizes the **principles and characteristics of ISO 38500.**
- This model is “reasonably general”.
- The ITG4U is divided into three levels:
  - the upper level contains the 6 ISO 38500 principles;
  - the middle level includes **17 IT objectives and their relationship with each of the ISO principles**;
  - the lower level consists of three types of metrics **(maturity indicators, qualitative evidence indicators and quantitative evidence indicators)** that will be used to measure whether IT objectives have been fulfilled.
- IT goals 1-17 of the framework are given in the Table

Reference: Questionnaire for assessment

..contd.. IT governance framework for universities (ITG4U)



Reference to 1-17 goals of ITG4U framework	
1	Have a very clear idea of the vision and IT strategy for the whole university.
2	Align the IT strategy and the institutional strategy (business strategy).
3	Reach IT objectives using an integral IT governance system.
4	Have a decision making structure aligned with the IT strategy.
5	Provide high level IT policies and procedures which comply with external laws and regulations and support international standards.
6	Make IT decisions that are correctly reasoned and effective.
7	Know and achieve the return value on IT investment.
8	IT projects must achieve the planned goals.
9	Define an IT architecture that will include process definition and system integration.
10	Acquire the necessary technology to fulfil the requirements of the institution.
11	Guarantee that the established ITs are working according to plan.
12	IT-based services must meet the level required by the users.
13	Know and manage IT associated risks.
14	Ensure that IT systems are flexible and agile in responding to future changes.
15	Have adequate and sufficiently trained staff who can govern IT efficiently.
16	Incorporate respect for people and social and environmental values within the IT strategy.
17	Exchange IT experiences with other organisations and with society as a whole.

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..contd.. IT governance framework for universities (ITG4U)

- To simplify the implementation of the ITG4U framework in each university, several tools could be developed:

  - **a web application with the questionnaire** that supports the auto-evaluation process about IT governance maturity a system for automatic result analysis, a maturity model definition (similar to COBIT´s),
  - the creation of **a good practices guide** to support the design of improvement initiatives,
  - the publication of **an annual study interpreting the status of IT Governance** within the global context.

Indicators

- To measure their level of maturity, a set of indicators for each IT goal are established which are made up of three types of indicator
- **Maturity indicator** of IT goals is a qualitative indicator (with a value of between 0 and 5)
  - which defines the maturity of each of the IT goals in relation to a descriptive checklist included in the Maturity Model.
- **Qualitative evidence indicators**; a set of qualitative indicators is associated to each IT goal and their value (between 0 and 5) should define the maturity of the IT objective to which they belong. There are between 5 and 10 qualitative indicators for each IT objective depending on the objective in question (Table 3). These indicators include questions related to the elements of IT governance, for example, “Does the university have sufficient financing to be able to implement the IT strategy?” or “Is the IT strategy updated periodically?”
- **Quantitative evidence indicators**; a set of quantitative indicators is associated to each IT objective which together with the qualitative indicators help to ascertain the maturity of the IT objective to which they belong.
  - For example, a quantitative indicator related to the qualitative indicators mentioned above would be “IT investment budget = 100 million rupees”, “Percentage of IT investment in relation to global investment budget = 5%” “How often are IT strategies reviewed? = every 3 years”, etc. the number of quantitative indicators for each IT objective is around 5, but this may vary depending on the objective.

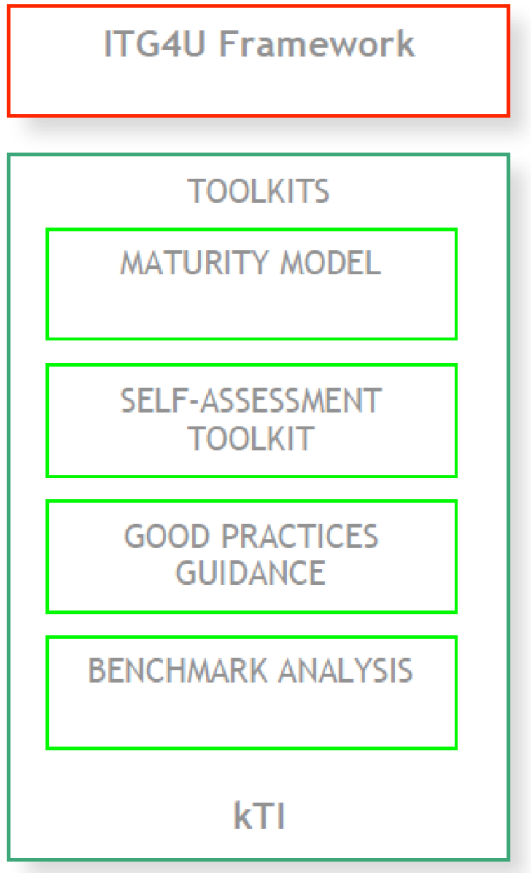
..contd.. IT governance framework for universities (ITG4U)

Table 3. Qualitative evidence indicators for IT Goal 1

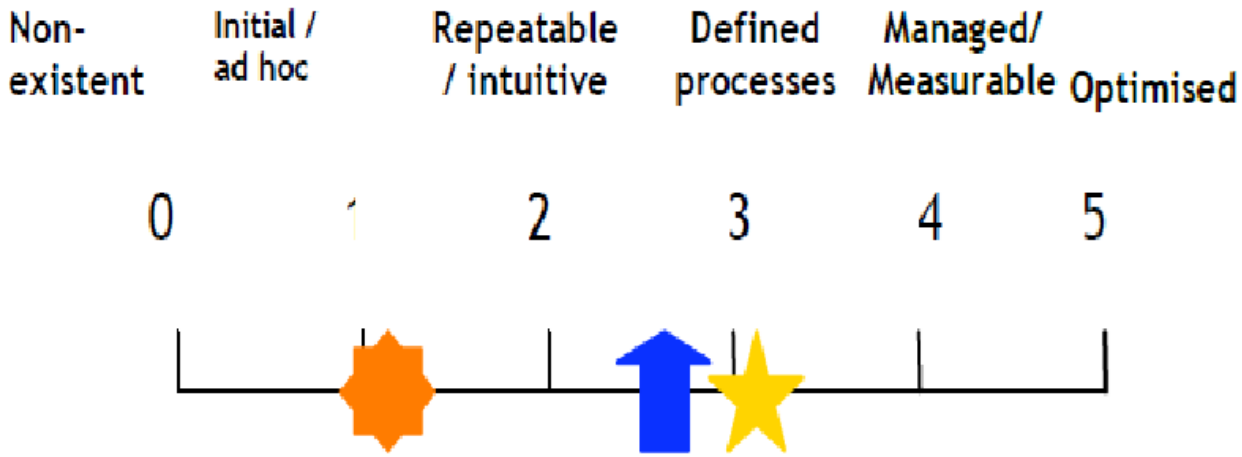
IT Goal 1: Have a very clear idea of the vision and IT strategy for the whole university.
Has responsibility for overseeing the implementation of the IT Strategy been assigned to an IT Strategy Steering Committee?
Does the IT Strategy Steering Committee represent all relevant stakeholders in IT and information systems?
Does the institution have a documented IT strategy (or equivalent)?
Are the strategic priorities of IT clearly defined?
Are the strategies and operational priorities which appear in the University Institutional Strategic Plan clearly shown in the IT Strategic Plan, with no ambiguity, masking or loopholes?
Has this strategy been approved by the Senior Executive group and the Institutional Governing Body?
Are these strategies periodically updated?
Are all the institution's information systems covered by the IT strategy?
Does the IT strategic plan focus only on central initiatives and activities or does it include activities which involve the University as a whole?
Does the IT strategic plan include a procedure to measure the level of achievement of every IT goal?
Is there a defined procedure through which the management can transfer the foundations of our IT strategic plan to the rest of the organisation?

ITG4U Toolkits contd..

Besides the ITG4U framework, a series of toolkits has been designed which will facilitate the implementation of the framework in each university



Contd.. ITG4U Toolkits contd..



Current status of the university

HEI average

Target value of the university

0 -the university does not have a defined IT objective, it is not aware of the need for one

1 - Objective established, but with disorganised and ad hoc processes

2 - Objective immature, the processes follow a regular pattern

3 - Objective begins to mature, documented and communicated processes

4 - Objective reasonably mature, the processes are monitored and measured

5 - Optimum level of objective, based on good practices

..contd.. ITG4U Toolkits

Self-Assessment Toolkit

- A self assessment is available for each of the seventeen IT goals, there will be a series of questions (that include all the indicators), whose answers will indicate whether the characteristic elements of each of the maturity levels have been fulfilled.
- The suggested question will include almost all of those present in the JISC self-assessment toolkit.

Benchmark Analysis

- As Universities carry out their self-assessment processes, they will be sending information to a central system which will be in charge of analyzing this information and determining the average level of each IT goal for the HEI, along with other results of interest for IT managers.
- The system will analyze the results obtained and will publish an a**nnual report which will help the universities to understand the global maturity of the HEI and carry out benchmarking processes**.

Good Practice Guidance

- Once the self assessment has been completed, each IT manager will have to **plan their own improvement actions.** To facilitate this planning, we will offer **a guide containing a collection of good practices relating to each of the IT goals**. These guides will be similar to those offered by JISC


Q&A
Questions
Answers


THANK
YOU