Information Technology Governance for Tunisian Universities (ITG4TU)

561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP

Co-funded by the
Erasmus+ Programme
of the European Union

IT Governance Framework: University of Sfax

ITG4TU CONSORTIUM

AMENDMENT HISTORY

Version	Revision	Date	Author	Modification
1	0	18 Jun 2017	Ricardo Colomo	Initial Version
1	1	28 Jun 2017	Beatriz Gómez	Editing Modification
2	0	30 Jun 2017	Ismail Bouassida	New Version
2	1	3 Jul 2017	Slim Kallel	Adding minutes
2	2	10 Jul 2017	Ismail Bouassida	Minor Changes
2	3	22 May 2018	Slim Kallel	Maturity levels update
2	4	29 Jul 2018	Ismail Bouassida	Risks management section update
2	4	3 Oct 2018	Ismail Bouassida	Evidence colmun added
3	0	3 Oct 2018	Antonio Fernández Martínez	Review

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

CONTENTS

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

FIGURES

TABLES

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

1. Background

ITG4TU project is aimed to gather a set of researchers from four European universities with a wide experience in developing and deploying IT Governance framework models from three different countries (Spain, Germany and Norway) to develop, adapt and test a new IT governance framework to be implemented in several Universities in Tunisia. Therefore, the expected results of this project include a new governance model for IT in Tunisian HEIs as well as an overall modernization of the governance processes, related to IT, for HEIs and a contribution of the cooperation between EU and Tunisia. One of the main results of this project is the design and later implementation of a specific framework for each of the Tunisian universities part of the consortium. This document is intended to describe one of these frameworks, more specifically the one for University of Sfax.

Problems in IT Governance (ITG) are not particular of a given country or continent. Taking this into account, IT Governance artefacts can be common to almost all country in the world. However, special needs in the deployment are purely local (i.e. dependent on the university teaching portfolio, the ownership of the HEI, the level of knowledge on the topic, the local governance rules, the governance culture, etc.). This leads to the fact that already implemented approaches in ITG for Universities can be used as inspiration for a "Glocal" Tunisian initiative. However, this cannot be done without the active participation and competence of Program Countries. In other words, previous success case studies and current competence on the topic will lead to a better ITG setup. This active participation cannot be reached without European cooperation. To reach this aim, specific objectives of the project were categorized as follows:

- Phase 1: Perform specialized training modules for building ITG models in Tunisian universities (already completed). This training targeted three types of stakeholders of universities: professors, students and administrators/managers. Professors were trained in two ways, those professors who wished to acquire new knowledge to include ITG as a teaching and research discipline. Regarding, graduate students from related studies of IT and even in Management/Business Administration could acquire new skills to ensure their further professional or academic integration. Of course, the main target of this project was the intermediate management and board executives of universities, as well as functional IT departments that could take this opportunity to better align their IT strategies, and are able to support this project.
- Phase 2: Build ITG frameworks, adaptable to each institution, for the participants of the project. As a result of the aforementioned training in ITG, Tunisian universities in collaboration with EU must be able to implement their own ITG framework and their corresponding instruments of ITG. In order to know every Tunisian university reality, European partners visit each institution and assess their individual IT governance situation.
- Phase 3: Perform training to employers in IT sector, mainly mid-size and large companies both public and private. ITG has been shown as a facilitator to produce higher ROI of

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

enterprises, coming from further development of IT assets. This training will result in a greater connection between Tunisian universities and the surrounding economic and social stakeholders. It will also provide project sustainability, since once Tunisian trainers (professors) of local universities were accredited, they may continue providing specific training to local businesses.

The purpose of this document is to present the ITG framework tailored to the needs of University of Sfax.

2. IT Governance framework development roadmap

In a previous document (Governance-framework-development) consortium defined a set of steps to develop the ITG framework tailored to the specific needs to the four universities participating as partner countries:

1. Define and validate a ITG Framework: structures (people), the strategic alignment artifacts (processes, procedures, best practices…) and the communication issues, necessary to assure a good governance of IT. **(Activity 2.5. Governance framework development)**
2. Design and validate an ITG Maturity Model based on this ITG Framework. This tool will be useful to establish the current ITG maturity of each university, select the goal maturity level and describe the best practices that each university must implement to achieve it. **(Activity 2.5. Governance framework development)**
3. Evaluate the current ITG maturity level through the previous analysis of the best practices and propose a future maturity level. **(Activity 2.5. Governance framework development)**
4. Design an improvement ITG plan based on the best practices to achieve the ITG maturity level proposed for each university. Specify how the creation of such structures will be done, which kind of alignment activities will be performed and what documentation to communicate that will be required. **(Activity 2.5. Governance framework development):**
5. Assess, by the European partners, of the proposed plan and the viability of the activities. **(Activity 2.6. Governance framework assessment)**
6. Implement, by the Tunisian partners, the approved plan including the recommendations if any. **(Activity 4.5. Governance framework deployment)**
7. Follow-up, by the European partners, on the evolution of the plan. **(Activity 4.6. Governance framework monitoring)**

In this document, it is intended to develop the first four points in the previous list adapting the discourse to the needs of University of Sfax.

However, given the interactive nature of the process, in this document partners adopted an approach that presents some adherence with the real steps to be taken in order to provide a better view of the process. In order to do so, in what follows, the following aspects are analyzed. Firstly, and regarding the partner producing this document, the environment of the ITG

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

framework will be described. This includes the description of the main international efforts for ITG in universities, the international frameworks studied and as the last factor, the description of the composition of the ITG Group inside the organization. The second aspect is the description of the evaluation of the ITG best practices and their assessment inside the organization. In third term, one can find ITG maturity model including the adaptations on the IT Governance Framework maturity model that must be developed, the review of the adaptation of the maturity model to your organization to be done by program partners and finally, the maturity goal selection. The last part of the framework is the definition of the deployment plan including main steps, dates, responsible and key performance indicators.

3. IT Governance environment

Before the definition of the framework in terms of best practices and the adopted, maturity model, there is a need to define common tasks related to the development of such artefacts. In what follows, the descriptions of several tasks performed before the development needed in order to provide the infrastructure of the framework are provided.

3.1.Study of experiences in other countries

Within the framework of the project ITG4TU a Study was done and published (Annex K). The abstract of this paper gives an idea about experieces in other coutries. “Information Technology (IT) is a very important aspect for higher education institutions (HEI) in both teaching, research and administration. The managers of those intuitions are more and more aware that IT is a strategic tool for their institutions. On the other hand, IT Governance is getting attention from the practitioner and research side, given the need to govern IT extending the organisation's strategy and objectives into IT. IT Governance helps to set clear expectations, to gain participation, open communications, establish accountability and provide executive management oversight. Thus, it is important to consider IT Governance and the alignment with business strategy for HEI. In this article, authors present a Systematic Literature Review (SLR) on IT Governance in HEIs using a collection of scientific and non-conventional data (grey literature). The motivation that drives this literature review is the further development of an IT Governance framework for Tunisian universities. This article aims to define the situation of the IT Governance in other countries. This article aims to provide a map of the state of the art of IT governance in HEI in various countries. Results show a mixed situation of IT Governance in HEIs. Some countries have the support of top-level management to introduce IT Governance in HEIs by adopting regulatory frameworks and common laws. But other countries relay in their strong culture of IT Governance. The different case studies presented in this review show that there is no consensus on the IT Governance framework or standard to use in HEI. An important number of institutions are implementing COBIT or ISO best practices. In the other hand, some counties have developed their own frameworks. Results show there is no a single way to implement an IT Governance framework designed for HEI. However, it is also true that there are two mandatory aspects that are necessary to implement in IT Governance deployments: firstly, establishing a committee structure for IT assets and secondly, enable effective communication between the IT, the business and the stakeholders”

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

3.2.Study international ITG frameworks

In this section explores the work of some international ITG Frameworks[1].

COBIT provides ICT managers, auditors and users (information and communication technologies) with indicators, processes and best practices to help them maximize the benefits of using computer technology and developing governance and control of a company.

It helps them understand their IT systems and determine the level of security and control needed to protect their business, through the development of a governance model for information systems such as COBIT.

Thus, COBIT provides key goal indicators, key performance indicators and key success factors for each of its processes. The COBIT model focuses on what the business needs to do, not how it should do it.

The COBIT repository is a structure of relations and processes aimed at steering and controlling IT techniques by the management of the company to achieve its objectives, using these techniques as a means to improve the activity and meet the business needs, consolidated requirements in the company's strategic plan.

It is based on 5 principal keys of governance and IT management:

- Meet the needs of stakeholders;
- Cover the business from end to end;
- Apply a single frame of reference;
- Separate governance and management
- Promote a global approach.

The Framework by Calde-Moir is worth mentioning. The Calde-Moir IT Governance Framework is designed to help you use all these overlapping and competing frameworks and standards, and also to deploy the best practice guidance contained in the international standard for IT governance, ISO/IEC 38500.

The purpose of the ISO/IEC 38500 standard is to promote the effective, efficient, and acceptable use of IT in all organisations by:

- assuring stakeholders (including consumers, shareholders, and employees) that, if the standard is followed, they can have confidence in the organisation's corporate governance of IT;
- informing and guiding directors in governing the use of IT in their organisation; and
- providing a basis for objective evaluation of the corporate governance of IT.
- This standard sets out six principles for a good corporate governance of IT:

[1] This section is a citation of the work of Antonio Fernández and Faraón Llorens in the paper "An IT Governance Framework for Universities in Spain"

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

1.Responsibility. Individuals and groups within the organisation understand and accept their responsibilitieswithrespect to both the supply of, and demand for IT. Those with responsibility for undertaking actions also have the authority to perform those actions.

2.Strategy. The organisation's business strategy takes into account the current and future IT capabilities; the strategic plans for IT satisfy the current and ongoing needs of the organisation's business strategy.

3.Acquisition. IT acquisitions are made for valid reasons, based on an appropriate and ongoing analysis, with clear and transparent decision making. There is a suitable balance between benefits, opportunities, costs, and risks, in both the short and long term.

4.Performance. IT is fit for purpose in supporting the organisation, providing the services, and the appropriate levels and quality of service necessary to meet current and future business requirements.

5.Conformance. IT complies with all mandatory legislation and regulations. Policies and practices are clearly defined, implemented and enforced.

6.Human Behaviour. IT policies, practices and decisions demonstrate respect for Human Behaviour, including the current and evolving needs of all the 'people in the process'.

The principles express the preferred behaviour to guide decision making. The statement of each principle refers to what should happen, but does not prescribe how, when or by whom the principles would be implemented – as these aspects are dependent on the nature of the organisation implementing the principles.

Directors should ensure that these principles are applied. Directors should govern IT through three main tasks:

- Evaluating the current and future use of IT.
- Directing the preparation and implementation of plans and policies to ensure that the use of IT is aligned with the business objectives.
- Monitoring the conformance to policies, and performance against the plans.

The first initiative in the design of an IT Governance model, which provides a reference for the whole university system, was that undertaken by the Joint Information Systems Committee (JISC) for universities in the United Kingdom. This committee designed a reference model and atoolkit for the self-evaluation of IT Governance maturity, which has become a starting point in helping universities in the process of identifying and defining the IT role within the planning and governance of their organisation. This framework was designed to be highly flexible and able to be used by different types of university: large or small, old or modern and to take into account the different cultures which prevail in the institutional governing of universities.

The JISC reference model for IT Governance is based on 5 perspectives: governance, management, resources, organisation and services. The position of services in the centre of the diagram indicates the orientation of the framework towards a centralisation of services. The services offered by the institutional information systems use the resources and are organised according to the organisational structure and the processes that are implemented therein. The

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

diagram reflects that the services, resources and organisation are the principal components of information systems management. The governance activities are positioned above and overlap with management and are largely concerned with ensuring that management is effective and that the activities are aligned with the institutional priorities.

Using these previous experiences as a starting point, Fernandez developed a University-oriented IT Governance Framework (ITG4U) for the Spanish Association of University Rectors (CRUE in Spanish), published in December 2008, which is based on the JISC model and describes the principles and characteristics of the new international standard ISO 38500. The ITG4U framework is divided into three levels:

- the upper level contains the 6 ISO 38500 principles;
- the middle level includes seventeen 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.

In fact, COBIT that is the most used framework internationally. It is not applied particularly to HEI. Authors in the literature stats that this COBIT is very complex and expensive to implement. The Calde-Moir IT Governance Framework is not specific. It is not the case of JISC. JISC is dedicated to HEI but is not aligned with ISO 38500. This framework was implemented and used as pilot in the UK, but it was abandoned. In other hand, ITG4U follows the ISO 38500 but oriented to the universities in Spain. After study the work presented in "An IT Governance Framework for Universities in Spain" the Tunisian partners involved in the project on the adequacy of framework with the Tunisian context after some adaptions.

3.3.Description of the ITG Group

At University of Sfax the focus is especially on the Faculty of Economics and Management of Sfax. The ITG Group is composed by 17 persons.

Table 1: ITG Group composition

Person/Role	Justification
The dean	The main decision make in the faculty
The CIO	The person that can bridge the gap between business and IT
The board of the faculty composed by 10 persons	Persons elected by the teachers in the faculty. The board take the strategic decision in the faculty.
5 Academic departments directors	Persons elected by the teachers in the correspondents departments. The

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

	departments director take the strategic decision in the level of the department

4. IT Governance best practices

According to GTI4U, the first component in the framework itself is the study of best practices included in the GTI4U framework. This includes three main steps. The first is the set of adaptations that must be made to this global framework to be adopted by organizations. Secondly it is aimed to conduct a self-assessment of the current organizational maturity level. Finally, and as a step to be taken by program partners, it is aimed to assess both the adaptations and the self-assessment.

4.1.Adaptations on IT Governance Framework best practices

The best practices selected for the final formwork are listed in annex A. After a meeting with the ITG committee of the faculty (annex A) and a meeting of the ITG4TU team at Sfax (annex B) the follow conclusions were drawn.

For the principle Responsibility:

- the section Governance Team (GT) responsibility was validated because it is aligned with the vision of the faculty dean.
- the section IT Governance was validated because of the importance of IT Governance in the faculty.
- the sections Chief Information Officer and Committees were validated because of the need to design and monitor IT strategy and governance in the faculty.
- the sections Assigning responsibilities and Monitoring were validated to take into account the responsibilities at all levels in the organization, the committees and the roles pertaining to IT governance

For the principle Strategy:

- the sections Strategic Plan and IT policies were validated because of the need to design IT Strategic Plan and IT policies that are aligned with the faculty overall strategy.
- the sections IT Resources and IT innovation were validated because of the importance of the design of long-term programmes that has the aim of implementing all the IT developments that the faculty needs to meet its users' needs.
- the section IT Culture was validated because it is important to promote a training plan for all the faculty's stakeholders.

For the principle Acquisition:

- the sections IT investment, Acquisitions policy and Suppliers were validated because of the need to design procedures that are clear and accurate for acquisition.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

- the section Suppliers was validated because it is important to establish a good relation with the faculty's suppliers.
- the section IT projects was validated because it is important to have a "portfolio of projects" for all IT the faculty's activities.

For the principle Performance:

- the section Performance was validated because the strategy of the faculty is to promote performance on its activities.
- the sections IT services continuity, Service level agreements and Information availability and quality were validated because the strategy of the faculty is to improve services and information on its activities.

For the principle Conformance:

- the section Catalogues was validated because setting a reference catalogue of the faculty is important.
- the sections Conformance, Audits and Standards were validated because the strategy of the faculty is to improve monitoring and audit on its activities.

For the principle Human behaviour:

- the sections Stakeholders, Resistance to change, People in the process and Workload were validated because the strategy of the faculty is to change the behaviour of its staff to respect governance (Also ITG) rules.

4.2. Self-assessment your organizational ITG maturity level in best practices

The best practices selected for the final framework were discussed after agreeing with the Tunisian partners involved in the project on the adequacy of the best practices with the Tunisian context (Annex C). After a meeting with the ITG committee of the faculty (Annex E) and a 2 meetings of the ITG4TU team at Sfax (Annex D and Annex F) the follow conclusions were drawn.

- For the principle Responsibility, the following best practices already exist:
  - RE1 - The faculty's Governance Team (GT) regularly reviews which IT assets should be monitored centrally and which should be delegated.

- For the principle Strategy, the following best practices already exist:
  - EE8 - The GT plans IT acquisitions in a timely manner and they are included in the next year's budget
  - EE11 - The GT has designed medium-term IT infrastructure renewal plans to prevent this from becoming obsolete while at the same time incorporating emerging technologies

- For the principle Acquisition, the following best practices already exist:
  - AE1 - The GT has set up a procedure to clearly and accurately measure how much the faculty spends on IT on an annual basis.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

- AE5 - The GT has designed and published a policy that provides guidance on different types of acquisitions.
- AE12 - The service level agreements have been set up with all IT suppliers.
- AE13 – The reports are submitted to the GT that monitor the service levels agreed with suppliers.
- AE21 - When calculating the cost of an IT project, these calculations include the costs required to maintain the continuity of an IT-based service.
- AE24 - When making an IT acquisition, the evaluation criteria includes the fact that the proposed equipment should be compatible with existing technologies, comply with standards and be flexible and adaptable for future changes that may occur within the faculty.
- AE25 - The GT has designed and published an IT acquisition approval protocol that details all the people responsible for supplying information and making decisions.
- AE26 - The GT has the ultimate responsibility for IT projects that are going to be implemented (both those that are centralized and delegated) and decide their priorities in such a way that a large portion of resources are channeled to the most important projects
- AE34 - The GT supports initiatives aimed at exchanging experiences and collaborating with other universities.

- For the principle Performance, the following best practices already exist:
  - DE3 - The GT has devoted enough resources to maintain a high level of satisfaction in user groups related to the service with regard to performance of IT-based services

- For the principle Conformance, the following best practices already exist:
  - CE1 - The GT has officially assigned the responsibility of being aware of IT-related legislation to a person or a group of people.
  - CE2 - A reference catalogue has been compiled that contains the IT-related regulations and laws that affect the faculty and is this kept up to date.
  - CE3 - The GT has defined and published a catalogue with all kinds of IT-related policies to guide the rest of the faculty community on how to implement IT on campus.
  - CE4 - The GT has promoted the design and publication of a set of internal procedures and regulations that implement the previously defined IT policies.
  - CE7 - The GT has assigned a person or a group the responsibility of monitoring whether a person or group complies with the regulations.
  - CE10 - Those are in charge of IT services and projects encouraged to take into account IT-related external regulations and laws and policies and internal procedures
  - CE11 - The internal audits have carried out to check whether IT projects and services comply with IT-related external laws and regulations and internal policies and procedures.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

- CE13 - The reports are submitted to the GT with the results of the internal and external audits, which clearly express the level of the faculty's level of compliance with regulations and the risks that these entails.

- For the principle Human behavior, the following best practices already exist:
  - HE2 - There different groupings of stakeholders so as to offer them different treatment when involving them in IT-supported change processes
  - HE6 - A process has been set into motion to raise awareness that leads to reducing people's resistance to an IT-based change process (information, training, etc.)
  - HE7 - IT project planning includes the responsibilities assigned to all participants and activities aimed at measuring the extent to which the involvement of these people contributes to the success of the project and therefore to the change process that it promotes
  - HE1 - IT project planning includes a stage of cross training, training the heads of the faculty service in IT matters and technicians in the faculty process affected by the IT initiative
  - HE13 - The GT knows what human resources are available, what occupational roles there are at all times and what human potential is available to undertake new IT initiatives, avoiding overloads

The result of the self-assessment related to best practices is shown in the following figure 1

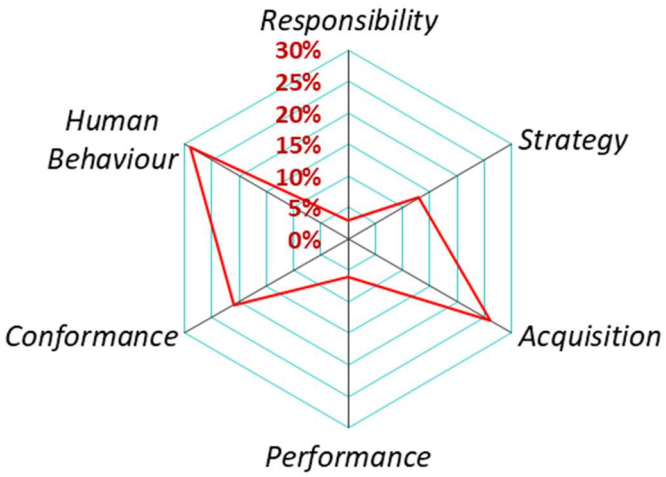

Figure 1 Current situation self-assessment

The current situation of the best practices in our faculty is as follow. One tier of the human behaviour best practices already exist, while the responsibility and the strategy best practices do not exceed 20%. The conformance and the acquisition best practices are equal to 20% and 25% respectively.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

4.3.Review of your organizational ITG maturity level in best practices

This review has been conducted by program partners and will be reported in a separate document.

5. IT Governance maturity model

In the previous step, it was defined the set of best practices aimed to be covered by the final framework, reaching, as a consequence of that coverage, a certain maturity level with regards to best practices achievement. In this step, the second aspect in the framework will be analyzed: maturity level. This second big aspect is developed by means of three different steps. The first is the review of the adaptations on ITG framework maturity model

5.1.Adaptations on IT Governance Framework maturity model

After a meeting with the ITG committee of the faculty (Annex G), a meeting of the ITG4TU team at Sfax (Annex H), and meeting with the coordinators of University of Mannouba, University of Gabes and University of Tunis El Manar (Annex I), the decision to keep the proposed maturity model was taken. This decision was motivated by the adequacy of this model to the Tunisian context.

5.2.Review of the adaptation of the maturity model to your organization

This task is intended to be developed by program countries and will be documented in a separate document.

5.3.Maturity level current situation

After a meeting of the ITG4TU team at Sfax (Annex H), the maturity level current situation is described as follows:

Table 2: Maturity level current situation

	Responsibility (level of maturity: 1)	
Evaluate	1	The directors allocate management responsibilities and some IT governance responsibilities.
Direct	1	The directors monitor IT management but not in a planned way.
Monitor	2	The directors check whether the responsibilities allocated are understood.
	Strategy (level of maturity: 0)	
Evaluate	2	The directors believe sufficient integrated IT developments exist to meet users' needs.
Direct	0	The directors perform IT management without any type of future planning.
Monitor	1	The directors monitor the projects at a superficial level for the purposes of justifying their expenditure.
	Acquisition (level of maturity: 0)	
Evaluate	0	The faculty directors do not determine major IT acquisitions.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

Direct	1	The reports drawn up to support an acquisition purchase usually include more technical and economic data than other criteria used by directors in the decision-making process.
Monitor	1	When calculating the cost of a project, particular consideration is taken of the investment and maintenance costs while other costs (human resources and training initiatives) deriving from the organisational change caused by the IT project are normally excluded.
	Performance (level of maturity: 1)	
Evaluate	1	The directors evaluate the operational proposals put forward by the IT managers, albeit only from a technical and/or economic perspective.
Direct	1	IT assets cover the major operations of current faculty services (though not all those deemed desirable).
Monitor	1	Only the cost of the services is measured as an index for prioritising the allocation of IT assets.
	Conformance (level of maturity: 0)	
Evaluate	0	The faculty directors do not know what legislation exists in relation to IT assets.
Direct	1	Those in charge of IT exhibit the proper professional behaviour with respect to the regulations, even though there are no formal mechanisms for achieving such compliance.
Monitor	2	The directors check that acquaintance with the IT-related laws and regulations is widespread.
	Human Behaviour (level of maturity:1)	
Evaluate	4	The directors are concerned to define communities and encourage maximum involvement in the new process of change facilitated by the IT assets.
Direct	1	Some IT projects fall behind or fail due to lack of implication on the part of the people involved.
Monitor	1	The directors monitor the projects, basing their analysis solely on technical indicators.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

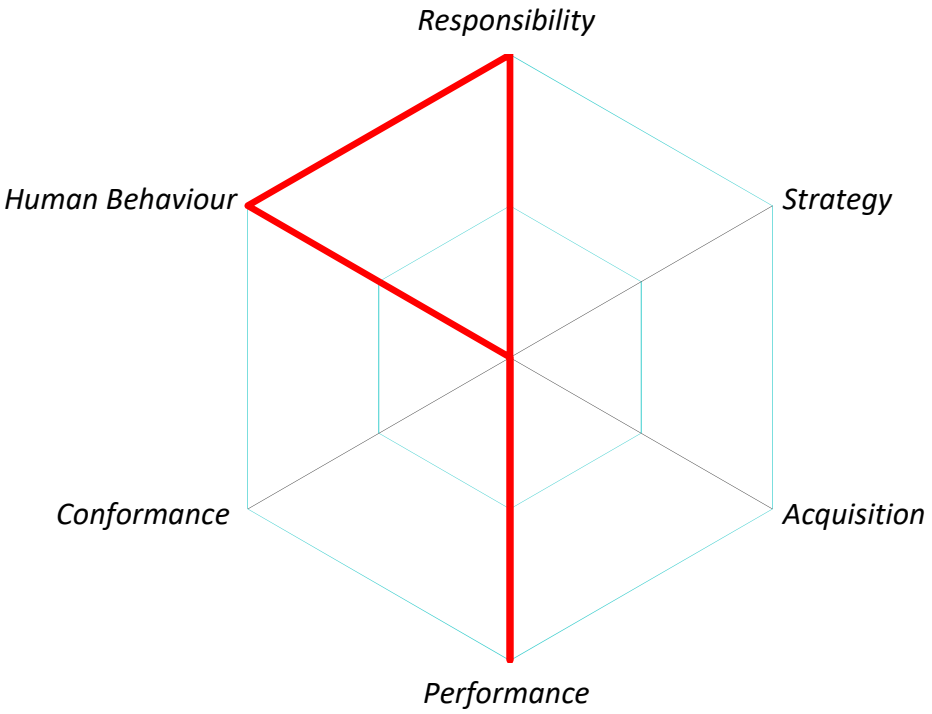

Figure 2 : Current maturity levels

The current situation of the maturity levels in our faculty is as follow. The human behaviour, the responsibility and performance principles maturity levels are equal to 1. For the strategy, the conformance and the acquisition principles maturity levels are equal to 0.

5.4.Maturity goal selection

After a meeting of the ITG4TU team at Sfax (Annex J), Maturity goals were identified regarding 4 principles

For the principle Responsibility:

The faculty can reach the level 2 of maturity so the following list of action was identified by the ITG4TU Team to do so.

- It should be understood that IT governance is the responsibility of the GT
- An IT Committee should be set up.
- The GT should ensure that representatives of all IT users and managers participate in the IT Steering Committee.
- Create the CIO role and include it in GT
- The CIO should take part in preparing strategic plans.

For the principle Strategy:

The faculty can reach the level 2 of maturity so the following list of action was identified by the ITG4TU Team to do so.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

- The Governance Team should design a general strategic plan and include in it the strategic planning of IT.
- The GT should design a set of IT policies, aligned with the faculty 's strategy, that are a reference to guide those who have to make IT-related decisions in the faculty.
- The GT should design medium-term IT infrastructure renewal plans to prevent this from becoming obsolete while at the same time incorporating emerging technologies.
- Design a catalogue of IT policies

For the principle Performance:

The faculty can reach the level 2 of maturity so the following list of action was identified by the ITG4TU Team to do so.

- The GT should devote enough resources to maintain a high level of satisfaction in user groups related to the service with regard to performance of IT-based services.
- The GT should design a policy that reflects the expected performance of faculty processes that are IT-based
- Create a measure of value of catalogue indicator of IT management

For the principle Conformance:

The faculty can reach the level 1 and after that 2 of maturity so the following list of action was identified by the ITG4TU Team to do so.

- The GT should officially assign the responsibility of being aware of IT-related legislation to a person or a group of people.
- A reference catalogue should be compiled that contains the IT-related regulations and laws that affect the faculty, and this should be kept up to date.
- The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards.
- A reference catalogue should be created that contains the IT-related standards applicable or already applied in the faculty and this should be kept up to date.
- The GT should promote the design and publication of a set of internal procedures and regulations that implement the previously defined IT policies.

6. IT Governance framework deployment plan

Once defined the framework, it is needed to draw a deployment plan tailored to organizational circumstances and needs. In this section this plan is presented and justified.

6.1.Framework Wrap-up

The Process of the framework is described as follows:

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

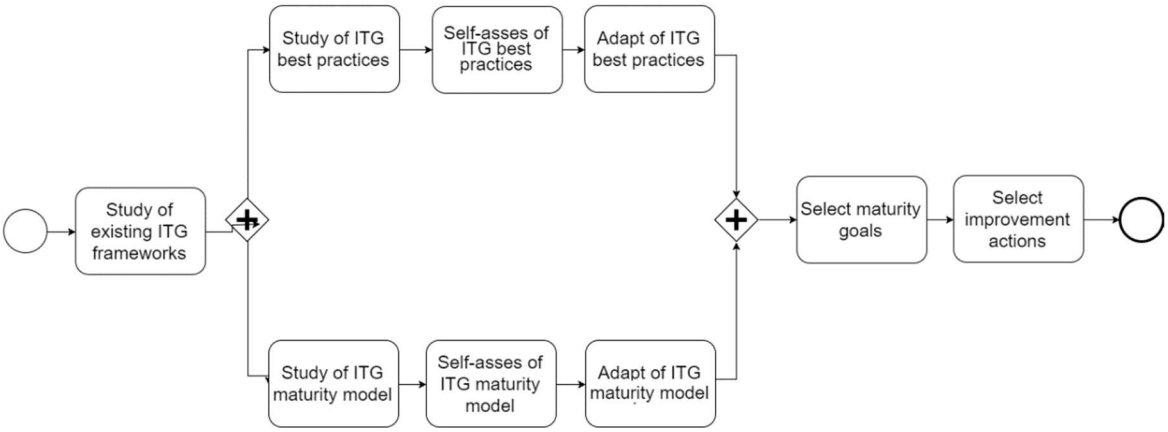

Figure 3 Framework aspects

6.2.Planning

The main deliverables of the planning phase are as follows:

- A project charter which is accepted from all relevant stakeholders,
- A work breakdown structure that includes all tasks needed

6.2.1. Project charter

Table 3: Project chater

Project Charter Name	ITG framework implementation for the University of Sfax		
Project Charter Author	Dr. Ismail Bouassida Dr. Slim Kallel Prof. Ahmed Hadj Kacem		
Project Requestor	ITG Team	Project Manager	Ismail Bouassida
Project Charter Status	Approved		
Proposed Project Start & End Date	Start: December 2017 End: May 2019		
Project Description	IT Governance Framework for the Faculty of Economics and Management of Sfax		
Project Purpose	The development of the IT Governance Framework tailored to Tunisian Universities		
Project Goals & outcomes	A specific governance framework will be designed for the faculty of Economics and Management of Sfax		
Project Scope	The project scope includes the the IT Governance		
Stakeholders	• Students • Staff • Researchers		
Constraints / Risks	• Delays in implementation • Lack in motivation • Lack in faculty support • Lack of implication of managers		

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

	• Lack of expertise in IT-related legislation and IT-related standards • Appointing a CIO
Assumption	• Best practices visits are performed as described • Programme countries institutions present IT Governance frameworks installed • Faculty Government is committed with the development of the IT Governance framework • There are resources available for teaching and attending trainings on IT Governance
Project team	• Dr. Ismail Bouassida • Dr. Slim Kallel • Prof. Ahmed Hadj Kacem

6.2.2. Gantt Diagram

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

Actions		Priority	Responsible		Delivrables	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
Responsibility																							
AR1	It should be understood that IT governance is the responsibility of the GT	MEDIUM	Dean/ITG4TU Team	A meeting of the Dean to explain IT Governance																			
AR2	An IT Strategy Committee should be set up.	HIGH	Dean/ Governance Team/ITG4TU Team	A meeting of the Dean will be organized in order to select the members of the committee	*Minutes of the meeting and liste of members*																		
AR3.2	The GT should ensure that representatives of all IT users and managers participate in the IT Steering Committee.	MEDIUM	Governance Team																				
AR4.1	Create the CIO role and include it in GT	HIGH	Dean/Governance Team/ITG4TU Team	The IT Governance committee defines the role of the CIO	*Minutes of the meeting and name of the CIO*																		
AR4.2	The CIO should take part in preparing strategic plans.	MEDIUM	Dean/Governance Team	Meeting will take place to prepare the strategic plans																			
Strategy																							
AS1	The Governance Team should design a general strategic plan and include in it the strategic planning of IT.	HIGH	Dean/Governance Team	Design the strategic plan	*Strategic Plan*																		
AS2.1	The GT should design a set of IT policies, aligned with the university's strategy, that are a reference to guide those who have to make IT-related decisions in the university.	MEDIUM	Dean/Governance Team	Design IT policies	*IT policies*																		
AS2.2	The GT should design medium-term IT infrastructure renewal plans to prevent this from becoming obsolete while at the same time incorporating emerging technologies.	MEDIUM	Dean/Governance Team	Design renewal plans	*Infrastructure renewal Plan*																		
AS3	Design a catologue of IT policies	HIGH	Dean/Governance Team	Design a catalogue	*Catalog of IT policies*																		
Performance																							
AP1	The GT should devote enough resources to maintain a high level of satisfaction in user groups related to the service with regard to performance of IT-based services.	HIGH	Dean/Governance Team																				
AP2	The GT should design a policy that reflects the expected performance of university processes that are IT-based	HIGH	Dean/Governance Team	Design Performence policies	*Performence policy*																		
AP3	Create a measure of value of catalogue indicator of IT management	HIGH	Dean/Governance Team	Create a measure																			
Conformance																							
AC1	The GT should officially assign the responsibility of being aware of IT-related legislation to a person or a group of people.	HIGH	Dean/Governance Team/ITG4TU Team	Organize a meeting to officially assign the responsibilities	*Minutes of the meeting*																		
AC2	A reference catalogue should be compiled that contains the IT-related regulations and laws that affect the university and this should be kept up to date.	HIGH	Dean/Governance Team	Prepare a reference catalogue	*Reference catalogue*																		
AC3	The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards.	HIGH	Dean/Governance Team/ITG4TU Team	Organize a meeting to officially assign to a person /group of people the responsibility of understanding IT-related standards.	*Minutes of the meeting*																		
AC4	A reference catalogue should be created that contains the IT-related standards applicable or already applied in the university and this should be kept up to date.	HIGH	Dean/Governance Team	Prepare a reference catalogue	*Reference catalogue*																		
AC5	The GT should promote the design and publication of a set of internal procedures and regulations that implement the previously defined IT policies.	HIGH	Dean/Governance Team		*Procedure manual*																		

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

6.2.3. Execution

For the principle Responsibility, the following list of actions was identified.

- It should be understood that IT governance is the responsibility of the GT (M1-M4).
- An IT Committee should be set up (M2).
- The GT should ensure that representatives of all IT users and managers participate in the IT Steering Committee (M4).
- Create the CIO role and include it in GT (M5).
- The CIO should take part in preparing strategic plans (M6-M18).

For the principle Strategy, the following list of actions was identified.

- The Governance Team should design a general strategic plan and include in it the strategic planning of IT (M6, M18).
- The GT should design a set of IT policies, aligned with the faculty 's strategy, that are a reference to guide those who have to make IT-related decisions in the faculty (M12).
- The GT should design medium-term IT infrastructure renewal plans to prevent this from becoming obsolete while at the same time incorporating emerging technologies (M12).
- Design a catalogue of IT policies(M12, M18).

For the principle Performance, the following list of actions was identified.

- The GT should devote enough resources to maintain a high level of satisfaction in user groups related to the service with regard to performance of IT-based services (M6-M18).
- The GT should design a policy that reflects the expected performance of faculty processes that are IT-based (M12).
- Create a measure of value of catalogue indicator of IT management (M6-M18).

For the principle Conformance, the following list of actions was identified.

- The GT should officially assign the responsibility of being aware of IT-related legislation to a person or a group of people (M6).
- A reference catalogue should be compiled that contains the IT-related regulations and laws that affect the faculty, and this should be kept up to date (M12, M18).
- The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards (M6).
- A reference catalogue should be created that contains the IT-related standards applicable or already applied in the faculty and this should be kept up to date (M12, M18).
- The GT should promote the design and publication of a set of internal procedures and regulations that implement the previously defined IT policies (M12-M18).

6.2.4. Monitoring and controlling

To put mechanisms that ensure that performance improvements resulting from the project are sustained, the following table is provided.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

Table 4 : KPI list

Principles	Actions	Evidence	KPI
Responsibility	• It should be understood that IT governance is the responsibility of the GT • An IT Committee should be set up. • The GT should ensure that representatives of all IT users and managers participate in the IT Steering Committee. • Create the CIO role and include it in GT • The CIO should take part in preparing strategic plans.	• List of member of the committee • Formal nomination of the CIO • Meeting minutes for strategic plan preparation	• Number of meeting of the steering committee • Number of dissemination events
Strategy	• The Governance Team should design a general strategic plan and include in it the strategic planning of IT. • The GT should design a set of IT policies, aligned with the faculty's strategy, that are a reference to guide those who have to make IT-related decisions in the faculty. • The GT should design medium-term IT infrastructure renewal plans to prevent this from becoming obsolete while at the same time incorporating emerging technologies.	• Meeting minutes for strategic plan preparation • Meeting minutes for IT policies • Documents of policies and medium-term IT infrastructure renewal plans • Documents of catalogue of IT policies	

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

	• Design a catalogue of IT policies		
Performance	• The GT should devote enough resources to maintain a high level of satisfaction in user groups related to the service with regard to performance of IT-based services. • The GT should design a policy that reflects the expected performance of faculty processes that are IT-based • Create a measure of value of catalogue indicator of IT management	• Meeting minutes for IT policies • Document describing the measure of value of catalogue indicator of IT management	• Number of IT indicators included in the catalogue
Conformance	• The GT should officially assign the responsibility of being aware of IT-related legislation to a person or a group of people. • A reference catalogue should be compiled that contains the IT-related regulations and laws that affect the faculty and this should be kept up to date. • The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards. • A reference catalogue should be created that contains the IT-related standards applicable or already applied in the	• Meeting minutes for IT policies • Document describing IT-related regulations and laws • Meeting minutes for the assignment	• Number of consultation of the reference guide of IT-related laws • Number of consultation of the reference guide of IT-related standards. • Frequency of updates of the catalogues

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

	faculty and this should be kept up to date. • The GT should promote the design and publication of a set of internal procedures and regulations that implement the previously defined IT policies.		
Human behaviour	No actions		
Acquisition	No actions		

6.2.5. Risk management

The risks identified were very similar to risks identified by the other Tunisian partners

6.2.5.1. Risk Identification

The following Risks have been considered for this project:

- Delays in implementation
- Lack in motivation of GT
- Lack in faculty support
- Lack of implication of managers
- Lack of expertise in IT-related legislation and IT-related standards
- Not appointing a CIO
- Lack of commitment of the CIO to prepare strategic plans
- Delay of designing IT policies by the GT
- Not enough resources for user satisfaction
- Not appointing a person responsible of IT legislation
- Lack of alignment the proposed framework and the reality of the faculty
- Lack of politic stability in Tunisia
- Lack of stability of the standards
- Lack of stability in the faculty GT

6.2.5.2. Risk Analysis

In what follows the list of risks is tagged with regards to probability and impact by means of a Likert scale (Low, Medium, High).

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

Table 5: Risks levels

Risks	Impact	Probability	Monitoring	Control
Delays in implementation	high	high	Number of meeting	Plan a new schedule of meeting
Lack in motivation of GT	high	low	Number of Canceled meeting	Meeting to explain the importance of ITG
Lack in faculty support	medium	low	Number of meeting on ITG issue in the faculty	Meeting with the GT to explain the importance of the faculty support
Lack of implication of managers	high	low	Participation in the process of setting up the framework	A Workshop (round table, team work, etc.) will be organized in collaboration with experts and faculty advisors
Lack of expertise in IT-related legislation and IT-related standards	medium	low	Monitoring the meeting a legislation and IT-related standards	A Workshop will be organized in collaboration with external experts in IT-related legislation and IT-related standards and faculty advisors
Appointing a CIO	medium	low	Number of Canceled meeting to appoint CIO	Meeting with the GT to explain the importance of appointing a CIO
Lack of commitment of the CIO to prepare strategic plans	high	low	Schedule of the presentation of the strategic plans not respected	Appointing a new CIO
Delay of designing IT policies by the GT	medium	medium	Schedule of the presentation of IT policies not respected	A Workshop (round table, team work, etc.) will be organized in collaboration with experts and faculty advisors
Not enough resources for user satisfaction	high	low	Monitoring of the resources committed	Formal request to the University for more resources

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

Not appointing a person responsible of IT legislation	high	low	Number of Canceled meeting to appoint responsible of IT legislation	Meeting with the GT to explain the importance of appointing a responsible of IT legislation
Lack of alignment the proposed framework and the reality of the faculty	high	low	Monitoring the evolution of the indicator of the framework deployment	Adapting the existing framework
Lack of politic stability in Tunisia	high	low	Monitoring politic changes	N/A
Lack of stability of the standards	high	low	Monitoring the new standards releases	Adapting the existing framework
Lack of stability in the faculty GT	high	low	GT change	A Workshop (round table, team work, etc.) will be organized in collaboration with experts and ITG4TU Team

6.2.6. Communication and project marketing

For the communication, the IT4TU team will execute different actions depending on the target groups. Here, a communication plan is defined as follows;

- Organizing meetings with the GT of the faculty
- Organizing workshops fully oriented to the students.
- Using the social media to improve the dissemination. (deliverables; Links, posters, leaflets, video sequence, photos)
- Being present in the events organized by the faculty and the university to communicate about the activities and the outcomes of the project.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*

7. Conclusions

The ITG framework of the University of Sfax was made after studying the existing frameworks in literature. The literature survey showed that the most adequate framework for the university of Sfax is ITG4U the IT Governance Framework for Universities in Spain. The framework is composed a set of best practices categorized in six principles: Responsibility, Strategy, Acquisition, Performance, Conformance and Human behavior. The best practices to include in the framework dedicated to the Faculty of Economics and Management of Sfax in university of Sfax was chosen in coordination with the University of Gabes, the University of Manouba and the University of El Manar. The 4 universities adopted the same framework. Once the framework designed, the ITG team of the faculty evaluated the current situation of IT governance. This situation was assessed and validate from the EU partners. The framework contains also maturity Model. This matrix was designed in coordination with the other Tunisian partners. It organizes the maturity model is dived in to levels according to the principals of governance. These levels are divided in to aspects: Evaluate, Direct and Monitor. The Maturity model was chosen in coordination with the University of Gabes, the University of Manouba and the University of El Manar. The 4 universities adopted the same model. The ITG team used this matrix to assess the current maturity of the faculty. The governance team of the Faculty identified the current situation in terms of best practices and maturity levels. For the best practices, the current situation is between 5% and 30% for the 5 principles. For the maturity goals were identified regarding 4 principles. The faculty can reach the level 2 of maturity for responsibility, strategy, and performance principles. The faculty can reach the level 1 and after that 2 of maturity for conformance principle. By using the current best practices and the current maturity levels, the KTI tools, a set of improvement actions were proposed. These actions need to be performed. A Gantt diagram is given to show the planned deployment in the next 18 months.

This project (Project number: 561614-EPP-1-2015-1-ES-EPPKA2-CBHE-JP*) has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*