

# Information Technology Governance for Tunisian Universities (ITG4TU)

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## IT Governance Framework: Tunis El Manar University

*ITG4TU CONSORTIUM*



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## 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 this frameworks, more specifically the one for Tunis El Manar University.

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 lead 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 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 Tunis El Manar University.

## 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 Tunis El Manar University.

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 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**

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 (ITG) is getting attention from the practitioner and research side, given the need to govern IT extending the organization's strategy and objectives into IT. ITG helps to set clear expectations, to gain participation, open communications, establish accountability and provide executive management oversight. Thus, it is important to consider ITG and the alignment with business strategy for HEI. In this article, authors present a Systematic Literature Review (SLR) on ITG in HEIs using a collection of scientific and nonconventional data (grey literature). The motivation that drives this literature review is the further development of an ITG framework for Tunisian universities. This work aims to define the situation of the ITG in other countries. This work 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 ITG in HEIs. Some countries have the support of top level management to introduce ITG in HEIs by adopting regulatory frameworks and common laws. But other countries relay in their strong culture of ITG. The different case studies presented in this review show that there is no consensus on the ITG 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 ITG framework designed for HEI. However, it is also true that there are two mandatory aspects that are necessary to implement in ITG deployments: firstly, establishing a committee structure for IT assets and secondly, enable effective communication between the IT, the business and the stakeholders.



### 3.2. Study international ITG frameworks

In this section explores the work of some international ITG Frameworks<sup>1</sup>.

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 Calder-Moir is worth mentioning. The Calder-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 organizations by:
- assuring stakeholders (including consumers, shareholders, and employees) that, if the standard is followed, they can have confidence in the organization's corporate governance of IT;
- informing and guiding directors in governing the use of IT in their organization; and

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<sup>1</sup> 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"





- 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. **Responsibility.** Individuals and groups within the organization understand and accept their responsibilities with respect 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 organization'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 organization'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 organization, 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 behavior 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 organization 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 a tool kit 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 organization. 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, organization and services. The position of services in the center of the diagram indicates the orientation of the framework towards a centralization of services. The services offered by the institutional information systems use the resources and are organized according to the organizational structure and the processes that are implemented therein. The diagram reflects that the services, resources and organization 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.

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 adaptations.

From the existing frameworks presented above and as a conclusion, we note that different frameworks suffer from many weakness points such:

- General framework and can't be adapted for University of Tunis Al Manar
- Very complex and not easy to be implemented
- Limited and haven't large domain of applications
- Some frameworks are very expensive such CoBit

For these raisons and with the support of european universities ( SRH Berlin, Almeria university, Hogskolen ostfold and University of Balearic Island), we thought to realize our own framework ITG4TU to satisfy all existences demand by our university.



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*Version 2.4*

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### 3.3. Description of the ITG Group

The ITG team is composed of the following members:

<b>President of ITG Comity</b>		<b>President of UTM</b>	<b>M. Fethi Sellaouti</b>
<b>Members</b>	Vice-president	Vice President of UTM	M. Youssef Ben Othman
		Director / Dean (ISI)	Mme Monia Najjar
		Director / Dean (FDSPT)	M. Sami Bostanji
		Director / Dean (FST)	M. Nouredine Amdouni
		Director / Dean (FMT)	M. Mohamed Jouini
		Director / Dean (ENT)	M. Hatem Zenzri
	Financial Officer	Director UTM	M. Mohamed Ali Salah
	HR Officer	Director UTM	Mme Dorra Ammar
	Purchasing Officer	Director UTM	M. Riadh Khemiri
	Judicial Officer	Director UTM	M. Ramzi Thabet / Mme Afifa
	Quality Manager	UTM	Mme Dorsaf Slimane
	Department Chief	Math / Physics	M. Salem Mathlouthi
	Department Chief	IT	Mohamed Nawai
	Head of E-Learning Department	Head of UTM E-Learning Department	Mme Olfa Hamdi
	IT Manager		M. Nouri Hmidi
	CIO Director		M. Mohamed Farrah
	ITG Committee project		M. Samir Moalla
	ITG Committee project		M. Abdellaziz Abdellatif
	ITG Committee project		M. Mohamed Ali Ben Hassine

The ITG team tasks are:

- Select of the CIO
- Design an IT strategy aligned with the institution strategy
- Evaluate, direct and monitor the IT assets



## 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

Best practices of six ITG principles were discussed to establish their adequacy to the ITG framework to be adopted by the Tunisian universities (annex A and B). After the presentation of the framework in the four Tunisian universities (Annex A), the Tunisian partners agreed to adopt the best practices framework (Annex C). A meeting minutes was produced to justify this choice. The framework is composed of various best practices organized in six principles.

#### 4.1.1. Responsibility

##### 4.1.1.1. Governance Team (GT) responsibility

The best practices in this aspect are adequate for the framework of Tunis EL Manar university. In fact, The GT should be involved in the monitoring of the IT assets as well as the direction of the strategic plan of the university in a regular way.

##### 4.1.1.2. IT Governance

The concept of IT governance should be understood and promoted inside the community. A dedicated project and budget should be set up for the ITG assets.

##### 4.1.1.3. Chief Information Officer

The framework must include best practices regarding the position of the CIO. In fact, the GT must assign this responsibility to a specific person and define the CIO profile. The CIO should be part of the decision-making process and must be implicated at a strategic level.

##### 4.1.1.4. Committees

Best practices regarding the constitution of committees are essential in the proposed framework. Strategy and Steering committees should be set up. The first one will help design the university strategy. The later committee is responsible of monitoring the IT projects.

##### 4.1.1.5. Assigning responsibilities

These best practices will be part of the future framework because it will help formalize the ITG inside the institution



#### *4.1.1.6. Monitoring*

The monitoring best practices are validated for the framework because they will help establish balanced score and catalogue of indicators.

### 4.1.2. Strategy

#### *4.1.2.1. Strategic Plan*

The best practices regarding the design of the strategic plan will be included in the framework of the university of Tunis El Manar

#### *4.1.2.2. IT policies*

GT should have some best practices regarding the design of IT policies. A catalogue must be generated.

#### *4.1.2.3. IT Resources*

This section will include best practice regarding the planning of the dedicated resources for the different IT projects

#### *4.1.2.4. IT innovation*

This best practice section will allow GT to promote and seek for IT innovation

#### *4.1.2.5. IT culture*

This section is adequate for the framework because it will spread IT culture among the community.

### 4.1.3. Acquisition

#### *4.1.3.1. IT investment*

These best practices are important to monitor and plan the IT financial resources

#### *4.1.3.2. Acquisitions policy*

This section is validated within the future framework because it will help design the policies regarding the acquisition related to the IT projects.

#### *4.1.3.3. Suppliers*

GT must establish a list of policies regarding the relationship with suppliers.

#### *4.1.3.4. IT projects*

This aspect is adequate for the framework because it will include best practice related to IT portfolio.



#### *4.1.3.5. IT acquisitions and projects priority*

This section is validated inside the framework because it allows GT establish criteria aligned with the strategy of the institution when making IT acquisition.

#### *4.1.3.6. IT projects results*

This section is adequate for the framework because it allows the GT to monitor and evaluate the effect of the IT project.

#### *4.1.3.7. Collaboration and comparison*

Comparing ITG results with other universities have to be done in collaboration with other institutions dealing with ITG aspects

### 4.1.4. Performance

#### *4.1.4.1. Performance*

Performance best practices must be included in the framework.

#### *4.1.4.2. IT services continuity*

This section is validated in the framework because it ensures that GT is informed on the risks and security problems that may affect the continuity of services

#### *4.1.4.3. Information availability and quality*

The quality of the information as well as its availability is an essential aspect to include in the framework in order to ensure an adequate decision-making process from the GT

#### *4.1.4.4. Service level agreements*

This section is adequate for the IT framework because it will help establish level agreements with providers.

### 4.1.5. Conformance

#### *4.1.5.1. Catalogues*

Catalogues of IT-relates regulations and laws are essential in the ITG framework

#### *4.1.5.2. conformance*

GT need to implement some best practices to check the compliance of IT regulations in the university.

#### *4.1.5.3. Audits*

This section is validated inside the framework because it will include best practices regarding the internal and external auditing of IT-projects



#### *4.1.5.4. Standards*

The knowledge regarding the IT standards is important for the deployment of the ITG framework. A responsible must be designated from the GT and a catalogue of IT-related standards must be elaborated.

#### 4.1.6. Human behaviour

##### *4.1.6.1. Stakeholders*

Stakeholders best practices should be integrated in the framework.

##### *4.1.6.2. Resistance to change*

Promoting actions to face the resistance to change that GT may face is essential in the deployment of the future framework for the Tunis El Manar University.

##### *4.1.6.3. People in the process*

These best practices are essential to support the involvement of people in the process of ITG.

##### *4.1.6.4. Workload*

GT must incorporate best practices to measure human resources as well as workload dedicated to the ITG assets

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

The best practices selected for the final framework were discussed. After a meeting with the ITG committee of the institution (Annex E) and 3 meetings of the ITG4TU team at Tunis (Annex D and F) the following conclusions were drawn.

### **Responsibility:**

1. The University's Governance Team (GT) regularly review which IT assets should be monitored centrally and which should be delegated
2. The GT team actively direct the strategic planning of IT in the university
3. The GT is aware of the importance of IT Governance
4. The GT promoted actions (training, communication, etc.) to disseminate in the university community the importance of proper IT governance

### **Strategy:**

1. The GT promoted a short-term and long-term study to determine the resources (financial, human, etc.) required to fulfil the IT strategic objectives.





### **Acquisition:**

1. The GT has designed multi-annual investment programs that guarantee the funding and execution of large-scale IT projects
2. The university optimizes its purchases using good practices (for example, purchasing consortia, discount negotiations, purchase of special offers, etc.)
3. The GT has designed and published a policy that provides guidance on different types of acquisitions
4. Service level agreements have been set up with all IT suppliers
5. Reports are submitted to the GT that monitor the service levels agreed with suppliers
6. The GT has designed and published a policy that reflects its stance in relation to the outsourcing of services
7. The GT has promoted a study on the feasibility of externalizing various services and this study should encompass both the benefits and the risks for the university
8. Every 12 months the GT reviews the performance of outsourced IT services and determine their continuity

### **Performance:**

1. The GT monitors whether the inefficient use of IT affects its performance and communicate the results to users so that they are aware of the need for correct usage
2. Every four months an internal audit is carried out to check the performance of IT services in operation

### **Conformance:**

1. The GT has officially assigned the responsibility of being aware of IT-related legislation to a person or a group of people.
2. A reference catalogue has been compiled that contains the IT-related regulations and laws that affect the university and is this kept up to date.
3. The GT has defined and published a catalogue with all kinds of IT-related policies to guide the rest of the university community on how to implement IT on campus.
4. The GT has promoted the design and publication of a set of internal procedures and regulations that implement the previously defined IT policies.
5. The GT has promoted processes to communicate IT-related internal policies and regulations to facilitate their dissemination in all spheres of the university community.

### **Human Behaviour :**



1. The various stakeholders are identified and is there official documentation on how each one will participate in new IT initiatives (possible stakeholders: heads of university user services, heads of daily operations of each service, heads of IT maintenance, participants in the design and planning of IT projects, second-level managers and executives (heads of service and deputy vice-chancellors), university service users, suppliers, competitors, partners, those in charge of drafting laws and regulations and observers of university processes).
2. There are different groupings of stakeholders so as to offer them different treatment when involving them in IT-supported change processes (for example: grouping them based on their experience of IT use or forming groups according to age and level of responsibility, etc.)
3. The analysis identifies risk factors arising from resistance to change in the people or groups affected and from a lack of commitment in those involved?

Compared to The current situation of existing best practices at University Tunis El Manar are as follows:

The following table (Table 1) summarizes the percentage of achievement for current situation of existing best practices at Tunis El Manar University.

Responsibility Consensus	22 %
Strategy Consensus	28 %
Acquisition Consensus	41 %
Performance Consensus	25 %
Conformance Consensus	39 %
Human Behaviour Consensus	48 %

**Table 1: Best practices current situation for the university of Tunis El Manar**

The results in the previous table are presented as a radar chart in Figure 1.

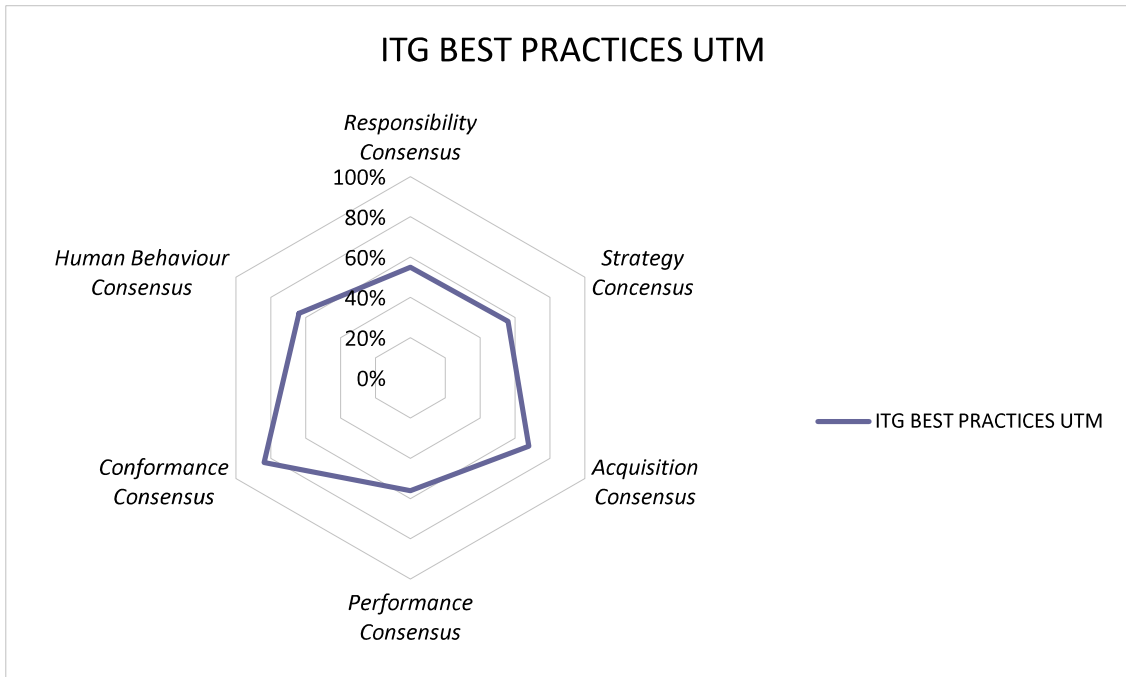


Figure 1 : ITG Assessment at UTM

This graph shows that best practices current situation for the university of Tunis El Manar is good.

#### 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 big 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.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.



## 5.2. Current maturity level

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

Principle		Current Level	Aspects
Responsibility Level: 1	Evaluate	2	<ul style="list-style-type: none"> <li>The directors have allocated responsibilities related to IT management.</li> <li>The directors allocate responsibilities based on their own criteria since they are not aware of any existing models.</li> <li>The directors allocate management responsibilities and some IT governance responsibilities.</li> <li>The directors allocate some IT governance responsibilities but they do not apply any type of IT governance model.</li> <li>The directors take into account if a person that is allocated a responsibility has the appropriate skills.</li> </ul>
	Direct	1	<ul style="list-style-type: none"> <li>The directors monitor IT management but not in a planned way.</li> <li>Most decisions on IT are made by IT managers and these are confirmed by the directors.</li> </ul>
	Monitor	1	<ul style="list-style-type: none"> <li>The directors carry out an informal monitoring of responsibilities related to IT management. The directors check whether the responsibilities allocated are understood.</li> </ul>
Strategy Level: 1	Evaluate	1	<ul style="list-style-type: none"> <li>The directors believe the university has sufficient IT developments, although these are not integrated, to meet users' needs.</li> <li>The directors monitor IT activity but not in a way that is aligned with the university's strategic objectives.</li> <li>The directors analyze some of the risks albeit from an operational and legal compliance perspective but not taking into account business considerations.</li> </ul>
	Direct	1	<ul style="list-style-type: none"> <li>The directors plan investments in IT for the coming year.</li> <li>The lack of involvement on the part of all the directors prevents any global policies relating to IT from being designed.</li> <li>There is very little innovation in IT as an attitude prevails that is acquiescent of technologies that can be applied to the business.</li> </ul>



	Monitor	2	<ul style="list-style-type: none"> <li>The directors monitor the projects at a superficial level for the purposes of justifying their expenditure.</li> <li>The directors measure the results of IT projects from an operational perspective, but not from the university's business standpoint.</li> </ul>
Acquisition Level: 1	Evaluate	1	<ul style="list-style-type: none"> <li>The directors determine acquisition mainly on the basis of criteria aimed at reducing costs.</li> <li>Each director determines acquisitions for their own sphere of influence, there being no single decision at institution level.</li> </ul>
	Direct	1	<ul style="list-style-type: none"> <li>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.</li> <li>The budget for IT acquisition is centralized and completely separate from other items.</li> </ul>
	Monitor	1	<ul style="list-style-type: none"> <li>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 organizational change caused by the IT project are normally excluded.</li> </ul>
Performance Level: 0	Evaluate	1	<ul style="list-style-type: none"> <li>The directors evaluate the operational proposals put forward by the IT managers, albeit only from a technical and/or economic perspective.</li> <li>Key decisions concerning the performance level of the services will be taken by IT managers.</li> </ul>
	Direct	0	<ul style="list-style-type: none"> <li>IT assets cover the major operations of current university services (though not all those deemed desirable).</li> </ul>
	Monitor	1	<ul style="list-style-type: none"> <li>Some other indicators apart from the economic one are measured when prioritizing the allocation of IT assets.</li> </ul>
Conformance Level: 0	Evaluate	0	<ul style="list-style-type: none"> <li>The directors have assigned the responsibility of finding about the legislation concerning IT and ascertaining how it affects the university.</li> </ul>
	Direct	1	<ul style="list-style-type: none"> <li>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.</li> </ul>
	Monitor	0	



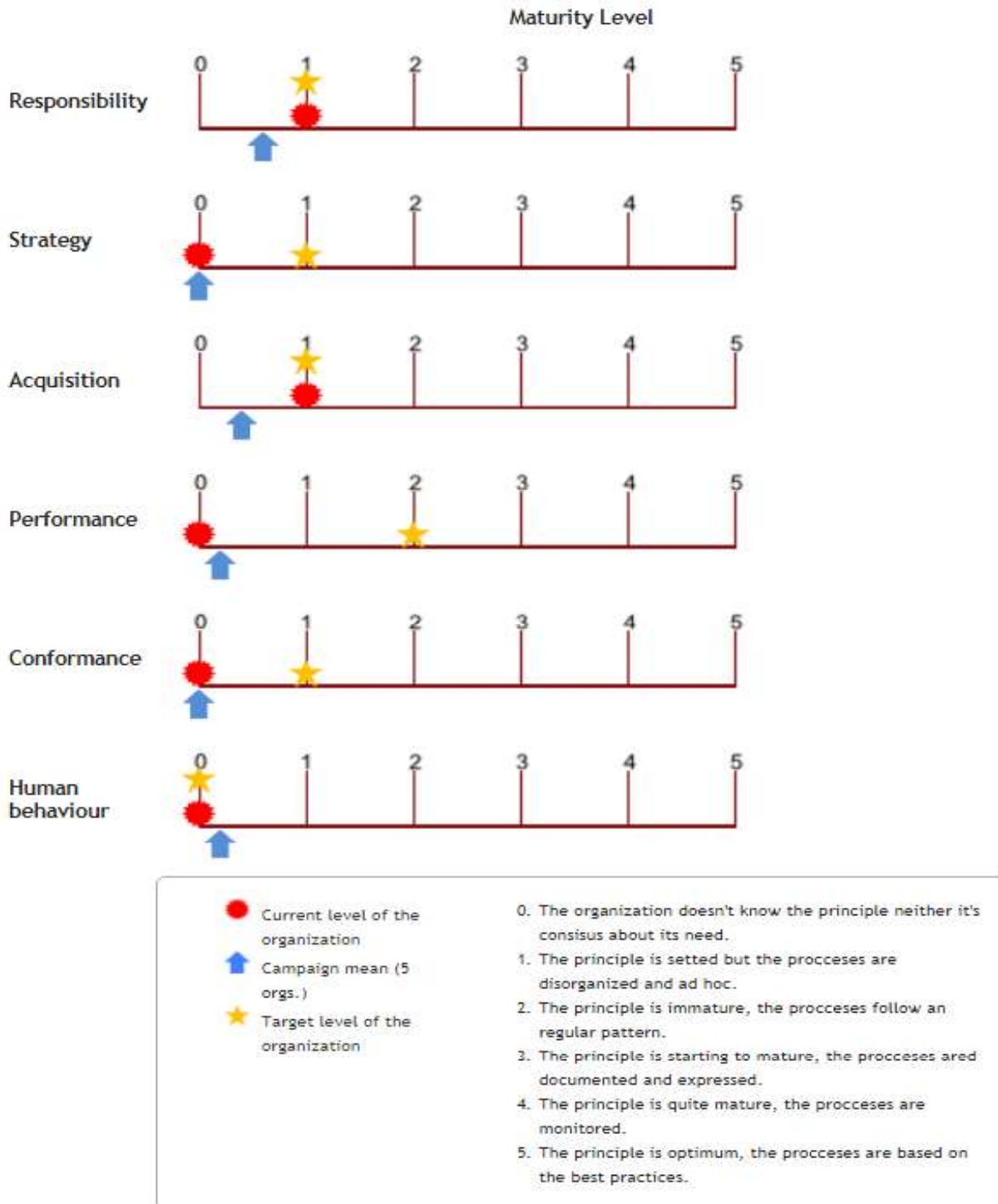
Human Behaviour Level: 0	Evaluate	0	
	Direct	1	<ul style="list-style-type: none"> <li>• Some IT projects fall behind or fail due to lack of implication on the part of the people involved.</li> <li>• The directors are concerned to offer technical training and teach the people participating in IT projects how the services work.</li> </ul>
	Monitor	0	

**Table2: Current maturity level**

### 5.3.Maturity goal selection

After a meeting of the ITG4TU team at University of Tunis El Manar (Annex J), we identified Maturity goal regarding the 5 principles.

The goal maturity level for the university of University of Tunis El Manar is illustrated as follows:



**Figure 2: Maturity Goal**



This figure shows that for the University of Tunis El Manar the goal maturity level concerns only Strategy, Performance and Conformance.

To achieve this maturity level, the following actions will be planned:

Responsibility	<ul style="list-style-type: none"> <li>➤ Initial (1): <ul style="list-style-type: none"> <li>○ An IT Strategic Committee should be set up.</li> <li>○ An IT Steering Committee should be set up.</li> <li>○ It should be understood that IT governance is the responsibility of the GT</li> <li>○ The CIO should take part in preparing strategic plans.</li> <li>○ The Governance Team should direct the strategic planning of IT.</li> <li>○ The GT should ensure that representatives of all IT users and managers participate in the IT Steering Committee.</li> <li>○ The GT should decide which IT assets must be monitored centrally and which ones must be delegated.</li> </ul> </li> </ul>
Strategy	<ul style="list-style-type: none"> <li>➤ Initial (1): <ul style="list-style-type: none"> <li>○ The GT should plan IT acquisitions in a timely manner and include them in the next year's budget.</li> </ul> </li> </ul>
Acquisition	<ul style="list-style-type: none"> <li>➤ Initial (1): <ul style="list-style-type: none"> <li>○ A single, centralized cost center should be set up to carry out the university's main IT investments.</li> <li>○ The GT should design a procedure that allows it to clearly and accurately measure the university's expenditure on IT (at least the centralized costs).</li> <li>○ The GT should design and publish a policy that provides guidance on different types of supplier relationships.</li> <li>○ The GT should design and publish a policy that provides guidance on different types of supplier relationships.</li> </ul> </li> </ul>
Performance	<ul style="list-style-type: none"> <li>➤ Initial (1): <ul style="list-style-type: none"> <li>○ The GT should know 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.</li> </ul> </li> <li>➤ Repetitive/Intuitive(2): <ul style="list-style-type: none"> <li>○ The GT should design a policy that reflects the expected performance of university processes that are IT-based.</li> <li>○ An IT Strategic Plan should be designed that is aligned with the university's overall strategy or the IT strategy should be included in the overall strategy.</li> <li>○ The GT should promote the design of a procedure to analyze the satisfaction of various stakeholders with relation to the university's IT-based services in operation.</li> <li>○ The GT should regularly analyze user requirements.</li> <li>○ The GT should devote enough resources to maintain a high</li> </ul> </li> </ul>





	level of satisfaction in user groups related to the service with regard to performance of IT-based services.
Conformance	<ul style="list-style-type: none"> <li>➤ Initial (1):           <ul style="list-style-type: none"> <li>○ 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.</li> <li>○ The GT should officially assign the responsibility of being aware of IT-related legislation to a person or a group of people.</li> <li>○ 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.</li> <li>○ The GT should regularly review the skills of those in charge of ensuring the compliance of IT regulations in the university.</li> <li>○ The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards.</li> </ul> </li> </ul>

**Table 3: Plan of improvement actions**

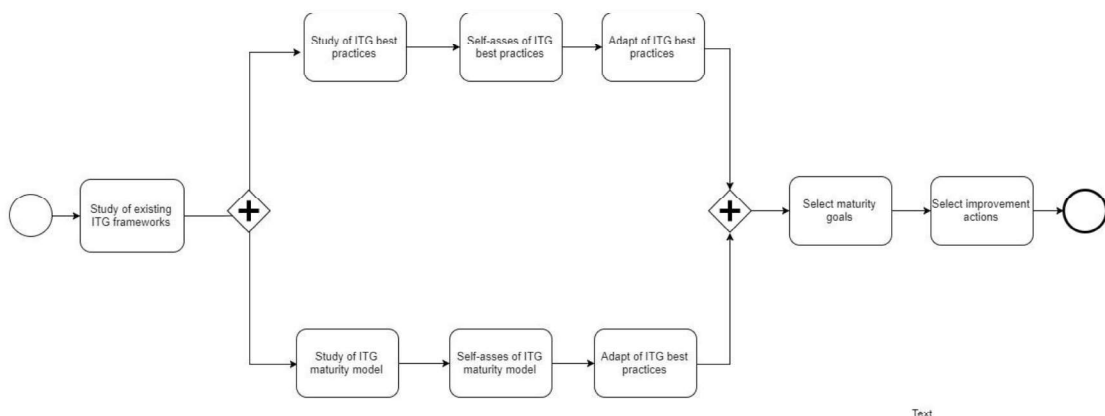
## 6. IT Governance framework deployment plan

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 steps that make up the ITG business process are as follows:

□



**Figure 3: ITG Business Process**



## 6.2.A Process for the implementation

The implementation of the framework follows the Project Management Institute (PMI) project management method. Other likely options include Prince2 or IPMA, for instance, but PMI was chosen because it is well known and it has set project management standards all over the world and is used by most companies (Fanning, 2014).

After the development, the adjusted overall implementation plan was validated by program partners. The implementation plan will be structured in the following six phases.

1. Initiating
2. Planning
3. Execution
4. Monitoring and controlling
5. Risk management
6. Communication and project marketing

These phases will be described in the following lines.

### 6.2.1 Initiating

The first step is to bring the leader(s) of the organization to the realization that the framework will be deployed. The main output from this phase is the case for implementation, which outlines the following aspects:

- Organization current situation (driven by maturity level already calculated)
- Organization maturity objectives
- Scope of the implementation
- General Constraints.
- Resources Committed (Internal / External)

### 6.2.2 Planning

The main deliverables of this phase are as follows:

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

The project charter is the document, which when approved, allows the project manager to set up the project and develop the project management plan together with the newly appointed project team.

Project Overview :			
Project Charter Name	ITG framework implementation for UTM		
Project Charter Author	Samir Moalla, Abdelaziz Abdellatif, Mohamed Ali Ben Hassine		
Creation Date	10/12/2017	Last Revision Date	
Project Requestor	Carlos juiz	Project Manager	Samir Moalla



Project Charter Status	Approved		
Project Sponsor	EU	Date of project Approval	
Proposed Project Start & End Date	Start: January 2018 End: October 2018		

**Project Details:**

Project Description	This project aims to enhance the IT governance inside the Tunisian universities
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 University of Tunis El Manar
Project Scope	The project scope includes the University of Tunis El Manar
Project Deliverables	Strategic committee Steering committee Report on IT-policies Catalogue of IT-related standards Catalogue of IT-related laws Catalogue of IT indicators about operations and management
Benefits	Awareness of ITG among the communities Evaluate, Direct and monitor IT assets
Stakeholders	<ul style="list-style-type: none"> <li>• Students</li> <li>• Faculty</li> <li>• Staff</li> <li>• Researchers</li> <li>• Community members</li> <li>• Socio-economic partners</li> </ul>
Constraints / Risks	<ul style="list-style-type: none"> <li>• Delays in implementation</li> <li>• Lack in motivation</li> <li>• Lack in institutional support at HEIS</li> <li>• Lack of implication of managers</li> <li>• Lack of expertise in IT-related legislation and IT-related standards</li> <li>• Staff to be pointed as CIO</li> </ul>
Assumption	<ul style="list-style-type: none"> <li>• Best practices visits are performed as described</li> <li>• Program countries institutions present IT Governance frameworks installed</li> <li>• University Government is committed with the development of the IT Governance framework</li> <li>• There are resources available for teaching and attending trainings on IT Governance</li> </ul>



Project team	<ul style="list-style-type: none"><li>• Samir Moalla</li><li>• Abdelaziz Abdellatif</li><li>• Mohamed Ali Ben Hassine</li><li>• Nouri Hmidi</li><li>• Mohamed Farrah</li></ul>
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The next step is the definition of the work breakdown structure (WBS), schedules and activities. After the finalization of the WBS, the activities will be supplemented with the needed number of workdays to complete an activity. The accumulation of the estimated workdays follows the bottom up approach.

Gantt diagram:projet ERASMUS- Information Technology Governance for Tunisian Universities (ITG4TU)

Action	Responsible	Priority	Tasks	Deliverables	2010													
					1	2	3	4	5	6	7	8	9	10	11	12		
II : Strategy																		
IA1	Acquisition committee	MEDIUM	The GT should plan IT acquisitions in a timely manner and include them in the next year's budget.	collect the necessary acquisitions	IT acquisition plan													
IA2	Acquisition committee	MEDIUM	A single, centralized cost center should be set up to carry out the university's main IT investments.	Create a centralized cost center	Centralized cost center													
IA3	Acquisition committee	LOW	The GT should design a procedure that allows it to detail and accurately measure the university's expenditure on IT (at least the capitalised cost).	Design a procedure for evaluation of IT expenditure	document describing the calculation rules													
IA4	Acquisition committee	MEDIUM	The GT should design and publish a policy that provides guidance on different types of supplier relationships.	Purchase relationship type for each one	A catalogue of suppliers and suppliers relationships													
IB																		
IC1	Department of Human Resources	MEDIUM	The GT should know 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 duplication of resources.	Identify available human resources and roles in IT activity	A catalogue of human resources													
IC2	IT Strategic committee	HIGH	The GT should design a policy that reflects the expected performance of university processes that are IT-based.	Identify relationship between main university activities and IT	Policy for aligning University performance and IT													
IC3	IT Strategic committee	HIGH	An IT Strategic Plan should be designed that is aligned with the university's overall strategy or the IT strategy should be included in the overall strategy.	check the alignment between the university's strategy and the IT strategy	a comparison between the university's strategy and the IT strategy													
IC4	IT Steering committee	MEDIUM	The GT should promote the design of a procedure to analyse the self-section of various stakeholders with relation to the university's IT-based services in operation.	Conduct a satisfaction study of IT services offered by the university	investigation													
IC5	IT Strategic committee	LOW	The GT should regularly analyse user requirements.	Organize meetings, workshops and discussion sessions	Report on users' requirements													
IC6	Department of Human Resources	MEDIUM	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	Organize meetings, workshops and discussion sessions	Feedback from users													
III : Conformance																		
CA1	IT Strategic committee	MEDIUM	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.	Collect laws and regulations related to ITG	Catalogue of laws and regulations													
CA2	IT Strategic committee	HIGH	The GT should officially assign the responsibility of being aware of IT-related legislation to a person or a group of people.	Establish a list of candidates and select one														
CA3	IT Steering committee	MEDIUM	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.	Create a catalogue of ITG standards	ITG standards catalogue													
CA4	IT Strategic committee	MEDIUM	The GT should regularly review the skills of those in charge of ensuring the compliance of IT regulations in the university.	Create a planning for reviews														
CA5	IT Steering committee	MEDIUM	The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards	Organize a meeting														



### 6.2.3 Execution

In this project phase, the actual implementation of the framework and its factors and metrics is conducted and the different steps towards the implementation will be discussed.

Principles	Actions	Start	End	Status
<b>Responsibility</b>	An IT Strategic Committee and an IT Steering Committee should be set up.	01/2018	02/2018	Realized
	It should be understood that IT governance is the responsibility of the GT	03/2018	12/2018	Ongoing
	The CIO should take part in preparing strategic plans.	03/2018	12/2018	Ongoing
	The GT should direct the strategic planning of IT.	03/2018	12/2018	Ongoing
	The GT should ensure that representatives of all IT users and managers participate in the IT Steering Committee	03/2018	12/2018	Ongoing
	The GT should decide which IT assets must be monitored centrally and which ones must be delegated	03/2018	12/2018	Ongoing
<b>Strategy</b>	The GT should plan IT acquisitions in a timely manner and include them in the next year's budget.	05/2018	12/2018	Ongoing
<b>Acquisition</b>	A single, centralized cost center should be set up to carry out the university's main IT investments.	05/2018	07/2018	
	The GT should design a procedure that allows IT to clearly and accurately measure the university's expenditure on IT (at least the centralized costs).	09/2018	12/2018	Ongoing
	The GT should design and publish a policy that provides guidance on different types of supplier relationships.	09/2018	12/2018	Ongoing
<b>Performance</b>	The GT should know 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	06/2019	07/2019	Ongoing
	The GT should design a policy that reflects the expected performance of university processes that are IT-based.	07/2018	10/2018	Ongoing
	An IT Strategic Plan should be designed that is aligned with the university's overall strategy or the IT strategy should be included in the overall strategy	09/2018	10/2018	Ongoing



	The GT should promote the design of a procedure to analyze the satisfaction of various stakeholders with relation to the university's IT-based services in operation.	10/2018	12/2018	Ongoing
	The GT should regularly analyze user requirements	06/2018	12/2018	Ongoing
	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	06/2018	12/2018	Ongoing
<b>Conformance</b>	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.	10/2018	01/2019	Ongoing
	The GT should officially assign the responsibility of being aware of IT-related legislation to a person or a group of people.	09/2018	10/2018	Ongoing
	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.	12/2018	02/2019	Ongoing
	The GT should regularly review the skills of those in charge of ensuring the compliance of IT regulations in the university.	11/2018	02/2019	Ongoing
	The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards	09/2018	10/2018	Ongoing

#### 6.2.4 Monitoring and controlling

The goal of this phase is to put mechanisms in place to ensure that performance improvements resulting from the project are sustained over time and ultimately lead to opportunities for additional performance gains. The main deliverable of this phase is a defined and implemented controlling system for the aspects included in the framework that allows a regularly assessment of the success of the ITG framework.

Principles	Actions	Evidence	KPI
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>An IT Strategic Committee and an IT Steering Committee should be set up.</li> <li>It should be understood that IT</li> </ul>	<ul style="list-style-type: none"> <li>List of member of the committee</li> <li>Nomination of</li> </ul>	<ul style="list-style-type: none"> <li>Number of meetings</li> </ul>



	<p>governance is the responsibility of the GT</p> <ul style="list-style-type: none"> <li>• The CIO should take part in preparing strategic plans.</li> <li>• The GT should direct the strategic planning of IT.</li> <li>• The GT should ensure that representatives of all IT users and managers participate in the IT Steering Committee</li> <li>• The GT should decide which IT assets must be monitored centrally and which ones must be delegated</li> </ul>	<p>CIO</p> <ul style="list-style-type: none"> <li>• Meeting minutes for strategic plan preparation</li> </ul>	<ul style="list-style-type: none"> <li>• Number of representatives of users and managers that participate in the IT steering committee</li> </ul>
<b>Strategy</b>	The GT should plan IT acquisitions in a timely manner and include them in the next year's budget.	<ul style="list-style-type: none"> <li>• IT acquisition plan</li> </ul>	
<b>Acquisition</b>	<ul style="list-style-type: none"> <li>• A single, centralized cost center should be set up to carry out the university's main IT investments.</li> <li>• The GT should design a procedure that allows IT to clearly and accurately measure the university's expenditure on IT (at least the centralized costs).</li> <li>• The GT should design and publish a policy that provides guidance on different types of supplier relationships.</li> </ul>	<ul style="list-style-type: none"> <li>• Centralized cost center</li> <li>• document describing the calculation rules</li> <li>• A catalogue of suppliers and suppliers relationships</li> </ul>	





<p><b>Performance</b></p>	<ul style="list-style-type: none"> <li>• The GT should know 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</li> <li>• The GT should design a policy that reflects the expected performance of university processes that are IT-based.</li> <li>• An IT Strategic Plan should be designed that is aligned with the university's overall strategy or the IT strategy should be included in the overall strategy</li> <li>• The GT should promote the design of a procedure to analyze the satisfaction of various stakeholders with relation to the university's IT-based services in operation.</li> <li>• The GT should regularly analyze user requirements</li> <li>• 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</li> </ul>	<ul style="list-style-type: none"> <li>• A catalogue of human resources</li> <li>• Policy for aligning University performance and IT</li> <li>• a comparison between the university's strategy and the IT strategy</li> <li>• Investigation</li> <li>• Report on users requirements</li> <li>• Feedback from users</li> </ul>	<ul style="list-style-type: none"> <li>• Number of IT indicators included in the catalogue</li> </ul>
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<p><b>Conformance</b></p>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• The GT should officially assign the responsibility of being aware of IT-related legislation to a person or a group of people.</li> <li>• 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.</li> <li>• The GT should regularly review the skills of those in charge of ensuring the compliance of IT regulations in the university.</li> <li>• The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards</li> </ul>	<ul style="list-style-type: none"> <li>• Catalogue of laws and regulations</li> <li>• ITG standards catalogue</li> </ul>	<ul style="list-style-type: none"> <li>• Number of consultation of the reference guide of IT related laws</li> <li>• Number of consultation of the reference guide of IT related standards.</li> </ul>
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Table 4: List of KPI

### 6.2.5 Risk management

The purpose of this part is to define and formalize the risk management procedures to be followed during and after the implementation of the framework. The aim of risk management is to minimize the impact of several types of risks on the project, by detecting and addressing potential risks before significant, negative consequences occur. In what follows, main risk management aspects will be developed in the context of this project.

#### RISK IDENTIFICATION:

The following Risks have been considered for this project:

- Delays in implementation
- Lack in motivation
- Lack in institutional support at HEIS
- Lack of implication of managers
- Lack of expertise in IT-related legislation and IT-related standards
- Staff to be pointed as CIO



**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).

<b>Risks</b>	<b>Impact</b>	<b>Probability</b>	<b>Monitoring</b>	<b>Control</b>
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

**RISK PRIORITIZATION**

The next step in the risk management is the prioritization of the risks and the selection of the set of risks to be managed.

<b>Risks</b>	<b>Priority</b>
Delays in implementation	5
Lack in motivation	1
Lack in institutional support at HEIS	6



Lack of implication of managers	3
Lack of expertise in IT-related legislation and IT-related standards	4
Staff to be pointed as CIO	2

### RISK MONITORING , MANAGEMENT AND CONTROL

For each risk, we need to provide a Risk information sheet including Risk, Mitigation, Monitoring and Contingency Plan for each.

### 6.3 Communication and project marketing

In this matter, it is needed to develop two kinds of deliverables:

- A communication plan, that defines the intensity of communication as well as target groups and communication needs. This includes the identification of these aspects:
  - set up of communication infrastructure,
  - identification of target groups,
  - determination of communication needs,
  - development of an integrated communication planning (communication channels, frequency and intensity, feedback channels, etc.) aligned to the project phases; this also includes project marketing activities and material,
  - identification and formulation of key messages and testing of the messages via selected employees.

For the communication, the IT committee will execute different actions depending on the target groups; the committee of the university, the advisor committee, administration officers' students and industrials. Here, a communication plan will be defined as follows:

- Organizing a first info day oriented to the university committee and all the director of Tunis el Manar University institutions.  
**Materials:** conference room of the university, stands and posters about the ITG4TU project  
**Deliverables:** A leaflets/catalogues, statistics and best practices of the European partners.
- A meeting of the advisor committee members and the entire administrative officer; financial service, technical staff, acquisition service, human resource responsible.  
**Materials:** Meeting room of the institution, stands and posters about the ITG4TU project  
**Deliverables:** A leaflets/catalogues, statistics and best practices of the European partners, actual ITG situation compared to European partners, objectives of the ITG project.



- Organizing a second info day fully oriented to the students.
- Organizing an open day to industrials and decision makers.

**Materials:** Meeting room of the institution, stands and posters about the ITG4TU project,

**Deliverables:** leaflets/catalogues

- Contacting the media with a mixed group of university advisors, administrator officers and students for attendance in radio and/or TV emission.

**Deliverables:** leaflets/catalogues, Video sequence

- Using the social media to improve the dissemination.

**Deliverables:** Links, posters, leaflets, video sequence, photos

## 7. Conclusions

The ITG framework of the University of Tunis El Manar was designed after studying the existing frameworks in other countries. The literature review showed that the most adequate Framework for the university of Tunis El Manar is the Spanish framework. The framework is composed of various best practices organized in six principles: Responsibility, strategy, acquisition, performance, conformance and human behaviour.

The best practices to include in the future framework were established in coordination with the university of Sfax, Manouba and Gabes. The Tunisian partners adopted the same framework.

Once the framework designed, the ITG team of the University of Tunis El Manar evaluated the current situation of IT governance. This situation was later assessed and validate from the EU partners.

Another aspect of the framework is the maturity level matrix. This matrix was designed in coordination with the other Tunisian partners. It organizes the maturity levels in different aspects: Evaluate, direct and monitor. The ITG team used this matrix to calculate the current maturity level of ITG regarding the six principles of governance. By using the existing best practice as well as the current maturity level, the KTI tools, a set of improvement actions were proposed. These actions were planned to be deployed in the future according to a Gantt diagram.