Information Technology Governance for Tunisian Universities (ITG4TU)

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

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IT Governance Framework: Université de Gabès

ITG4TU CONSORTIUM

AMENDMENT HISTORY

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1	1	28 Sept 2017	Beatriz Gómez	Editing Modification
2	0	25 Nov 2017	Mehdi Khouja	New Version
2	1	01 Dec 2017	Lotfi Tlig	GANTT diagram
2	2	05 Dec 2017	Ouways Kabaou	Minor changes
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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 framework, more specifically the one for University of Gabes.

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 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

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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 Université de Gabès.

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 Université de Gabès.

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,

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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 organisation'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 non-conventional 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[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.

[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"

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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.Responsibility. Individuals and groups within the organisation 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 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.

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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 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;

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- 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 adaptions.

3.3.Description of the ITG Group

The ITG team is composed of the following members

- Sami Guedaiem: Director of ISIMG, member of ISIMG advisory Board
- Mehdi Khouja: Director of Studies and career center, member of ISIMG advisory Board
- Mohamed Ouwais Kabaou: ITG committee member
- Lotfi Tlig: ITG committee member
- Ali Mansour: IT manager
- Ilyes Triki: Financial Offcier
- Chiraz Jabr: Purchasing manager
- Amara Amamra: General secretary / Chief of staff
- Olfa Jemai: Head of Computer science and multimedia department, member of ISIMG advisory Board
- Salwa Said: Head of Web and multimedia department, member of ISIMG advisory Board
- Sofiene Hachicha: Head of industrial computer science department, member of ISIMG advisory Board
- Abir Hdirich: Head of Electronic and Telecommunications department, member of ISIMG advisory Board
- Sofiene BenMbarek: Head of e-learning department, member of ISIMG advisory Board IT Governance best practices

The ITG team tasks are:

- Select of the CIO
- Promote the ITG in the university
- 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.

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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 organised 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 the university of Gabes. 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 should 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 should 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 should be included in the framework of the university of Gabes

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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 should 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 Consensus

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.

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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.

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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 my face is essential in the deployment of the future framework for the university of Gabes

4.1.6.3. People in the process

These best practices are essential to support the involved 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 2 meetings of the ITG4TU team at Gabes (Annex D and F) the following conclusions were drawn.

The current situation of existing best practices at the university of Gabes are as follows:

Responsibility: 4 existing best practices

1. The GT is aware of the importance of IT Governance
2. IT Governance is the responsibility of the GT and not of IT experts and professionals
3. The GT have a clear vision of the responsibility of third parties in relation to the university's IT objectives
4. The university have an IT balanced scorecard

Strategy: 1 existing best practices

1. The GT plan IT acquisitions in a timely manner and are they included in the next Year’s budget

Acquisition: 8 existing best practices

1. The GT has designed and published a policy that provides guidance on different types of acquisitions
2. Service level agreements have been set up with all IT suppliers
3. Reports are submitted to the GT that monitor the service levels agreed with suppliers
4. The cost of an IT project includes the costs required to maintain the continuity of an IT-based service

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5. 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 university
6. The GT has designed and published an IT acquisition approval protocol that details all the people responsible for supplying information and making decisions
7. The GT has the ultimate responsibility for IT projects that are going to be implemented (both those that are centralised and delegated) and decide their priorities in such a way that a large portion of resources are channelled to the most important projects
8. The GT supports initiatives aimed at exchanging experiences and collaborating with other universities

Performance: 2 existing best practices

1. 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
2. The GT regularly analyses the requirements of users (for example, employees and students)

Conformance: 5 existing best practices

1. Training processes are carried out related to the compliance of internal procedures with external laws and policies
2. Those in charge of IT services and projects are encouraged to take into account IT-related external regulations and laws and policies and internal procedures
3. Internal audits are carried out to check whether IT projects and services comply with IT-related external laws and regulations and internal policies and procedure
4. External audits are carried out to check whether IT projects and services comply with IT-related external laws and regulations and internal policies and procedures
5. Reports are submitted to the GT with the results of the internal and external audits, which clearly express the level of the university's level of compliance with regulations and the risks that this entail

Human Behaviour: 3 existing best practices

1. IT project planning includes a stage to train stakeholders on the change that is going to take place in the university service affected by the IT initiative
2. There is a procedure established to measure the level of skills (especially those related to IT) of individuals in different interest groups
3. 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

These best practices are only part of all the framework proposes. The figure and table below show the percentage of best practices satisfied by the university of Gabes.

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Responsibility Consensus	14%
Strategy Concensus	6%
Acquisition Consensus	24%
Performance Consensus	13%
Conformance Consensus	26%
Human Behaviour Consensus	29%

Table 1: Best practices current situation for the university of Gabes

Figure 1 shows the percentage of best practices already implemented at the university of Gabes.

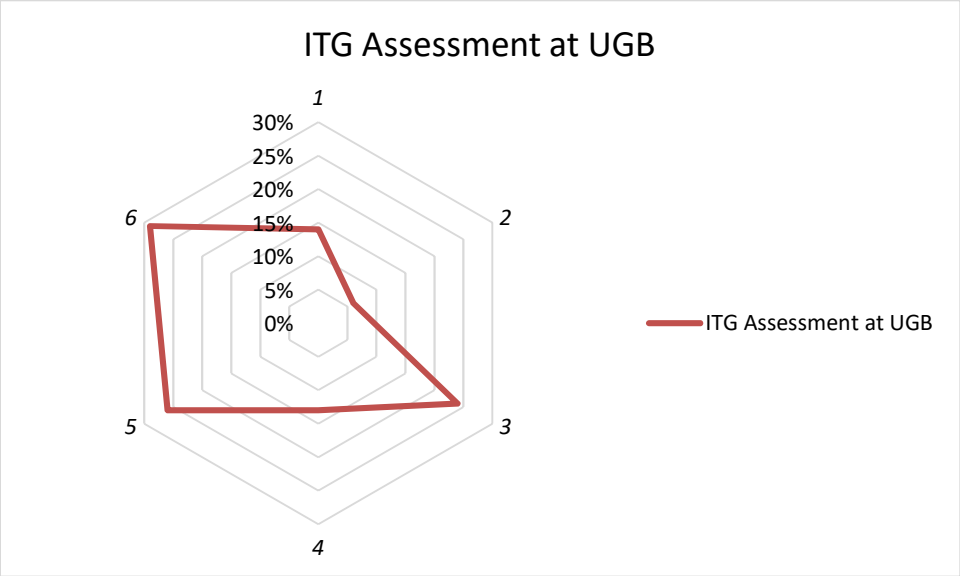

Figure 1: : ITG Assessment at UGB

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

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5.1.Adaptations on IT Governance Framework maturity model

After a meeting with the ITG comity of the institution (Annex C), a meeting of the ITG4TU team at Gabes (Annex H), and meeting with the coordinators of university f Mannouba, university of Sfax 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 Gabes (Annex H), the maturity level current situation is described as follows:

Principle		Current Level	Aspects
Responsibility 1	Evaluate	1	The directors have allocated responsibilities related to IT management.
	Direct	1	The directors monitor IT management but not in a planned way. Most decisions on IT are made by IT managers and these are confirmed by the directors.
	Monitor	3	The directors carry out an informal monitoring of responsibilities related to IT management. The directors check whether the responsibilities allocated are understood. The directors check whether the person who is allocated the responsibility understands it. The directors do not check whether all the responsibilities related to IT governance are allocated.
Strategy 1	Evaluate	1	The directors monitor IT activity but not in a way that is aligned with the university's strategic objectives.
	Direct	1	The directors plan investments in IT for the coming year. There is very little innovation in IT as an attitude prevails that is acquiescent of technologies that can be applied to the business.
	Monitor	3	The directors monitor the projects at a superficial level for the purposes of justifying their expenditure.
Acquisition 0	Evaluate	1	The directors determine acquisition mainly on the basis of criteria aimed at reducing costs. Each director determines acquisitions for their own sphere of influence, there being no single decision at institution level.

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	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. The budget for IT acquisition is centralised and completely separate from other items.
	Monitor	0	The directors know what IT assets the university currently has available.
Performance 0	Evaluate	1	The directors evaluate the operational proposals put forward by the IT managers, albeit only from a technical and/or economic perspective. Key decisions concerning the performance level of the services will be taken by IT managers. The directors analyse and find out about the needs of IT service users.
	Direct	0	IT managers normally have an excessive workload.
	Monitor	1	Only the cost of the services is measured as an index for prioritising the allocation of IT assets.
Conformance 0	Evaluate	0	No aspects are covered
	Direct	0	No aspects are covered
	Monitor	0	No aspects are covered
Human Behaviour 1	Evaluate	2	The directors are concerned to determine which people should be involved and those who are affected by IT activities.
	Direct	1	Some IT projects fall behind or fail due to lack of implication on the part of the people involved. The directors are concerned to offer technical training and teach the people participating in IT projects how the services work.
	Monitor	1	The directors monitor the projects, basing their analysis solely on technical indicators.

Table 2: Current maturity level

5.4.Maturity goal selection

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

The goal maturity level for the university of Gabes is illustrated in Figure 2 with a comparison to the current situation.

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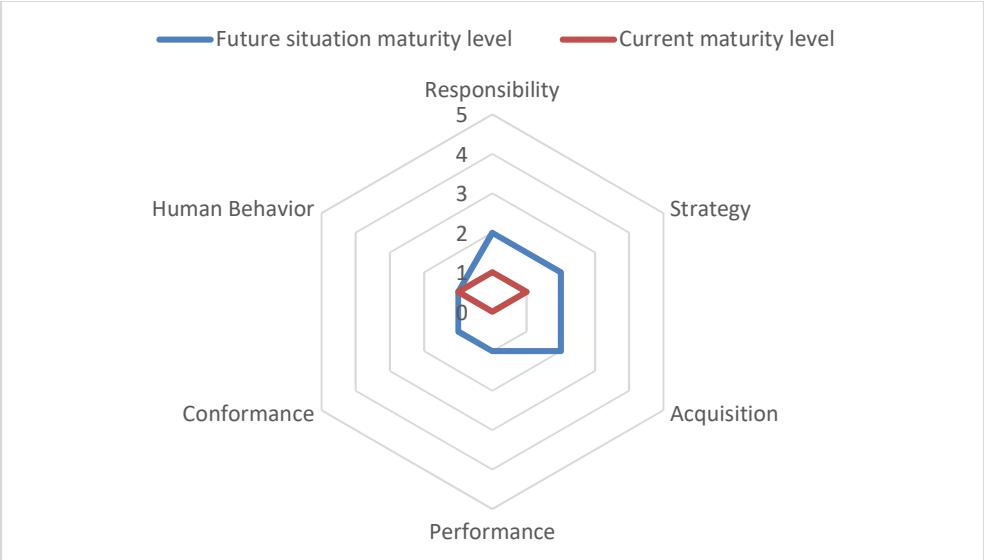

Figure 2: Future situation maturity level

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

Responsibility	• An ITG Committee (An IT Strategic Committee and an IT Steering Committee) should be set up. • The importance of IT Governance in the GT should be promoted. • Create a role of CIO
Strategy	• The Governance Team should direct the strategic planning of IT. • The GT should design a long-term programme that has the aim of implementing all the IT developments that the university needs to meet its users' needs. • 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.
Acquisition	• Define the relationship with IT providers
Performance	• Create and measure catalogue of IT indicators about operations and management
Conformance	• The GT should officially assign the responsibility of being aware of IT-related legislation and the responsibility of understanding IT-related standards 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 university, and this should be kept up to date. • 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.
Human Behaviour	• No actions have to be taken

Table 3: Plan of improvement actions

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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

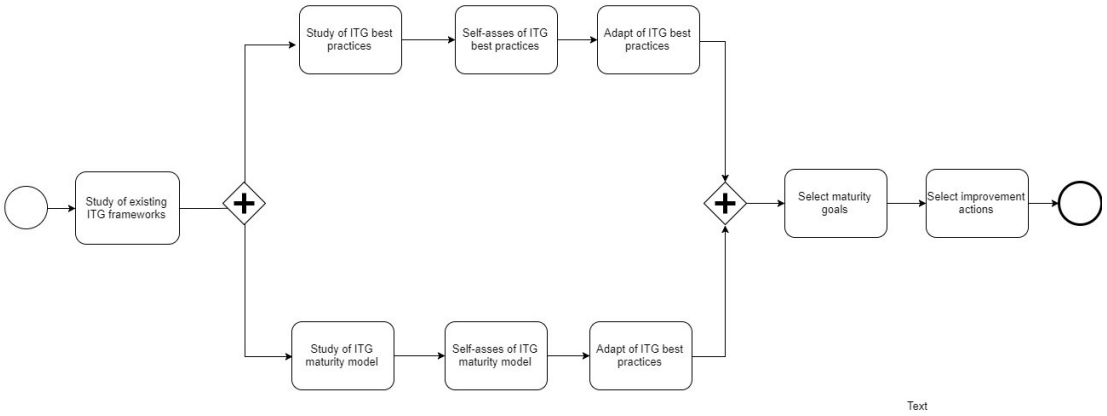

Figure 1: ITG Business Process

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.

6.4.1. 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)

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- Organization maturity objectives
- Scope of the implementation
- General Constraints.
- Resources Committed (Internal / External)

6.4.2. 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 Charter: ITG framework implementation

Project Overview:			
Project Charter Name	ITG framework implementation for the University of Gabes		
Project Charter Author	Mehdi Khouja, Ouwais Kabaou & Lotfi Tlig		
Creation Date	01/12/2017	Last Revision Date	
Project Requestor	Carlos juiz	Project Manager	Mehdi Khouja
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 Gabes
Project Scope	The project scope includes the
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	• Students • Faculty • Staff • Researchers • Community members

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	• Socio-economic partners
Constraints / Risks	• 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
Assumption	• Best practices visits are performed as described • Programme countries institutions present IT Governance frameworks installed • University 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	• Mehdi Khouja • Mohamed Ouwais Kabaou • Lotfi Tlig • Sami Guedaim • Ali Mansour

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.

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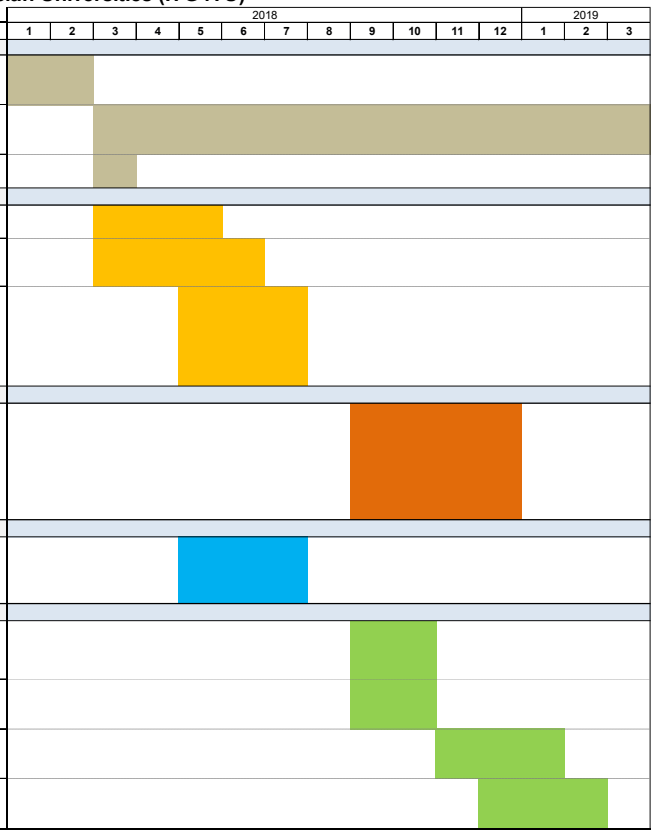
Gantt diagram:projet ERASMUS- Information Technology Governance for Tunisian Universities (ITG4TU)

Actions		Priority	Responsible	Tasks	Delivrables
I	**Responsibility**				
AR1	An IT Strategic Committee and an IT Steering Committee should be set up.	HIGH	Advisor/Scientific committee	A meeting of the advisor (scientfic) committee will be organized in order to select the members of the both committees.	IT Steering Committee members and roles (minutes meeting)
AR2	The importance of IT Governance in the GT should be promoted.	HIGH	IT committees (Strategic and Steering)	During this year many ITG info days will be planned (1 day/trimester)	List of dissemination actions taken to promote ITG
AR3	Create a role of CIO	MEDIUM	ITG committee	The ITG committee fixes, in details, the role of the CIO.	Formal nomination of the CIO (minutes meeting)
II	Strategy				
AS1	The Governance Team should direct the strategic planning of IT.	HIGH	IT Strategic committee	design the strategic plan	Strategic Plan of the university with IT strategies included
AS2	The GT should design a long-term programme that has the aim of implementing all the IT developments that the university needs to meet its users' needs.	MEDIUM	IT committee	Many meetings will be palnned (1/month) and specify the user needs	IT infrastructure renewal plan
AS3	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	IT Strategic committee in collaboration with the committe of university	Organize meetings, workshops and invit experts to design all the IT policies	Catalogue of Policies
III	Acquisition				
AA1	Define the relationship with IT providers	HIGH	University (Fainacial Sercvice)/IT committe (Technical satff, acquisition officer)	Define the needs (materials, caracteristics, etc.) and contact the providers,	Catalogue of Policy providers
IV	Performance				
AP1	Create and measure catalogue of IT indicators about operations and management	MEDIUM	IT Strategic committee	A Workshp (round table, team work, etc.) will be organized in collaboration with experts and university advisors to design the catalogue of IT indicators	Catalogue of IT indicators
V	Conformance				
AC1	The GT should officially assign the responsibility of being aware of IT-related legislation and the responsibility of understanding IT-related standards to a person or a group of people.	HIGH	IT committees (Strategic and Steering)	Organize a meeting to understand the realted legislation and officially assign the responsibilities	Names of the person/people who is responsible of conformance all the laws related with IT
AC2	The GT should officially assign to a person or group of people the responsibility of understanding IT-related standards.	HIGH	IT committees (Strategic and Steering)	Organize a meeting to officially assign to a person /group of people the responsibility of understanding IT-related standards.	Names of the person/people who is responsible of IT-related standards
AC3	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	IT committees (Strategic and Steering)	Prepare a reference catalogue about the IT-related regulations and laws. This is should be kept up to date.	A reference catalogue about the IT-related regulations and laws (List of laws the university should satisfice)
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	IT committees (Strategic and Steering)	Prepare a reference catalogue about theT-related standards. This is should be kept up to date.	A reference catalogue about the IT-related standards (List of IT standards that the university should implement)



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6.4.3. 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
Responsibility	An ITG Committee should be set up. (IT Strategic Committee and an IT Steering Committee)	January 2018	February 2018
	The importance of IT Governance in the GT should be promoted.	March 2018	March 2019
	Create a role of CIO	March 2018	March 2018
Strategy	The Governance Team should direct the strategic planning of IT.	March 2018	May 2018
	The GT should design a long-term programme that has the aim of implementing all the IT developments that the university needs to meet its users' needs.	March 2018	June 2018
	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.	May 2018	July 2018
Acquisition	Define the relationship with IT providers	September 2018	December 2018
Performance	Create and measure catalogue of IT indicators about operations and management	May 2018	July 2018
Conformance	The GT should officially assign the responsibility of being aware of IT-related legislation and the responsibility of understanding IT-related standards to a person or a group of people.	September 2018	October 2018
	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.	November 2018	January 2019
	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.	December 2019	February 2019

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6.4.4. 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
Responsibility	• An IT Strategic Committee and an IT Steering Committee should be set up. • The importance of IT Governance in the GT should be promoted. • Create a role of CIO	• IT Steering Committee members and roles • List of dissemination actions taken to promote ITG • Formal nomination of the CIO	• Number of meeting of the steering committee • Number of dissemination events
Strategy	• The Governance Team should direct the strategic planning of IT. • The GT should design a long-term programme that has the aim of implementing all the IT developments that the university needs to meet its users' needs. • 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.	• Strategic Plan of the university with IT strategies included • IT infrastructure renewal plan • text of each policy	
Acquisition	• Define the relationship with IT providers	• Text of policy providers	• Number of suppliers included in the reference catalogue
Performance	• Create and measure catalogue of IT indicators about operations and management	• Catalogue of IT indicators	• Number of IT indicators included in the catalogue

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Conformance	• The GT should officially assign the responsibility of being aware of IT-related legislation and the responsibility of understanding IT-related standards 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 university, and this should be kept up to date. • 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.	• Names of the person/people who is responsible of IT-related standards • List of IT standards that the university should implement • Implementation Plan of standards • Names of the person/people who is responsible of conformance all the laws related with IT • List of laws the university should satisfice • Conformance Plan • List of standards	• - % of standards of the list which are implemented yet • - % of laws of the list which are implemented yet • Number of consultations 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

Table 4: List of KPI

6.4.5. 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:

- Delay in implementation,
- Lack of motivation of GT,
- Lack of implication of Manager,
- Lack of Expertise in IT,
- Not appointing a CIO,
- Lack of Alignment,

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- Lack of politic stability in Tunisia,
- Lack of stability of standards.

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).

Risk	Prob.	Impact
Lack of motivation of the GT	Low	High
Delay in implementation	Medium	Medium
Lack of politic stability in Tunisia	Medium	High
Lack of stability of standards	Medium	Medium
Lack of Expertise in IT	High	High
Not appointing CIO	Low	High
Lack of alignment	Low	High
Lack of implication of managers	Low	High

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.

RISK MONITORING, MANAGEMENT AND CONTROL

In the following part of this report we will define two different risk specifications namely: Internal risks and external risks.

- To each of these we will define:
- The probability of the risk,
- The Impact of the risk,
- The monitoring: how to assess the risk?
- The agency account plan: how to solve the problem in case of risk?

Risk	Prob.	Impact	Monitoring	Contingency plan
Lack of motivation of the GT	Low	High	Attendance rate at organized meetings, scheduling meetings, progress of work, composition of the GT	search another motivated person, change non-active person in the team, organize meetings to emphasize the importance of governance, organize team building, receive feedback from team members.
Delay in implementation	Medium	Medium	Check if the actions are done on time and if they are consistent and	Review the schedule of actions, re-plan actions in time to recover the delay.

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			adequate in terms of the planned action.	
Lack of politic stability in Tunisia	Medium	High	Change and instability of the country's political situation.	No change
Lack of stability of standards	Medium	Medium	Examine the current state of the standards	update the standard catalogue
Lack of Expertise in IT	High	High	See the profile of people in direct contact with IT. Review the project's validity with the laws and directives related to IT	Organize and plan training sessions for the GT about standards and IT strategies.
Not appointing CIO	Low	High	Check if the needs of the institute in IT terms are adapted to the current IT environment or not?	Compose a group of persons and select among the whole, the most suitable and the most efficient person.
Lack of alignment	Low	High	Check if the IT projects respect the strategic objectives of the institute.	Redefining the strategic objectives of the institute related to IT and making the choice of projects in line with the adopted strategy.
Lack of implication of managers	Low	High	Evaluate the interest and involvement of manager in IT and its participation in decision-making.	Plan a communication strategy with the director to show the importance of IT and involve it in decision-making.

6.4.6. 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 Gabes institutions. (Materials; conference room of the university, stands and posters

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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)
- Using the social media to improve the dissemination. (deliverables; Links, posters, leaflets, video sequence, photos)

7. Conclusions

The development of the framework for the university of Gabes started by adopting the Spanish framework. The first self-assessment of the current situation of the best practices of ITG showed that some principles are more mature than others. Human behavior (29%), conformance (26%) and Acquisition (24%) are the principles with the most implemented best practices. In the other hand, Responsibility (13%), performance (14%) and strategy (6%) principles have a lower percentage of best practices.

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. The analysis of the current maturity level showed that the principles with an initial level of maturity are: Responsibility, strategy and human behavior (level 1). The other principles (conformance, acquisition and performance) have the lowest maturity level (0).

By using the existing best practices as well as the current maturity level, the KTI tools, a set of improvement actions were proposed to improve the maturity level of ITG. The goal was set to intuitive (level 2) for responsibility, strategy and acquisition. The objective for conformance, performance and human behavior was set to initial level (1).

These actions were planned to be deployed in the future according to a Gantt diagram.

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