

PROJECT ANALYTICS  
Lesson 2. Driving towards better metrics

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**SECTION 1**  
**LESSON INTRODUCTION**

**Root causes of project failures**

To make an exhaustive list of causes of project failure is a difficult task. The main issue is that distinctive causes of project failure can be associated with the failure of specific types of projects. Factors that may affect the realization of a manufacturing information system differ from those that may affect the project of a new shopping center or the project of a large-scale solar energy system. Furthermore, causes of project failure may also be contingent on the stage of the life cycle in which the project resides: the causes of failure at the early stage of a project are not the same that can occur during its implementation.

Even though it is difficult to define exactly what may cause a project failure, some common aspects seem to be strongly related to the failure of projects. These aspects are:

- 1) the inadequate implementation process;
- 2) the mediocre economic results; and
- 3) the poor client satisfaction.

Two factors appear predominant in determining the inadequate implementation process: the lack of expertise and the lack of adequate troubleshooting mechanisms. Instead, the poor client satisfaction can be caused by the poor involvement of stakeholders and final users.

The most common causes of project failure are

- Poor involvement of stakeholders
- Weak business case
- Unclear project goals and expectations
- Vague or incomplete project work-plan
- Poor financial estimates
- Lack of resources
- Inadequate resources' skill
- lack of adequate troubleshooting mechanisms
- Poor testing strategy
- Unrealistic plan
- Poor risk management plan
- Use of not experimented technology

## Key learning points of the lesson

- Understand the importance of metrics to stakeholders
- Understand how metrics change when recovering a distressed project
- Understand how metrics impact upon project audits and health checks.

## Engaging Exercise

Plan how to involve stakeholders in a tourism cluster in Malta (see LESSON 2 EXERCISE)

## SECTION 2

### STAKEHOLDER MANAGEMENT

Identifying and properly managing stakeholders facilitate the development of projects.

#### Project stakeholders – definition

Project stakeholders – individuals, companies or organisations that are affected by the outcomes of the project or the way in which the projects managed.

Freeman, the father of the *Stakeholder Theory*, defined stakeholders as “any group or individual who can affect or is affected by the achievement of the organisations objectives” (1984). This definition has been agreed by many scholars.

#### Stakeholder identification

One of main purpose of the project preparation is to identify stakeholders’ roles, the conflicts that might exist among these roles, and the formation of any negative networks that could hinder project development (Figure 1).

Stakeholders can be defined as key or non-key:

1. *Key stakeholders* are those individuals or groups that can affect the project positively or negatively;
2. *Non-Key Stakeholders* are those individuals or groups that are not decisive to the project success.

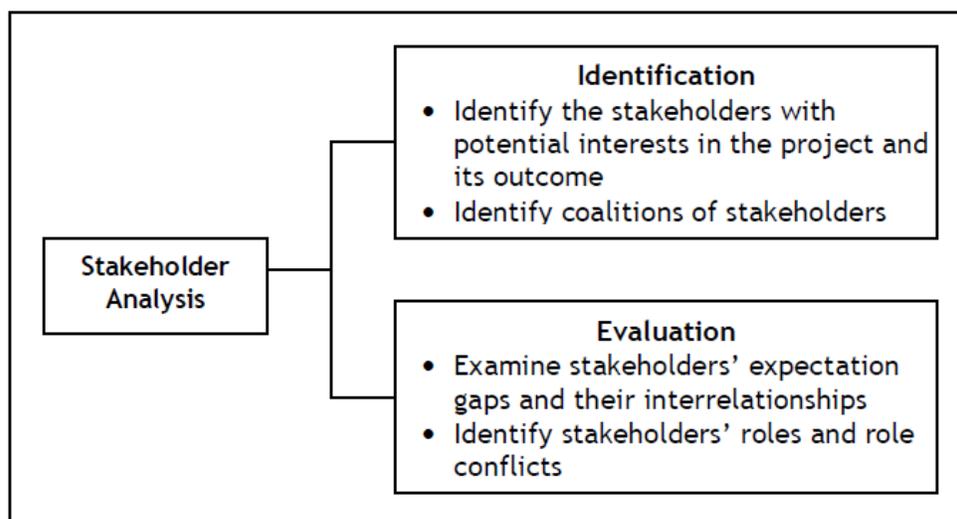


Figure 1. Stakeholder Analytical Framework (source from Freeman 1984)

#### Stakeholder types

There are a number of types of stakeholders; they can be public authorities, investors, local communities, business subjects, consumers associations and individual consumers. Stakeholders can be residents as well non-residents and have a monetary or nonmonetary interest in an a project.

The Figure 2 shows the importance of community interest in project development and, consequently, the more complexity of contemporary stakeholder management.



**Figure 2. Stakeholders in traditional and contemporary projects**

**Evolution of stakeholder management**

In the last decades, stakeholder analysis and management changed. The Figure 3 shows that the principal changes concern the introduction of a multi stakeholder and client-centered view. A novelty is also the importance acquired by the notion and practice of corporate social responsibility (CSR) which is a form of corporate self-regulation integrated into a business model.

PAST VIEW	PRESENT VIEW
Manage existing relationships	Build relationships for the future (engagement mgt.)
Aligned to short-term business goals	Aligned to long-term, strategic business goals
Provide ethical leadership when suited	Always provide ethical leadership
Project success is aligned to profits	Project success is aligned to client's business value
Identify profitable scope changes	Identify value-based scope changes

**Figure 3. Past view and present view in stakeholder management**

**Stakeholder management issues**

It has been observed that:

Project stakeholders will have their own interests and related perspective related to the project. That means that they will not necessarily contribute, on their own account, as you may wish. You must be alert to important stakeholders and aware of how they act rather than simply considering what you need from them. The aim of project stakeholder management is to increase the likelihood of the project success. (Eskerod, Huemann & Savage, 2015, 7)<sup>1</sup>

<sup>1</sup> Eskerod, P., Huemann, M., & Savage, G. (2015). Project stakeholder management—past and present. *Project Management Journal*, 46(6), 6-14.

The current literature indicates many issues related to the stakeholder management:

- Stakeholders will come from different geographical locations, cultural backgrounds and corporate positions.
- Growing number of stakeholders results in an increase in required metrics
- Satisfying each of stakeholders may prove infeasible
- Different stakeholders may interpret the same metrics in a totally different way
- Stakeholders may change during the project life cycle, and so the revision of metrics would be needed
- Stakeholders also have stakeholders
- Negotiation with stakeholders may take place a number of time during the project process.

### Process for stakeholder metrics management

Effective stakeholder management ought to take into account the following activities (Figure 4):

- Stakeholders identifying: who stakeholders are and the organization that they come from.
- Stakeholder analysis: stakeholders expectation of the project and their contribution to the project.
- Plan and perform stakeholder engagement: defying the better strategies the involve stakeholders into the project and obtain their support.
- Stakeholder information flow: managing suitable channels and information means by which. reaching stakeholders and communicating with them.
- Agreements abide: negotiating agreement swith stakeholders and if necessary renegotiate them, e.g. due to project changes.
- Project debriefing: including stakeholders in the project debriefing.



Figure 4. The main activities of the stakeholder management process

## SECTION 3

### MANAGING SCOPE CREEP AND DISTRESSED PROJECTS

Scope creep can transform a good project into a distressed one. Sometime an unwanted and negative fact may occur or develop gradually and almost imperceptibly.

For this reason, the best way to avoid scope creep is the careful and continuum planning and control of the project. One should schedule project activities thoughtfully and control their progress regularly. Of course, it is possible to make adjustments and changes to the project plan, but any change should not let uncontrolled. The minimum change has to be assessed in order to verify if it will affect the budget, schedule and scope of the project.

### Three Distressed Project Outcomes

The following are the three most frequent distressed project outcomes:

- Project must be completed; i.e., required by law or failure is not an option
- Project can be completed but with major costly changes to the original requirements
- Project should be cancelled:
  - Costs and benefits are no longer aligned
  - What was once a good idea no longer is

However, sometimes, to accept a new unplanned customer's request or to placate the customer's complain due to a little delay can cause a scope creep. As a result, a good project might become a distressed one.

### Understanding scope creep

In order to minimize the negative impact on the project, one have to consider that the continuous enhancement of project requirements as project deliverables are being developed, leading to a growth in the project scope, can cause scope creep. Perfectionism can be risky, it may be better making everything "just enough" than "perfect". Another risk is the so called *featuritis* that occurs when the project team adds unnecessary features. Finally, one ought to take into account that the compliance with legislation and regulatory changes can cause costly scope creep. To prevent this issue it is necessary to include specific clauses in the project contract.

The following are the most diffused reason for scope creep:

- Poor understanding of requirements
- Poor definition of requirements
- Complexity
- Poor specifications
- Insufficient communication
- Wrong expectations
- Perfectionism
- Market pressures
- Poor change control
- Customer placating
- Etc.

There are some interesting aspects associated with scope creep:

- Scope creep means change in project goals, but a change is not always negative since it can make the product more valuable for the customer and this can increase the revenue.
- It is an indication of how well the scope changes are being managed: no way all the requirements and implications are known at the beginning and ideas need time to mature.
- Impacts of scope creep are generally cost increases and schedule elongations, but an innovative idea can be introduced to tackle the negative impact and generate positive value.

### Turning scope creep into an advantage

Let's discuss:

Is scope creep always evil or can it produce favourable results?

### **Distressed project and metrics**

Metrics are essential in project management and suitable metrics should be established for the tracking of scope creep. Accordingly, metrics should be designed to inform of scope creep or project failure.

However, scope creep or failure may have different sources which are difficult to predict from the outset. For this reason, a revision of metrics is important during the project recovery.

Key Performance Indicators(KPI) are performance measurement that can be useful in scope creep management.

Key = a major contributor to success or failure

Performance = measurable, quantifiable, adjustable and controllable elements

Indicator = reasonable representation of present and future performance

KPIs should be:

- Predictive: able to predict the project trend
- Measurable: expressed quantitatively or qualitatively
- Relevant: directly related to the success or failure of the project

### **Engaging Exercise**

Giezen (2012) suggests a framework for managing scope creep through reducing project complexity, applied to a case-study of a metro extension in the Rotterdam Region in the Netherlands.

Read this paper and answer the following questions:

1. What are for the author the advantages and disadvantages of reducing complexity by simplification?
2. Giezen adopts the method of the deviant case study design; how does the author argue this choice?
3. Was the ability of the project team to resist the stakeholder pressures for unnecessary changes decisive for the project success?
4. What was the *trick* of the Beneluxlijn project?

1. knowledge of procedures is crucial in order to be able to understand where	the law allows simplification
2. Deviant case analysis is a methodological approach that provide	sampling decisions and treatment of data
3. The project team should be able to resist	stakeholder pressures for unnecessary changes
4. The project shows that	a reduction of uncertainty through simplification can be very beneficial

## **SECTION 4 PROJECT AUDIT AND HEALTH CHECKS**

Project audits and health checks are necessary for an effective project management.

A **project audit** provides a means to uncover issues, concerns and challenges during and after the execution of a project. Of course, a post-project audit has no benefits for the project, but may be helpful for future projects.

Project health checks (PHC) are used to assess the state of health of a project. They can show whether the project is well-governed and risks are being identified and are under control. PHCs may include meetings or interviews with key stakeholders, review of project documentation to determine whether the project is following its timeline, is on budget, is achieving its expected objectives and is managing risks effectively.

The Figure 5 shows the different form of project assessment.

No	Terminology	Description
1	Project Management Audit	It involves a detailed assessment of how the project is being managed through discussions and interviews with the project managers, technical leaders, and team members.
2	Project Audit	It is a formal and systematic assessment of a project's current status. It confirms whether the project teams are using the appropriate project management process. It is a re-assessment of the different aspects of projects by an external expert. It determines project managers' compliance of set procedures, policies and key practices.
3	Project Health Check	It involves interviewing key project stakeholders and revision of project documents. It feeds the project manager, project sponsor and project team with information on what has been done rightly and what must be done to ensure successful completion of the project.
4	Project Diagnostics	It is done to see if the project team is using a systematic methodology in the planning and management of the project.
5	Project performance evaluation	It affords managers the opportunity to examine a project and finds out where they need to make an improvement.
6	Project performance Audit	It involves a detailed evaluation of projects which amongst others confirm the ability of the project to achieve specified objectives.

Adapted from  
Cao & Hoffman (2011),  
Duffy and Thomas (1989),  
Egeland (2009),  
Field and Keller (2004),  
Hossain (2010),  
Jaafari (2007),  
Jedd (2007),  
Mathis (2010) and  
McDonald (2002)

Figure 5. Forms of project assessment

### Project audit

Project audit can be defined as an independent review focused on establishing project performance, compliance, correspondence to objectives, schedules and budgets.

Kerzner identifies several types of audits:

- **Performance Audits:** These audits are used to appraise the progress and performance of a given project. The project manager, project sponsor, or an executive steering committee can conduct this audit.
- **Compliance Audits:** These audits are usually performed by the project management office (PMO) to validate that the project is using the project management methodology properly. Usually the PMO has the authority to perform the audit but may not have the authority to enforce compliance.
- **Quality Audits:** These audits ensure that the planned project quality is being met and that all laws and regulations are being followed. The quality assurance group performs this audit.
- **Exit Audits:** These audits are usually for projects that are in trouble and may need to be terminated. Personnel external to the project, such as an exit champion or an executive steering committee,

conduct the audits.

- **Best Practices Audits:** These audits can be conducted at the end of each life cycle phase or at the end of the project. Some companies have found that project managers may not be the best individuals to perform the audit. In such situations, the company may have professional facilitators trained in conducting best practices reviews.
- **Metric and KPI Audits:** These audits are similar to Best Practices Audits and used to establish a library for metrics.

### Project audit versus health check

There is a difference between project audit and health checks (Figure 6).

Essentially, the aim of the project health check is to make sure that the project is on time, on schedule, on scope, and on budget. The project audit is not about the health of the project, but it's about seeing if the project is being managed properly according to the organization's standards and guidelines and that the project plan is being followed. The aim of the project audit is to identify any project management errors that may have occurred during the project.

Health check can be performed also when the project is ended (this is called a project post-mortem check) and its aim is to highlight key issues the project has faced, in order to improve the process for next projects.

VARIABLE	AUDIT	HEALTH CHECKS
Focus	On the present	On the future
Intent	Compliance	Execution effectiveness and deliverables
Timing	Generally scheduled and infrequent	Generally unscheduled and done when needed
Items to be searched	Best practices	Hidden, possible destructive issues and possible cures
Interviewer	Usually someone internal	External consultant
How interview is led	With entire team	One-on-one sessions
Time frame	Short term	Long term
Depth of analysis	Summary	Forensic review
Metrics	Use of existing or standard project metrics	Special health check metrics may be necessary

Figure 6. Differences between project audit and health check

### Critical health check questions

Health checks support metrics, but three questions must be answered:

- Who will perform the health checks?
- Will the interviewees be honest in their responses?
- Will management and stakeholders overreact to the truth?

Despite project audits, project health checks are not performed by the project team. Generally they are performed by the *project review board* (or *PRB*) that usually includes: project sponsors, project management, clients, and other project stakeholders. In fact, the risk with using internal personnel is that they may have loyalties or relationships with people on the project team and, therefore, may not be totally honest in determining the true status of the project or in deciding who was at fault.

### Benefits of health checks

The benefits of health checks can be summarized as follow:

- Determining the current status of the project
- Identifying problems early enough such that sufficient time exists for corrective action to be taken
- Identifying the critical success factors that will support a successful outcome or the critical issues that can prevent successful delivery
- Identifying lessons learned, best practices and critical success factors that can be used on future projects
- Evaluating compliance to and improvements for the enterprise project management methodology
- Identifying which activities may require or benefit from additional resources
- Identifying present and future risks as well as possible risk mitigation strategies
- Determining if the benefits and value will be there at completion
- Determining whether the project must be closed completely to avoid further costs
- Developing or recommending a fix-it plan

### Generic project assessment process

The goal for project assessment is to a successful project execution.

A project assessment includes both the management as managerial issues in terms of benefits, organization, time, resources, economy, risk, quality, progress, change, process, maturity and leadership.

The Figure 7 shows the cycle of the project assessment process, whilst Figure 8 shows the project health check.

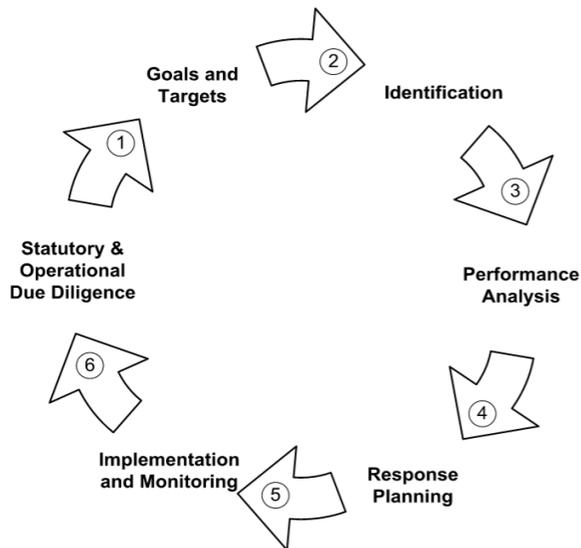


Figure 7 . The project assessment process

Figure

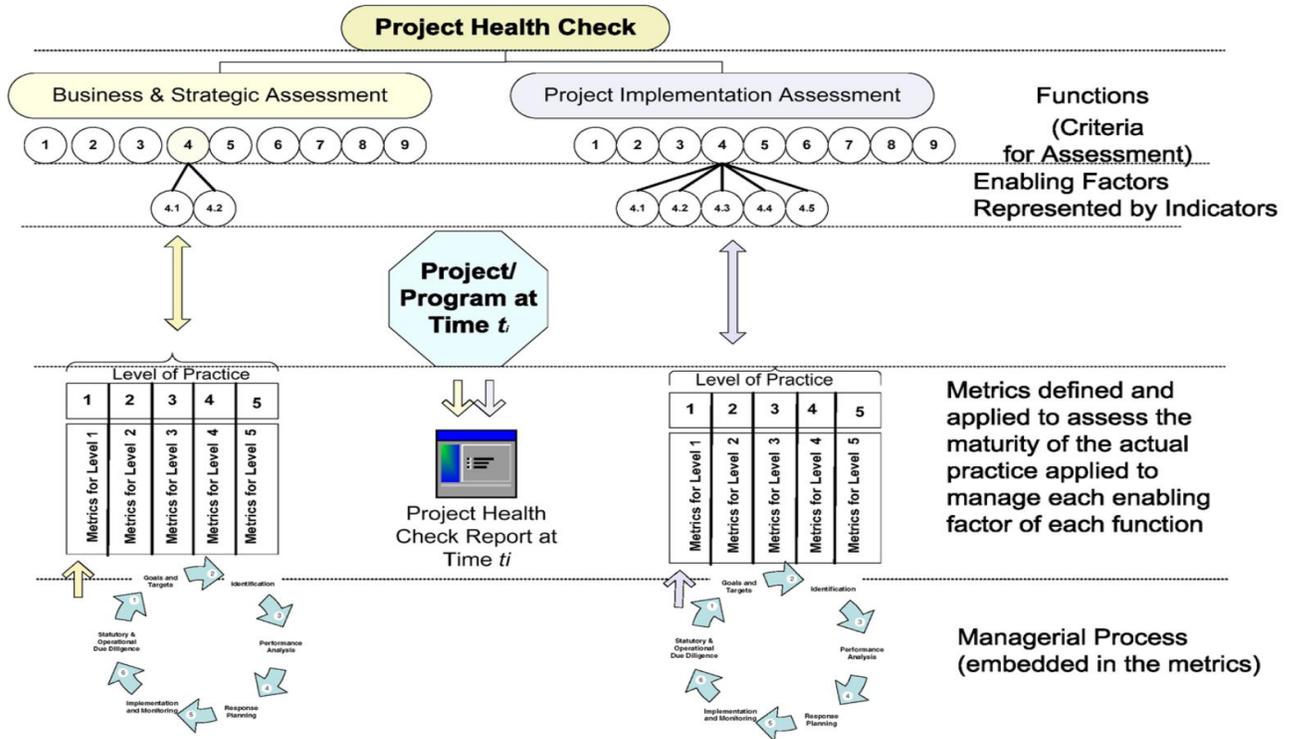


Figure 8. The project health check

### Project assessment and metrics

There can be different project management metrics defined based on complexity and nature of project. However, following five performance metric groups cover all the important aspects of a project to measure during execution.

### Matching Exercise

1. What is the difference between project audit and health check?
2. Can health check be performed when the project is finished?
3. Is response planning part of the project assessment?

### Engaging Exercise

Patanakul et al. (2016) discusses factors affecting performance of large scale government projects. They analyse a number of public projects undertaken in the U.S., UK, and Australia and reviewed officially by the national audit offices and government agencies.

Read this paper and answer the following questions:

1. The evaluation of a successful project should include	the assessment of the benefits realized from the project
2. One of large-scale project characteristic is	multiple stakeholders
3. One of issues impacting poor project performance of large-scale project is	complicated and changing political environment
4. An important recommendations for reducing complexity in large-scale project is	modularize project into subprojects
5. The project steering committee should also be established to ensure	the active involvement of senior management in the project

Post your responses onto the blog.

### Lesson summary

- Contemporary projects at dealing with increasingly high number of diverse stakeholders
- Stakeholder management should serve strategic business purposes rather than merely those limited by an individual project
- Stakeholder metrics management process is becoming an integral part of project management
- Scope creep is typical in project of any scale or type and must be addressed with change management practices
- Project assessment can be considered as one of the best practices of contemporary project management
- Project audits and health checks take advantage of metrics measuring project state in a variety of dimensions.

### Lesson quiz

1. One of the most common causes of project failure is
  - a. Absence of post-project audit
  - b. Poor risk management
  - c. Growing number of stakeholders
  - d. Changing the project manager

Feedback on question 1. The correct answer is (b). It is the effective and efficient risk management plan that is key to project success. Post-project can only affect subsequent projects through the “lessons learned” process, while growing number of stakeholders should not be a problem if properly mitigated through stakeholder management. Finally, changing the project manager may sometimes necessary. *See section 1 for further details.*

2. An effective communication plan is necessary to :
  - a. Improve the project competitiveness
  - b. Evaluate the positive impact of the project

- c. Involve stakeholders
- d. Clarify project objectives

Feedback on question 2. The correct answer is (c). Communication plan aims at reaching stakeholders in order to involve them into the project and receive by them advice and recommendations useful for the project improvement. Communication doesn't directly affect competitiveness, neither any evaluation process. Project objectives clarification is necessary to identify target groups and define the appropriate communication strategies. *See section 3 for further details.*

- 3. Operational due diligence is a component of:
  - a. Project assessment
  - b. Stakeholder empowerment
  - c. Health check of project
  - d. Project team assessment

Feedback on question 3. The correct answer is (a). Operational due diligence aims at reviewing a business plan checking if it is achievable with the current operational facilities. Stakeholder **empowerment** occurs when power and responsibility are transferred to them; health checks are used to assess the state of health of a project; project team assessment doesn't concern the review of a business plan. *See section 4 for further details.*

- 4. Scope creep is essential in determining the current status of the project
  - a. True
  - b. False

Feedback on question 4. The correct answer is (b). Scope creep refers to uncontrolled changes or continuous growth in a project's scope; it is absolutely to be prevented and managed! *See section 3 for further details.*

- 5. Stakeholders remain the same during the project life cycle:
  - a. True
  - b. False

Feedback on question 5. The correct answer is (b). Stakeholders can change, accordingly to the project development; changes of the project can require new stakeholders. *See section 2 for further details.*

- 6. The aim of the project health check is:
  - a. Involve stakeholders in the project activities
  - b. Increase loyalty and relationships among project partners
  - c. make sure that the project is on time, on schedule, on scope, and on budget []
  - d. evaluate the project team

Feedback on question 6. The correct answer is (c). **Project health checks** are a means to monitor the status of a project and prevent project failure. Stakeholders involvement is necessary to prevent failures not to evaluate the state of the project; an appropriate communication process can favour loyalty and good relationships among partners. Health checks don't include the project team evaluation. *See section 2 for further details.*

7. To manage scope creep and distressed project is needed:
- a. Assess the minimum change in order to verify if it will affect the budget, schedule and scope of the project
  - b. Change the project manager
  - c. Create a Steering Committee
  - d. Develop or recommend a fix-it plan

Feedback on question 7. The correct answer is (a). Regular project assessment can help to prevent scope creep; if undervalued, little changes can generate big problems during the project development. The change of the project manager is not a related to the scope creep management. The Steering Committee is create to support the project management. Developing or recommending a fix plan ia one of the benefits of health checks. *See section 4 for further details.*

8. Negotiation with stakeholders must take place only at the beginning of the project:
- a. True
  - b. False

Feedback on question 8. The correct answer is (b). Negotiation with stakeholder ought to follow the project development. *See section 2 for further details.*

## LESSON 2 EXERCISE

### The stakeholder involvement in a tourism cluster in Malta

#### The issue of Malta Enterprise

Malta Enterprise, a government-funded agency decided to use cooperation and clustering to enhance the cost competitiveness of the micro and fragmented business entities, even though some observers report that clusters are underdeveloped in Malta due to fears of local entrepreneurs of losing their competitive edge if they join forces.

In fact, there is a high degree of interaction and healthy collaboration, specifically among hoteliers due to regular sharing of information on rates and occupancy levels, and natural HR mobility. This interaction is not as fluent amongst the other actors in the cluster, such as diving and language schools. Moreover, whereas traditional distribution channels such as travel agencies are progressively losing market share, e-commerce is not largely diffused.

The Malta Enterprise idea is that innovation in marketing and distribution is necessary and could be achieved with a greater integration of two of the main industries in Malta: IT and tourism. Presently, however, the interaction between IT and tourism is rarely taking place and synergies have not been developed, or even encouraged from the government.

#### Exercise

Use the European Commission Staff Working Document *Country Report Malta 2016* (<[http://ec.europa.eu/europe2020/pdf/csr2016/cr2016\\_malta\\_en.pdf](http://ec.europa.eu/europe2020/pdf/csr2016/cr2016_malta_en.pdf)>) and define an action plan in order to:

1. Identify stakeholders (write the stakeholder's function and name in a table).
2. Determine the stakeholder's *source of power*, considering that a stakeholder can have power because he is a decision maker, a financial and human resources expert, an opinion leader or any other important influencer.
3. Evaluate how each stakeholder may positively and/or negatively impact the project.
4. Define an effective communications plan to reach stakeholders, in particular how to create awareness amongst politicians and government institutions.