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Success in information technology projects: A comparative review based on the CobiT PO10 maturity model and suggestions from literature

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Abstract

The factors leading to success of Information Technology (IT) projects are widely discussed in literature. This paper endeavours to provide a comprehensive comparative review of the definition of (IT) project success according to literature and the well known IT control framework CobiT (Control Objectives for Information and Related Technology). For this purpose a construction of project success factor dimensions identified by literature as vital for the project success is built. The framework consists of three dimensions which are the foundation of project success: project management process, project product and organisational context. The definition of successful IT projects is provided by CobiT PO10 “Manage projects” and its maturity model. The paper shows that although CobiT PO10 covers some of the dimensions of project success discussed in literature, it has a limited view of the project success not considering the project product as one of the crucial factors for IT project success. The paper draws the conclusion that mature project management process according CobiT PO10 does not necessary lead to successful IT projects.

Keywords

Project management, CobiT, PO10, project success, project success factors, project success criteria, CobiT maturity model.

1. Introduction

The success of Information Technology (IT) projects is a widely discussed topic in literature. Many studies evaluate the factors and criteria crucial for success of IT projects. Fewer studies investigate how IT control frameworks define success of IT projects and how they measure it. The importance of internal control frameworks is greater than before, since the enacting of the Sarbanes-Oxley Act in 2002 and since the announcement of the Public Company Accounting Oversight Board’s (PCAOB) Auditing Standard No.2 (AS2) in 2004 (Tuttle & Vandervelde, 2007). Internal control frameworks offer tools and techniques for risk mitigation and ensure that the organisational strategic goals are followed. That is the reason why internal control frameworks are widely used by IT auditors, IT project managers and IT executives. Such frameworks offer a basis for comparison among enterprises and give an overview over the maturity of processes in enterprises.

Taking into consideration the importance of internal control frameworks in practice this paper looks into the definition of success of IT projects provided by the well known IT control framework for Control Objectives for Information and Related Technology (CobiT). CobiT consists of four domains containing 34 processes. For each of the processes CobiT offers a set of goals and metrics for measuring its maturity. A clear definition of six levels of maturity for each of the process is provided.

For the purpose of this paper an emphasis is put on one specific process in the domain “Plan and Organise” - PO10 “Manage projects” and its maturity model. The assumption made by this paper is that a closer look at the maturity model of CobiT PO10 provides more insights of the definition of success for IT projects. That definition is compared to different empirical findings in literature regarding project success. The literature review examines project success in the broader sense not only taking into consideration IT projects but also projects from other industries. Based on the literature review a three dimensional framework of project success factors is built. The framework is used as a starting point for assessment of the factors considered by CobiT PO10 as crucial for success of IT projects and mature project management.

The assumption made by the paper is that since CobiT provides tools and techniques for IT project management control the definition of project success is in accordance with literature. Besides that the paper assumes that the definition of mature project management provided by CobiT also provides the factors leading to success of IT projects.

The paper also discusses the gaps found between the empirical findings in literature and CobiT PO10.

This paper is relevant for all organisations utilising CobiT and measuring the level of maturity of project management using CobiT PO10. It presents the linkage between success of IT project and mature project management under the aspect of CobiT

2. IT project success, success factors and success criteria

There are many attempts to provide a definition of a successful IT project in literature. Agarwal and Rathod observed in their study that “...while successful software projects are hard to define and measure, the “not successful software projects” category is even more ambiguous” (Agarwal & Rathod, 2006). The following chapters give an overview of the definitions of project success and project success factors.

2.1.IT project success according to literature

The classic view of project management defines three main criteria of project success – time, cost and scope. These criteria well known as The Iron Triangle cover a particular part of the project objective missing to take into consideration the organisational objectives. Since projects have an organisational purpose the criteria of project success should consider their fulfilment. Consequently the project objectives are aligned to higher organisational objectives. Therefore the success of IT projects can be measured against the project and organisational objectives (DeWit, 1988). The benefits for the organisation and the stakeholders are seen as supplementary project objectives introduced by The Square Route of Atkinson (Atkinson, 1999). The benefits for the organisation are identified to be improved effectiveness and efficiency, increased profit,

achieved strategic goals and additional organisational learning. The benefits for the stakeholder community are satisfied users, positive social and environment impact and personal learning. The Square Route supports the linkage between project and organisational objectives and also provides an enhanced view of the project objectives involving the community as a project stakeholder (Atkinson, 1999).

Agarwal and Rathod identify two characteristics of project success: “Internal characteristics represent the efficiency of the project process and are used to measure the performance of an ongoing project while the external characteristics describe the effectiveness of product characteristics” (Agarwal & Rathod, 2006).

Other authors determine the quality of the project management process and the satisfaction of the project stakeholder as an additional component of The Iron Triangle and the internal view of project success (Kernzer, 2009)(Baccarini D. , 1999).

Thus each project has to have individual objectives including internal and external aspects and its success is measured against them. The project success definition is recapped by de Wit: “The project is considered an overall success if the project meets the technical performance specification and/or mission to be performed, and if there is a high level of satisfaction concerning the project outcome among key people in the parent organization, key people in the project team and key users or clientele of the project effort” (DeWit, 1988). That also means that the project success has a different definition for the project stakeholders. The stakeholders measure the project performance based on varying criteria. For example: the delivering organisation measures the project success based on profit, organisational growth ...etc, while the customer judges the project performance based on costs and delivered functionality.

That example shows that the project success depends on the subjective perception of the stakeholders and especially the customer satisfaction. The customer satisfaction can be measured as the perceived customer quality of the project. Tukel and Rom define project quality as “...meeting customer’s needs fully for the end product, reducing the reworking of non-conforming tasks, keeping customers informed of the progress of the project, and changing the course of work to meet the customer’s emerging requirements” (Oya Icmeli Tukel, 2001).

Another study explored four dimensions of project success: project efficiency, impact on the customer, business and direct success and preparation for the future. The authors of the study also emphasised that the project success is time-dependent and depends on the specific character of the project. For instance; construction projects, government project or software project etc. (A. Shenhar, 1997).

All these findings clearly demonstrate the complexity of determining the project success. In order to provide a definition of project success two main components of project success have to be evaluated; the project success factors and the project success criteria. The project criteria measure the stages of development of success factors which are the drivers of project success. Or as stated by Baccarini the project success criteria (PSCs) assess the success and the project success factors (PSFs) make success possible (Baccarini D. , 1999).

2.2.IT project success factors

Project success criteria have two components: project management success and product success. The product is defined as a project output. The project management success criteria are time, cost and scope, the quality of the project management process and the satisfaction of the project stakeholders. The project product success criteria are meeting the organisational objectives and the end customer satisfaction (Baccarini & Collins, 2004). Furthermore three main characteristics of the correlation between project management success and product success are identified by Baccarini: project success is superior to project management success, the project management success has an impact on the project success and project success is time-dependent. (Baccarini D. , 1999). Hence the product success depends on the project management success and the product success is the main driver of project success. Both belong to two different time dimensions since the project success can be measured once the project product is delivered and used for a certain period of time.

Another paper distinguishes between project success and project management success. Furthermore the paper questions the contribution of the project management to the overall success of the project “A project can be a success despite poor project management performance and vice versa” (DeWit, 1988). De Wit considers that a good project management performance contributes to the project success but doesn’t prevent project failure. That is supported also by Baccarini who states that “...a project that is a project management failure is perceived as a project success because the higher-level objective of product success is met.” (Baccarini D. , 1999).

It seems that the difference between project success and project management success is not really understood in practice. An empirical study showed that 46 % of the participants stated that project management success differs from project success, while 43% of the respondents believed that project success and project management success are the same (Shokri-Ghasabeh & Kavousi-Chabok, 2009).

Talking about project success factors there are also other aspects which have to be mentioned here. Another study divides the success project factors into two major categories: The first category is defined as hard skills and consists of tools, processes and techniques. The second category represents soft skills which include communication, leadership, team building, problem solving and decision making (Belzer, 2001). The soft skills refer to the personality of the project manager. The contribution of the project manager to the project success is also discussed in literature and identified as a vital success factor (Prabhakar, 2008) . That opinion is supported by another paper, which stated that the competence of the project team or the human resource component of the project is important for its success (Shokri-Ghasabeh & Kavousi-Chabok, 2009). Without doubt the soft skills also contribute to the project success. For the purpose of this paper they are set aside since CobiT doesn’t take them into consideration in PO10.

2.3.Project success criteria

According to a literature review conducted by Shokri und Kavousi (Shokri-Ghasabeh & Kavousi-Chabok, 2009) the top five criteria correlating to project success are: time (54%), cost (52%), stakeholder satisfaction (43%), quality (43%) and top management support (21%). In order to verify the literature findings they conducted an empirical study among 340 professional in the area of project management getting a response rate of 19%. The project management

professionals rated the top management support as the criterion with the highest importance for the project success. It is followed by costs, project control (5% according to literature), stakeholder satisfaction and scope (14% according to literature). That study shows that in practice the top management support is rated highest. Furthermore the study found out that the contribution of both criteria time and quality to project success is overestimated in literature. The empirical data delivered a significant lower rating of their importance (consequently 8 and 9 degrees lower).

These findings are supported by a study conducted among manufacturing companies in Malaysia (Kuen, Suhaiza, & Yudi, 2009). The study identified a strong correlation between the macro project success and the top management support. Hence the top management support is a crucial success factor not only for IT projects but for all type of projects.

An empirical study conducted among 150 project manager in Australia showed that in terms of project management success the following criteria are widely used: time (85%), cost (78%), quality (55%), cooperation (23%) and stakeholder satisfaction (19%). The criteria in terms of project product success are client satisfaction (41%), organisational goal (22%) stakeholder satisfaction (19% used also for measuring the project management success), profit (15%) and cost efficiency of the product (12%) (Baccarini & Collins, 2004)

Another study evaluating the project success criteria among different groups of stakeholders (software developers, project manager and account managers) in the software industry found out that for all participants the scope is the most important success criteria for project performance measurement. The scope is defined as the functionality and the quality of the project product. Between cost and time they rated time as a more critical success criterion than cost (Agarwal & Rathod, 2006)

All these studies show that the Iron Triangle criteria (time, cost and scope) are still utilized in practice for project performance measurement. They give information regarding the quality of the project management process. Criteria such as stakeholder satisfaction, quality and functionality (partial represented in the study in the IT industry) refer to the project product. The organisational context is represented by the criterion top management support. That criterion seems to contribute significantly to the success of the project regardless of the industry.

3. Project success framework

Based on the literature review two main dimensions of project success can be determined: project management success (internal project view) and product success (external project view). Both of them are related and are time-dependent. The conclusion one may draw from the above is that the project success also depends on the point in time in which it is measured. That is true due to the characteristics of the project product but also to the organisational context. A project may be challenging (not delivered on time or on budget) and will be considered as failed in the short term. This judgment takes into consideration the internal view of the project. In the long term the project can be considered as successful if the project benefits to the organisation and even to the stakeholders turn to be positive. That would be the external view of the project. For example: gaining new knowledge and experience used by the organisation for future development. Hence, the short term evaluation of project success can significantly vary from the long term evaluation. How and when the evaluation of project success is conducted depends on

the organisational context as well. Therefore not only the time but also the organisational context is important for the assessment of project success.

This paper adds the organisational context as a third dimension of project success. It includes time constraints and all factors which are related to a specific industry but also to a specific organisation. That dimension contains other factors such as approach for project performance measurement, utilization of project management standards and techniques, post implementation reviews of projects for collecting lessons learned, ...etc.

Based on the literature findings this paper builds a framework of three dimensions of success factors. The framework includes the dimensions of project management process success, project product success and organisational context. The organisational context incorporates the time dimension and considers the time dependencies between project management process success and product success.



Figure 1: Project success framework used by the paper

4. A comparative review: CobiT PO10 and literature

4.1.Approach

For the purposes of the comparative review two main components of CobiT PO10 “Manage projects” are taken into consideration the PO10 maturity model and the PO10 metrics. Both should provide a definition of project success and also project success factors and criteria. These definitions are then compared to the three dimensions of project success identified in this paper above. On one hand all PO10 metrics are compared to the project success criteria according to literature in order to identify to which of the success dimensions they bear resemblance. On the other hand the different PO10 maturity stages are aligned to the project success framework.

4.2. Project success according to CobiT PO10

According to CobiT PO10 “Manage Projects” an IT project is controlled if it is managed with alignment to the business objectives and the results are delivered on time, on budget and on agreed quality. The project control is based on a program or a project management approach which allows the proactive participation of all project stakeholders. The project management is conducted in an efficient and effective manner (ISACA, 2008). CobiT considers the success of IT projects as a joint effort of the whole organisation. Furthermore CobiT focuses on the context in which IT projects are conducted and their alignment to business objectives. IT projects activities are managed as processes. These processes are aligned to IT goals. The CobiT offers a set of metrics for measuring the status of development of activities and processes. With this characteristic the PO10 metrics can be directly compared to the project success criteria discussed in literature.

4.3. Dimensions of project success and CobiT PO10 maturity model

The PO10 maturity model is divided into 6 levels of process development starting from not existing (0) and ending with optimised (5). The degree of process development increases with the next higher level. The next level incorporates all the characteristics of the previous one and adds supplementary features. Consequently the highest maturity model offers the definition of a mature and developed project management process. Table 2 provides an overview of the definition of the PO10 maturity model.

The dimensions of project success defined by the project success framework in this paper are compared to the PO10 CobiT maturity model in order to evaluate the coverage between both.

4.3.1. Organisational context and Project Management Process

The organisational context is considered as a success factor and it is represented by the following criteria: top management support, alignment to business goals and project management standards and policies. The criteria belonging to the project management process are: quality of the project management process, measurement of the project output and stakeholder involvement. The different stages of maturity of both success dimensions are well determined within the maturity model.

Maturity levels 0 to 2 have one common characteristic: the lack of top management support. A detailed review of these maturity levels shows that due to the lack of top management support the process management process can not be developed. Hence there is a correlation between the progress of the project management process and the top management support. Furthermore according to the PO10 maturity model a project management approach is “defined” if there is a top management involvement in the projects (maturity level 3). From this level on the project management process is managed inside the organisation. The project management process is managed and measurable (maturity level 4) if the process has the attention of the top management and criteria for evaluating project success are established (ISACA, 2008).

Comparing maturity levels 1 to 4 the conclusion can be drawn that a general project management process can be established only with top management support. Thus, that corresponds with the findings in literature that the most important project success criterion is the top management support. The latest stage of project management process development is defined on maturity

level 5. Consequently level 5 provides also the definition of a mature and developed project management process leading to successful projects. One important characteristic of that definition is that the project management process is completely embedded in the organisational context; the organisation has a programme methodology supporting a full project live cycle implemented by using the best project management practices. The responsibility for project execution to the end is carried out by a global project management office (PMO). The PMO ensures that all IT resources are used in best possible way in order to support the strategic initiatives (ISACA, 2008). Hence the conclusion can be made that the organisational context is an important factor or even the foundation for successful projects.

Development stages of project management according to the maturity model of CobiT PO10
<i>Non-existent (0)</i>
Project management techniques are not used and the organisation does not consider business impacts associated with project mismanagement and development project failures.
<i>Initial/Ad Hoc (1)</i>
The use of project management techniques and approaches within IT is a decision left to individual IT managers. There is a lack of management commitment to project ownership and project management. Critical decisions on project management are made without user management or customer input. There is little or no customer and user involvement in defining IT projects. There is no clear organisation within IT for the management of projects. Roles and responsibilities for the management of projects are not defined. Projects, schedules and milestones are poorly defined, if at all. Project staff time and expenses are not tracked and compared to budgets.
<i>Repeatable but Intuitive (2)</i>
Senior management gains and communicates an awareness of the need for IT project management. The organisation is in the process of developing and utilising some techniques and methods from project to project. IT projects have informally defined business and technical objectives. There is limited stakeholder involvement in IT project management. Initial guidelines are developed for many aspects of project management. Application of project management guidelines is left to the discretion of the individual project manager.
<i>Defined (3)</i>
The IT project management process and methodology are established and communicated. IT projects are defined with appropriate business and technical objectives. Senior IT and business management are beginning to be committed and involved in the management of IT projects. A project management office is established within IT, with initial roles and responsibilities defined. IT projects are monitored, with defined and updated milestones, schedules, budget and performance measurements. Project management training is available and is primarily a result of individual staff initiatives. QA procedures and post-system implementation activities are defined, but are not broadly applied by IT managers. Projects are beginning to be managed as portfolios.
<i>Managed and Measurable (4)</i>
Management requires formal and standardised project metrics and lessons learned to be reviewed following project completion. Project management is measured and evaluated throughout the organisation and not just within IT. Enhancements to the project management process are formalised and communicated with project team members trained on enhancements. IT management implements a project organisation structure with documented roles, responsibilities and staff performance criteria. Criteria for evaluating success at each milestone are established. Value and risk are measured and managed prior to, during and after the completion of projects. Projects increasingly address organisation goals, rather than only IT-specific ones. There is strong and active project support from senior management sponsors as well as stakeholders. Relevant project management training is planned for staff in the project management office and across the IT function.
<i>Optimised (5)</i>
A proven, full life cycle project and programme methodology is implemented, enforced and integrated into the culture of the entire organisation. An ongoing initiative to identify and institutionalise best project management practices is implemented. An IT strategy for sourcing development and operational projects is defined and implemented. An integrated project management office is responsible for projects and programmes from inception to post-implementation. Organisation wide planning of programmes and projects ensures that user and IT resources are best utilised to support strategic initiatives.

Table 2: CobiT PO10 maturity model definition Source: (ISACA, 2008)

4.3.2. Project Product and time dimension

Although CobiT PO10 pays a great attention to the organisational context the time factor is missing. CobiT PO10 does not provide any suggestion how the time factor is taken into consideration. As discussed earlier in this paper the project success can be evaluated differently depending on the time frame in which it is measured. The organisational context promoted by the PO10 maturity model does not offer any other aspects as the size of the organisation or the number of large projects undertaken. Such aspects "...the frequency of large projects and the size of organisations all positively correlate with success rates." (Bernroider & Ivanov, 2011).

Another gap between CobiT PO10 and the findings in literature is that CobiT PO10 defines project success only based upon criteria refereeing to the organisational context and the project management process but not to the project product. On one hand the main objective of CobiT PO10 is to ensure that IT projects are measured efficiently and effectively and in alignment with business objectives. On the other hand CobiT PO10 does not assess the IT project product and its quality. Figure 2 presents the mapping between CobiT PO10 definitions of project success and the framework built upon the consideration from literature. CobiT PO10 covers two main dimensions of project success; the organisational context and the project management process. However, not considering the time factor and the project product success CobiT PO10 fails to provide a complete definition of project success.

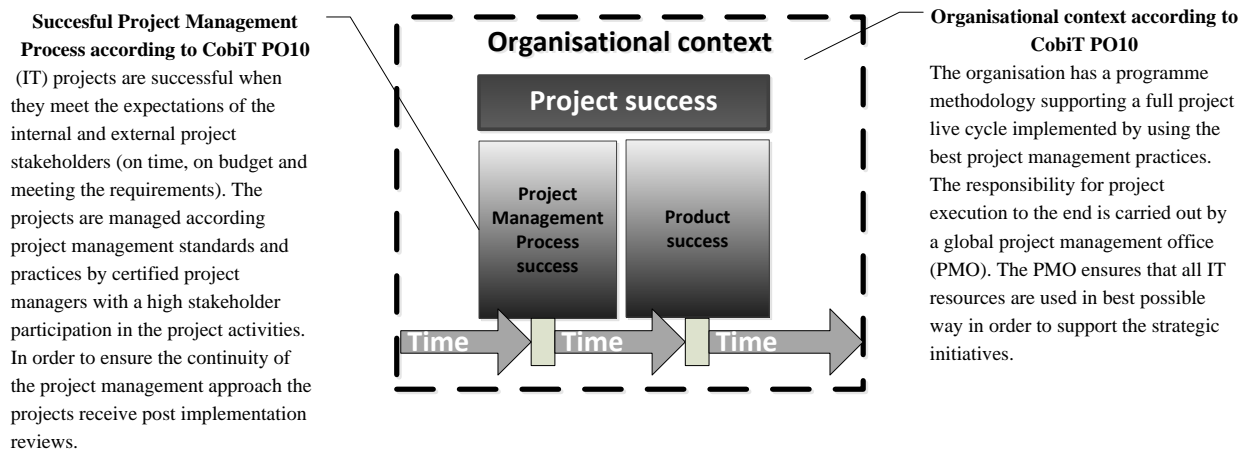


Figure 2: Project success framework and the dimensions covered by CobiT PO10

4.4. CobiT PO10 metrics, project success dimensions and success criteria according to literature

The CobiT metrics offer a high level overview of the project management approach in the organisation. A study exploring the practice utilization of PO10 CobiT and its correlation to the success of IT projects determined that "..., CobiT metrics seem to have a stronger relationship to programme management rather than to the view of individual projects" (Bernroider & Ivanov, 2011). The main premise of CobiT PO10 is that projects are managed in an efficient and effective way. That also reflects on the PO10 metrics used for evaluating the project management performance.

Table 1 provides an overview of the PO10 metrics and their assignment to the different level of PO10 goals. Furthermore the PO10 metrics are associated to the project success dimensions identified by the framework used in this paper.

CobiT PO10 metric	CobiT PO10 goals	Success factor dimension	Criteria suggested by literature
% of projects meeting stakeholder expectations (on time, on budget and meeting requirements)	IT goals	Project management process	Global view of IT projects. Incorporates cost, time, scope (quality and functionality) and project stakeholder expectations
% projects on time and on budget	Process	Project management process	Time, cost
% Projects meeting stakeholder expectations	Process	Project management process	Project stakeholders satisfaction, benefits for the organisation, benefits for the customer
% Projects following project management standards and practices	Activities	Project management process /organisational context	N/A
% Certified or trained project managers	Activities	Organisational context	N/A
% Projects receiving post implementation reviews	Activities	Organisational context	Stakeholder benefit (Square Route)
% Stakeholders participating in projects (involvement index)	Activities	Project management process	N/A

Table 1: CobiT PO10 metrics and their alignment to project success dimensions alignment
Source: (ISACA, 2008)

4.4.1. Project Management Process

CobiT PO10 offer metrics for measuring the projects delivered on time, on budget and according to the requirements. That is the clear linkage to the traditional criteria of project success: time, cost and scope (The Iron Triangle). In a broader sense the quality of the project success can be identified as a part of the stakeholder expectations.

On a process level the project quality is determined by the metric “% of projects meeting the stakeholder expectations”. CobiT PO10 does not offer any specific metric for measuring the customer satisfaction. Thus the assumption is made that the definition of stakeholders used by CobiT also includes the customer. However there are not any evidences for evaluating the customer satisfaction in conjunction with the delivered product. Therefore the metric belongs only to the dimension of project management process.

4.4.2. Organisational Context

The PO10 metrics on activity level “% of projects following project management standards and practices” and “% of certified or trained project managers” are not covered by the literature review but they can be clearly assigned to the organisational context and to some extend to the project management process dimension. It is due to the organisation to manage and establish a project management approach. As stated by some authors that can improve the project performance but can not be considered as a main success factor (Baccarini & Collins, 2004), (DeWit, 1988).

The metric “% of projects receiving post implementation reviews” considerably can be related to the success criterion stakeholder benefits defined in the Square Route concept. The post-implementation reviews facilitate the learning in the organisation. That metric can be assigned to

the dimension of organisational context taking into consideration that post-implementation reviews vary and depends very much on the governance approach in each organisation.

All these findings can be summarized in an extended definition of project success according to CobiT: An IT project is successful when it meets the expectations of the internal and external project stakeholders (on time, on budget and meeting the requirements). In order to achieve that the project is managed according project management standards and practices by a certified project manager with a high stakeholder participation in the project activities. In order to ensure the continuity of the project management approach the project receives post implementation reviews. In comparison with the framework used in this paper CobiT PO10 bears clear resemblance to only two success factor dimensions; project management process and the organisational context. CobiT PO10 underlines the top management support as an important criterion of mature project management process and also as a driver to project success. That criterion has been identified to belong to the organisational context. However CobiT does not provide any metrics how that criterion can be measured. Furthermore top management support is considered by many studies to be one of the important drivers to project success. (Shokri-Ghasabeh & Kavousi-Chabok, 2009) (Kuen, Suhaiza, & Yudi, 2009)

4.4.3. Project product

Based on the findings discussed in 4.3.2 CobiT PO10 does not propose any metrics for evaluating the project product. Other criteria mentioned in literature such as profit or cost efficiency of the product are not covered by CobiT PO10 as well.

Figure 2 provides a Vann-diagram which depicts the criteria of project success utilized by CobiT P10 in accordance to literature and the criteria covered only by CobiT PO10 or literature.

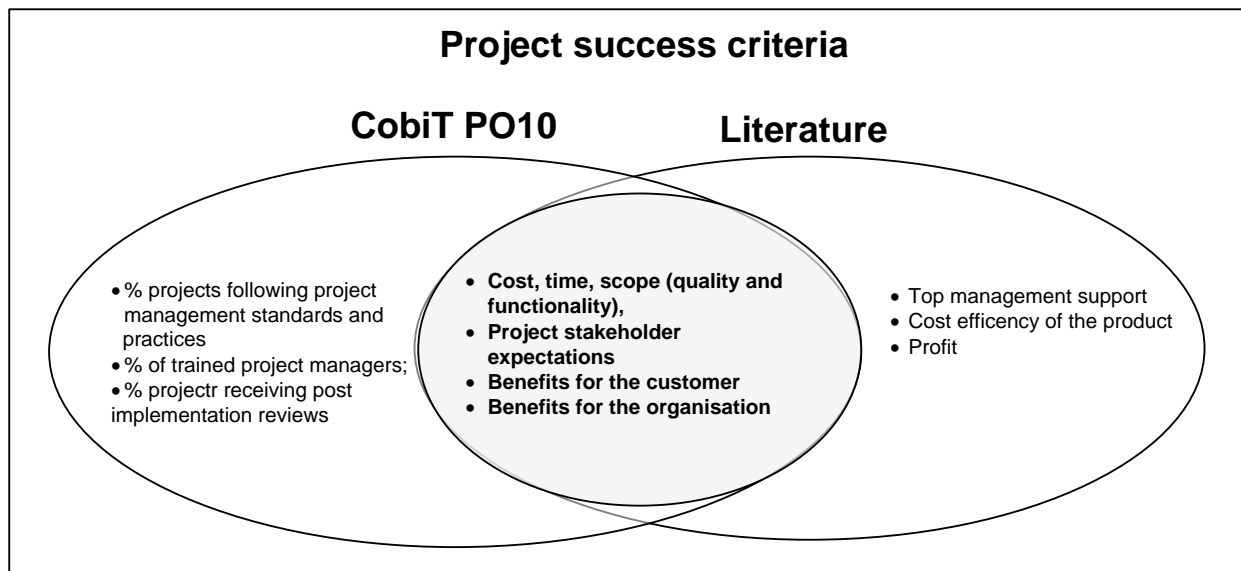


Figure 2: Vann diagram of CobiT PO10 metrics and project success criteria according literature
Source: (ISACA, 2008)

5. Conclusion

This paper explores the success of IT projects comparing the findings in literature and the CobiT PO10 maturity model. As an output of the literature review a framework consisting of three dimensions of factors of project success has been built. The dimensions are project management process success, project product success and organisational context. These dimensions are compared to the PO10 maturity model in order to discover how CobiT PO10 defines the project success. CobiT PO10 covers two dimensions of project success; the project management process and the organisational context. According to the PO10 maturity model the organisational environment has a big influence on the stage of development of the project management process. CobiT PO10 indicates the importance of top management support for mature project management. Top management support is identified to be one of the main criteria leading to project success by many empirical studies (Shokri-Ghasabeh & Kavousi-Chabok, 2009) (Kuen, Suhaiza, & Yudi, 2009) (Baccarini & Collins, 2004). CobiT PO10 does not provide any metrics for evaluating the top management support for IT projects even though that criterion is main part of the maturity model.

The third dimension of project success according to the project success framework – the project product is not covered by CobiT PO10. Managing projects in an efficient and effective way helps to meet the project objectives but either ensures the quality of the project product or that the project is meeting the business goals. Furthermore some studies identify that product success has an impact on project success but often can not be evaluate at the end of the project.

Product success and its correlation to the quality delivered by the project are not evidently measured by CobiT PO10. Indeed CobiT PO10 deals with the stakeholder expectations but not explicitly states that in conjunctions with the quality of the project product.

Due to that fact the conclusion can be drawn that the utilisation of CobiT for measuring the IT project success is not satisfactory. CobiT and in particular PO10 can be used as a reference providing a comprehensive overview over the maturity of project management process and the status of the project portfolios. For measuring the project success the CobiT framework should be enhanced with criteria for evaluating the quality of the project product and the time dependences between project management process and project product. In addition the well defined organisational context should incorporate an extended set of criteria considering the organisational size, percentage of large projects and project governance methodology for evaluating project success in both the short and the long term.

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