Defensive reactions as potential reasons for IT project management failures

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ABSTRACT

The aim of this paper is to establish how much empirical research is conducted on defensive reasoning or defensive reactions as possible reasons for IT project failure. In order to address this objective a systematic literature review was conducted. Only a few articles were identified that made specific reference to barriers in organisational social structures that prevent organisational learning from taking place. It is argued that defensive mechanisms on an individual level and defensive reasoning on a team or organisational level play a major role in IT project failures mainly because it prevents people from learning from their or other's mistakes. In order for learning to take place, organisational defense routines should be minimised so that real reasons for project failure can be identified and addressed in an innovative and constructive manner.

INTRODUCTION

Applying the principles of sound project management is becoming key in the successful deliverance of IT projects. But not all IT projects are completed successfully, which also includes within timeframes and within budget limits. It has become an important research aim for IT project management scholars to establish why IT projects fail (compare [1], [2], [3]. Different approaches are followed and different models were developed to establish reasons for IT project failure. The aim of this systematic literature review is to establish what empirical research is conducted on defensive reasoning or defensive reactions as possible reasons for IT project failure. These findings may enable IT practitioners to establish models to manage reasons for project failure more systematically. The contribution of this study resides in the expansion of current models that explain reasons for IT project failures. The importance of the study can be ascribed to searching and exploring avenues that have not been explored before in the IT project management literature.

Theoretical orientation

Defense mechanisms. Defense mechanisms is a term that was initially introduced by [4], [5] and the concepts were later refined by [6]. Ego defense mechanisms are used on an individual level "to keep painful or socially undesirable thoughts and memories out of the conscious mind" [7]. Typical ego defense mechanisms may include denial (refuse to admit), projection (shifting blame) and rationalisation (distorting facts).

Defense mechanisms such as these may be used by individual IT project team members to shift blame or distort facts and consequently fail to learn from their mistakes.

Defensive reasoning. [8, p.10] introduced the concept organisational defenses and explained that "defensive reasoning occurs when individuals (1) hold premises the validity of which is questionable yet they think it is not, (2) make inferences that do not necessarily follow from the premises yet they think they do, and (3) reach conclusions that they believe they have tested carefully yet they have not, because the way they are framed makes them untestable". IT project teams may collectively engage in defensive reasoning in fabricating premises for explaining IT project failure.

'Failing to learn and learning to fail'. [9] in their paper explain how failure can be used to learn as well as to improve and innovate. They argue that it is unusual for organisations to learn from their mistakes, because barriers in the technical and social systems prevent that collective organisational learning can take place. According to them managers should first be taught to remove these barriers for organisational learning to take place. The next section provides an overview of literature in respect of IT project failure.

Literature review

Projects are the vehicle to implement corporate strategies and are therefore perceived as change agents [10], [11]. The purpose of IT projects should then also be to implement IT strategies which form part of the larger group of corporate strategies [12] However, IT projects are notorious for their low success rates [13] [14], which raises the question whether they can actually be perceived as vehicles to implement IT strategies and the associated changes. The reality is that IT projects are wasting valuable resources such as money and human resources. In the current economic environment, corporates cannot afford to have projects that are not performing as they should.

Two questions spring to mind. The first question is: what are the current success rates of IT projects? Secondly, how is and should the success of IT projects be measured? Various studies on IT project success have been done and table 1 provides an overview of the results of these studies.

Table 1. IT project success rates [14]

Classi-fication	'11	'12	'13	'14	'15	Average
Successful	29	27	31	28	29	28.8

The results depicted in Table 1 paint a bleak picture, highlighting that on average almost a fifth of all IT projects are failing, with a third perceived as successful. The results from this longitudinal study also highlight that there has been no improvement or change over the last couple of years. This raises the question whether IT project success is actually measured correctly.

Historically, projects were measured based on the triple constraints, i.e. time, cost and scope. This measurement formed the basis of all project success evaluations and a slip in any one of these three constraints implied that that project was perceived as a failure. Research in the last decade or so challenges the triple constraint as the only way to measure project success, never mind IT project success. [15] as well as [13] investigated the phenomenon of project success and conclude that there has been a shift in the way that project success is measured. Project success is measured based on two aspects. The first aspect is to measure the success of project management itself. This measurement determines whether the final IT product or service was delivered within the constraints of the project. The constraints might still be the triple constraints but extended to include constraints such as quality; other constraints can also include security criteria or meeting the requirements of the product.

The second aspect determines the impact that the product or service has on the organisation. The ideal would be that the IT project actually contributes to the realisation of the IT strategies. IT projects are executed to realise some or other strategy and the ultimate success is when the IT project's deliverable realises the strategies. There should be a balance between project management success and product success. When cost expenditure and time delays have too much of a negative impact on the success of the product itself, then the project must be perceived as a failure. When the opposite is true, i.e. the product success outweighs the losses of project management, then the project should be perceived as successful.

Given the low success rates of IT projects, chief information officers (CIOs) should ask what factors contribute to project success and how these factors can be exploited to increase IT project success. Table 2 highlights two independent studies' results on factors that contribute to IT project success.

Table 2. Factors contributing to IT project success

Ranking	Prosperus Report [24]	Chaos Report [14]
1	Requirements definition clarity	Executive sponsorship
2	Communication between team and customers	Emotional maturity
3	Communication between project team members	User involvement
4	Business objectives clarity	Optimisation
5	Understanding of users' needs	Skilled resources
6	Project manager competency	Standard architecture
7	Executive support	Agile process
8	Handling of change	Modest execution
9	User involvement	PM expertise
10	Change control processes	Clear business objectives

It is clear from these studies that there is not really consensus on which factors contribute to IT project success. One factor highlighted by The Standish Group is the positive impact of agile processes on IT projects. According to their studies, agile projects are on average more than 28% successful than IT projects that follow the more traditional waterfall method. The failure rate is reduced by 20% if the agile method is used instead of the waterfall method.

One of the underlying principles of Agile is communication which has been identified as a factor that might improve project success. Communication in an Agile environment is achieved through a daily 15 minute stand-up meeting. The purpose of this meeting is to cover the following three questions: (i) What was accomplished since the last meeting, (ii) What are you working on until the next meeting and (iii) what are the things that are getting in your way from doing your job? One of the underlying principles is that there must be honesty and openness amongst the team members [16].This is not always the case as some individuals might make use of defence strategies to cover some issues or mistakes [17].

RESEARCH DESIGN
Research approach
This paper was compiled by following a theoretical (non-empirical) approach proposed by [18]. More specifically, a systematic literature review was conducted with the aim to identify the current state of empirical research in respect of defensive reactions as reasons for IT project failure (See method sections of [19], [20] as examples of systematic literature reviews). Systematic literature reviews are inductive in nature and according to [18] Mouton (2001) an important criterion to assess the quality of the review.

Research method
Location of the data
IT project management has become an important research topic in recent years [21]. More importantly, a host of research studies are reported on reasons why IT projects fail, but seemingly very few allude to defensive reactions as possible reasons. A systematic search process was first conducted by using Google followed by a search on the most important search portals such as EBSCO Host and from this portal several data bases were subsequently searched. These data bases were sufficient to identify the most recent empirical studies

in terms of width and depth on the defensive reactions as reasons for IT project failure.

The search was mainly focused on research published between 2006 and 2016. Only a few 'ever-green' studies, completed prior to 2006, which still provide sound textual data for interpretation will be included.

Data gathering methods

Data (in this case textual data) was gathered using the said databases provided by the University of Johannesburg's library. The data was searched using the following key phrases: 'defensive reactions / routines as reasons for IT project failure'. Reference lists of articles were reviewed for additional publications that may not have been properly indexed and not found via electronic searches. Three selection criteria were used for selecting articles for this study: (1) they had to be written in English or a translated version had to be available; (2) the articles had to examine any of the constructs under investigation; and (3) the article had to either directly or indirectly address at least one of the research questions asked in this study.

Research procedure

A comprehensive and well integrated literature review is essential to any study (Mouton, 2001). Such a review provides a good understanding of issues and debates in the area of research, current theoretical thinking and definitions, as well as previous studies and their results.

This non-empirical (theoretical) research study was conducted in two phases. Phase 1 entailed the compilation of the searched literature on all the relevant constructs and Phase 2 included a systematic textual analysis of these listed articles in order to establish if any empirical research was conducted on defensive reasoning as a potential cause of IT project failure.

Data analysis

The relevant studies were selected after each search, using the sources and three criteria indicated above. The constructs identified in the study will be presented in table format in order to compare the findings of the different studies. The purpose is to create an overview of present literature on the constructs under investigation, and to identify the appropriate defensive routines as reported in the empirical research literature.

FINDINGS

The results of the database interrogation show no significant results. It is evident that these databases do not offer any current literature that covers the topic of defence mechanisms within IT projects. Only one article [22] touches on emotions as a factor that can contribute to project success. It does not do an in-depth analysis of the defence mechanisms to determine whether these play a role.

It must also be noted that the notion of individual learning and organisational learning are not addressed in current literature focusing on IT project success. Lessons-learned is a process within all the project management standards but this process is not necessarily applied in IT projects [23] This implies that organisational learning does not take place.

DISCUSSION

The notion of IT project success and what it constitutes and even worse, what the root causes of IT project failures are, still do not yield a valid answer. Various research has tried to uncover the truth but there is still no clear answer. This study was an attempt to establish what empirical research was previously conducted on defensive reasoning as a root cause for IT project failure.

Focusing on this phenomenon high-lighted two aspects: the first aspect focuses on the technical side of IT projects and try to determine if best practices are applied, are there other ways of doing things or even not applying project management principles at all. The second aspect focuses more on the people-side and organisational (psycho-social) factors that may have an impact on individuals within the project team. Various human-related aspects have been researched including competencies, trust and motivation, but not defensive reasoning per se.

None of the research actually tried to uncover whether there is a deep underlying factor that cause IT projects to fail. This article highlights the fact individuals within a project team might resort to various defence mechanisms to shift the blame or fail to acknowledge real facts. This causes then that individual learning does not take place and it also does not escalate into organisational learning. The implication is that project teams are still not better of even after decades of research into IT project failure.

It is recommended that a broader and a phasic approach should be taken on proposed models for understanding IT project failures. The first phase entails the Planning Stage; the second the Execution Stage; and thirdly the Post-delivery Review Stage. A systematic reflection and analysis of how similar IT projects were planned, executed or reviewed and what mistakes were made during each stage, can shed light on 'things' that went wrong, but that team members or managers do not wish to acknowledge or take responsibility for. Creating a team climate or culture where team members 'feel safe' or are not threatened by direct or factual feedback can potentially reduce defensive reasoning around real causes of IT project failures and result in a constructive engagement with these factors.

There is a large void in the body of literature on IT project failures in this regard. Future research should consequently focus on in-depth analyses into IT teams to fathom how the various defence mechanism are used and whether different learning strategies will have a positive impact on IT project success.

REFERENCES

References are available upon request.