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PROJECT MANAGEMENT IN INFORMATION SYSTEMS - ART, SCIENCE, OR MAGIC: Defining criteria for testing IS Project Ideas

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Defining criteria for testing IS Project Ideas

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Abstract

It seems inevitable that sometimes projects will fail. Project management and project management methodologies exist to improve the likelihood of success, but delivering change in a dynamic environment is not without risk. Research says that a significant number of projects fail, particularly in information systems. It is recognised here that poor project management and/or methodology may not be the only causes when failure occurs. Areas outside the project control and even before project initiation could also be at fault, especially if it is based on a flawed concept. Is it possible that this may be the result of poor root cause analysis and an incorrect diagnosis of what the organisation needs to change? This goes beyond the requirements analysis, to the very beginning to the idea. In addition to the art of the project manager and the science of the project management methodology then, there is a third factor that should be recognised and analysed; the "magic" of the methodology used to generate the magic of the initial idea. Project management methodologies codify what is known about how to run a project; they provide governance and procedure. Talented project managers manage delivery of the plan whilst managing the attendant risks and issues. But the process seen as project management does not extend to include validation of the methodology applied to the idea behind the project. This paper speculates that the capability of the idea, measured in the rigour applied to the root cause analysis and the derivation of appropriate fix logic (the project mandate), is what needs to be tested by the application of a pre-project methodology.

Keywords: Projects, Project Management, Project Management in Information Systems, Project Management Methodology, Root Cause Analysis in Project Management

1. Introduction

Project Management, as a profession and the subject of academic study, has gained increasing recognition over the last forty years. Project Management, of course, has always existed, there are now several named and globally recognised methodologies by which to manage projects and our perceived understanding of project management is better than ever before. (Alexandrou, 2010) Project management in Information Systems (IS) has developed out of the realisation that projects need a common management process as individuals and organisations collaborate on increasingly complex solutions – in order to keep the people and project on track and to improve the likelihood of repeating successes and avoiding failures (Northumbria University, 2009; Editor C, 2004-2009). The first author of this paper is a senior lecturer in Information Systems and has 10 years experience in project management, the second has worked as programme and project manager for 21 years and is now Senior Planner with one of the largest public sector organisations in the UK. Therefore this paper posits from both the academic and practitioner perspectives.

2. Project Management

The approach to project management that is taken in this paper is that the 'black art' of project management can be grounded in sound ideas that are measurable in their effectiveness and that the idea itself is measurable. In this section we examine project failure, and the idea that project management may be indeed be an art, science or even 'magic'.

2.1 Origins of Project Management in Information Systems

Project management can be a particular issue when developing Information Systems, that is, systems that attempt to capture the real world of data and turn it into useful information. The goal is to control the project, and also to manage the people implementing the project. (Cadle and Yeates, 2007; Tesch et. al. 2007)

The history of software development trends is difficult to document, but one view is that it grew out of the habit in the 70's and 80's for programmers and other developers to 'charge what the market will bear', and to work as if they knew the magic, and others did not. They often worked immethodically, with unpredictable results that often could not be duplicated, and perhaps most importantly, they made promises they could not keep. This has had a long

term impact on the view of IS professionalism ever since (Fox et.al. 2005; Lamsweerde, 2000; Niederman; 2005)

2.2 Doomed projects

Despite the existence of numerous project methodologies with which to govern a project, a directory full of project consultants vying to help run the project, and a plethora of websites dedicated to project success, projects regularly fail, often in very public and dramatic ways. (McManus and Wood-Harper, 2008; Simon, 2009) Why should this be the case?

The truth is that all the good governance, expert advice and best practice available will not save a flawed idea from being just that, and a project predicated on a flawed idea (mandate) should be doomed to failure. Indeed good governance and project management should help speed its demise for the good of the organisation. (Office of Government Commerce, 2005) However, even a brief search suggests that all too often these flawed ideas slip through the net and then organisations seem reluctant to opt for premature closure, often because of the stigma falsely attached to those involved when a project is stopped and the investment written off (Dowel, 1996; Keil et. al, 2007; Park et. al. 2008).

Of course, a good or even great idea, badly project managed can result in partial or complete failure. (McManus and Wood-Harper, 2008) This paper does not question the need for a skilled project manager, or an effective project management methodology; considerable research has already been done in these areas (Brock et. al. 2003; Beise, 2004; Belzer, 2001; Gheorghiu, 2006; McManus and Wood-Harper, 2008; Charvat, 2003; Addison and Vallabh, 2002; Rivard, 1999). The challenge is to have a sufficiently robust initial process to filter out the flawed ideas before they are turned into a project mandate, or are authorised for deployment. Then, subsequently, to deploy good governance and processes to turn a good idea into effective change, which is well deployed. Project management methodologies start after the mandate is already in place and therefore with an assumption that the project is based on a sound idea; it is not that the mandate is not discussed in methodologies, it is just not within their scope (Office of Government Commerce, 2005; Bundesrepublik Deutschland, 2004; Alleman, 2002). It is no surprise then that so many projects fail, when organisations may be overlooking the need to apply equal rigour and method, not just to the management of the project, but more importantly before that, to the generation of the idea behind the project mandate.

Left to such chance, the difference between success and failure may seem impossible to detect at the outset of the project. Despite applying good management and sound methodology, success can still evade the organisation. (Standish Group, 2009) Is there a trick to success or are some organisations just lucky? Most importantly, can we design our processes to recognise a good idea or reject a flawed one?

Not all projects that fail were doomed to do so; rigorous application of a project methodology, robust project management and effective learning will help ensure a good idea becomes a successful project. (Alaka et. al., 2005) But, all too often it may be the case that a failed project has its roots not in the way it is deployed, but in the way it was conceived and the rigour applied to that process. In those circumstances, projects that fail truly were doomed from the start.

2.3 Project Management as Art

It may seem illogical for project managers to consider their skill-set an art given that their role is to impose a 'scientific' methodology for the control of the project. Nevertheless, the role does have elements of 'art'; in the same way that teaching, healthcare and painters may be said to have a gift or a calling – some people seem to have an array of personal qualities for handling the complexities of managing a project (Müller, 2009).

Successful project managers (that is, those who deliver successful projects) may or may not recognise themselves as displaying such artistry; but it could be argued that these personal skills are not easily taught or learned through the experience of others – just like the work of an artist. (Müller, 2009) As in other art forms, there is a wide variation in what individuals are able to achieve – 'genius' is rare, but having some talent can be quite widespread. Being less talented does not mean there is no role to play and does not rule out success, indeed many artists, in opposition to their critics, are both successful and wealthy! (Editor ArtCulture, 2008).

There is undoubtedly though an accepted relationship in art between talent and success. However, relying on being able to discover or buy talent isn't always a sensible strategy in business. Such talent is always expensive and not always available when you need it (Neiderman, 2005; Taylor and Woelter, 2009). So desirable as it may be; what organisations

really need to do is to convert as much of that 'art' into 'science', a discipline that relies less on innate talent and more on the ability to learn and replicate a formulaic (if in itself imperfect) method. One of the goals and reasons for the development of project management methodologies in the last forty years may be in order to reduce the role of project management as 'art' and to standardise the project management methodology as 'science'. However this could have lead to an over-reliance on a project management methodology, and less emphasis on other aspects of the project and the project management process. (Ward, 2006)

2.4 Project Management as Science

Applied project management science is bound up in the variety of project management methodologies that exist, both those that are generally applicable, such as PRINCE2 and industry specific approaches such as GRIP in Network Rail (Office of Government Commerce, 2005; Network Rail, 2007). They distil what is known about managing projects into processes and structures around which the project governance can be built. It is widely believed that if the participants are trained in appropriate project methodologies, then the outcome of each project will be improved and the likelihood of success increased (McManus and Wood-Harper, 2008; Standish Group, 2009).

With more than half of projects still failing to meet some or all of their success criteria, clearly a good project methodology is not a 'silver bullet'. Indeed, the project success rate has actually dropped each year since 2007. (Standish Group, 2009) This trend would indicate that, even with the time and research invested in the understanding of all aspects of project management, there are some substantial gaps in project understanding. Methodology does allow us to talk a common language when discussing the project. It helps us set up the project organisational and governance structures quickly and assign roles and responsibilities consistently. Methodology provides a basis for structuring complex projects and establishes the cues and clues that are needed to trigger action from stakeholders. (Office of Government Commerce, 2005; Bundersrepublik Deutschland, 2004; Alleman, 2002) And yet there is still clearly a less than one-for-one relationship between understanding and applying a project management methodology, and the successful completion of a project – it fills in only part of the picture but, even with our talented project manager in charge, does not raise the odds of success as much as anticipated.

2.5 Project Management as Magic

The adjective 'magic' can be defined as 'producing extraordinary results, as if by magic or supernatural means' (Websters New College Dictionary, 2009). It suggests an outcome the source of or route to which is beyond our understanding and control. It may therefore seem a controversial or fabulous word to use in a professional context. It is used here to describe 'those factors that contribute to the success or failure of a project, which are neither the result of the talent of the project manager (and their team) or the adherence to an agreed methodology'. Magic is a controversial word in this context; 'luck' may have been just as controversial if used in this context.

Napoleon apparently thought that 'luck' was a more desirable trait in a general than talent (Schneider, 2008). The phrase, 'more by luck than judgement' tells us all that sometimes success comes without planning and methodology being involved. There is often a thin line between success and failure in projects; it is thin enough to ensure that many IS projects gain business case authorisation and then fail anyway (Standish Group, 2009; Sauer et. al. (1999) ; Addison and Vallabh, 2002) This thin line is poorly understood by those who sponsor or have a stake in projects – which is often where the idea originated (Gheorghiu, 2006); otherwise fewer projects would get the authorisation to begin with, or more project stakeholders would be more deeply concerned.

The project manager usually shoulders the burden in the short-run for project failures, delays, overspends or other deviations from the plan. If the project goes well it can sometimes feel like the project manager's value is under-stated; 'that's their job' after all. Yet when things go wrong, even if the reasons are out of the control of the project manager, the project manager will often have to accept the responsibility and take the blame (Gheorghiu, 2006).

3. Measuring an idea.

So what if 'magic' or 'luck' best describes a third necessary component of every project – what does it look like and why should we be interested in measuring it? More importantly, can we predict or measure the amount of 'magic' needed by a project to be successful? What every project sponsor needs, we contend, is the ability to more accurately measure the strength of the original idea on which the project is mandated. If the extent to which luck plays a part can be reduced more accurately then it can be predicted how likely it is that the

'extraordinary results' required will be achieved. Only then can improvement happen, not only to the outcome of the next project but also to thicken the purported line between success and failure, by helping to ensure that only projects with a genuine basis for success are authorised.

3.1 How do we define an idea?

What is needed is a simple definition of an 'idea' in the context of the project and its impact on the likelihood of success or failure as a basis for what to measure. Whilst there are many philosophical debates around this, what is needed is something that be used to try and quantify the initial idea. It should ultimately encompass what the project has been set up to deploy and why that particular solution has been chosen. It is contended that at the origin of every project idea is a root cause, and a resultant fix logic on which the project is then based. It is the rigour with which the fix logic is determined that ultimately decides whether the project is a potential success or a doomed from the start to failure.

The concepts of a root cause and fix logic will be familiar to anyone who has used Root Cause Analysis (RCA) or similar approaches to problem solving (George et. al. 2005) There are many tools and techniques associated with RCA; and specific ones need not necessarily to have been applied. But the argument could be drawn that the quality of the idea depends upon the quality of the work and the amount of effort that has gone into its generation. The very existence of such an approach would give more confidence in the resultant project; better still if it provided the ability to measure the amount of work and effort extolled.

3.2 Purpose of measuring an idea

Science in projects needs improving, especially during the initial mandate, concept and business case authority phases. This is particularly so as the first two steps sit largely outside existing project methodologies. With that we can;

- Improve the knowledge and understanding of our stakeholders,
- Reduce focus and reliance on the talent of the project manager,
- Let the methodology do its job to provide structure and processes with which to manage deployment, and
- Authorise projects for deployment with greater surety that they will be successful.

The purpose then is to bring science (methodology) into the phase of the project not normally covered by existing project management methodologies, as we discuss in the following sections. It is a pre-project methodology that begins the moment we think we may need to change something, and crucially, starts before we decide what that something is and how we will do it. It is the methodology that will give us the project mandate, which is the trigger for every project.

4. Project Management Methodologies in IS

Project Management has emerged, as a profession and a study in Information Systems, in the last thirty years. More recently project management methodologies have been a well known aspect of this area (Office of Government Commerce, 2005; Bundersrepublik Deutschland, 2004; Standish Group CHAOS Manifesto, 2009). Project Management in Information Systems has arisen out of a need to organise – there is recognition that a large project needs specialist expertise in order to keep the people, the project and the budget on task. (Taylor and Woelfer, 2009) By applying guidelines and rules, organisations seek to control their projects, with the expected outcome that the project will be a success. The application of project management methodologies has resulted in a decrease from the 82% project failure rate previously understood (Standish Group, 1995). Here we examine some of the more widely used methodologies, although many organisations adapt or develop their own versions of these developed for their specific environment.

4.1 PRINCE2

PRojects In Controlled Environments (PRINCE) proposes that projects are governable according to a set of rules and procedures if applied in a consistent, timely fashion. The eight controls and eight processes in PRINCE2 are deemed to be scalable to smaller projects, and PRINCE has become essential if you are a Project Management professional working in many Ministry of Defence (MoD) projects or National Health Service projects, and increasingly in the private sector in the UK and internationally. (Office of Government Commerce, 2005)
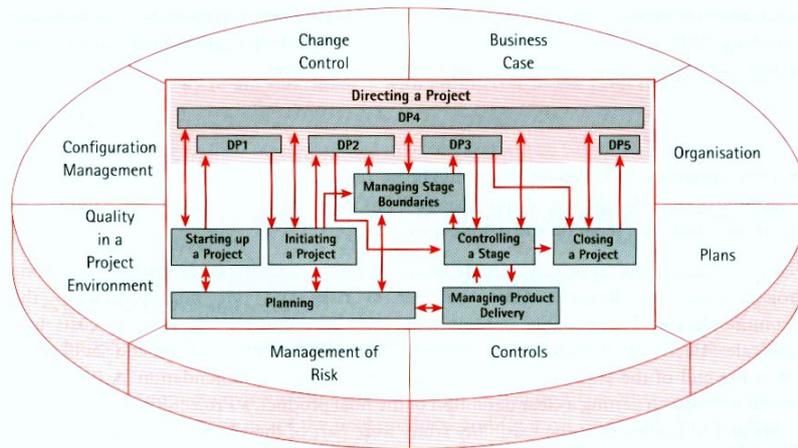
Figure 2.4 PRINCE2 processes and components

Figure 1: The PRINCE2 Process and Components Model (OGC, 2005)

PRINCE was developed by the Office of Government Commerce for use in the Ministry of Defence (UK) in the late eighties to control software development and IT projects, but has since spread to such diverse areas as construction, banking, scientific study, and health (Haugey, 2010) With such saturation, and such a huge following of people, it is no wonder the methodology is deemed essential, but the authors argue that, although this professional level qualification certainly heightens the understanding of the issues inherent in managing a project, it is neither a silver bullet for project success nor as all encompassing as is often needed.

4.2 Agile Project Management

Unlike PRINCE2, the Agile method of project management is highly iterative and involved, but it is not so rigidly controlled by paperwork or a management process. It involves six principles that are more akin to philosophy, and because it specifically does not use traditional management techniques, it can be highly successful, but very difficult to bring into the organisation, precisely because it is not proscriptive or rigid. (Alleman, 2002) It encourages communication amongst the stakeholders, even advocating an on-site member from the customers' premises, to keep the lines of communication open. It still requires that the idea, business plan, and indeed planning, all occur – but in a different space. It does not test an initial idea, but if allowed to work, can bring out the development problems early in the process. (CCSpace, 2003-2008) Problems in a development environment will almost certainly arise if the team are mandated to do something that they do not think is a good idea. Without stakeholders, managers or developers having a way to test the idea before beginning

development, then this suffers from the same potential problem as PRINCE2 – if it is a bad idea, an organisation still has to commit resources to it to find this out.
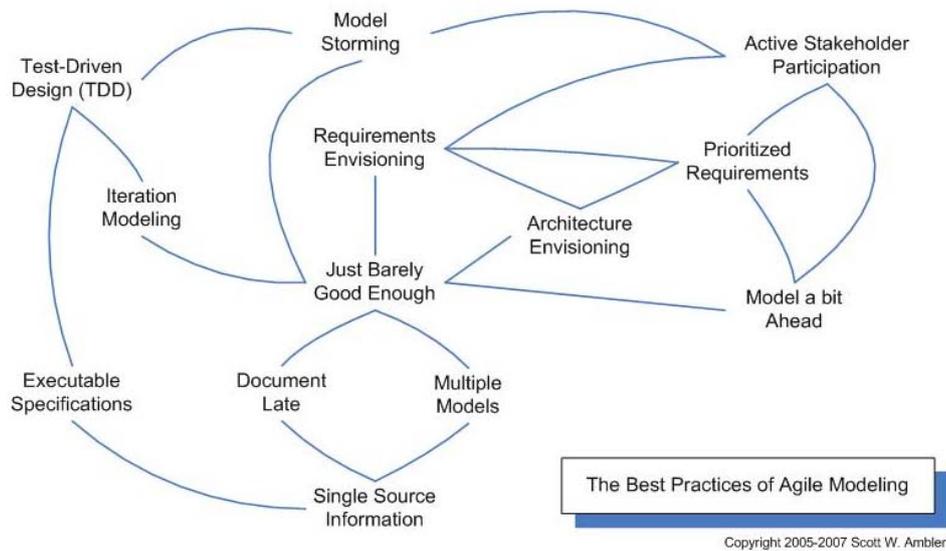

Figure 2: The Agile Process Model (Ambler, 2007)

4.3 V-Modell

The German gold standard for Project Management in software development and IS is V-Modell XT. Unlike PRINCE2, this is still used primarily as a software development methodology, but has in common the need to manage and implement effective change. As in the above examples, it has a structured and defines set of activities and dependencies to control the process of software and systems development. Not unlike PRINCE2 and PMP, the model covers the part of the development that happens after the idea has been accepted and does not evaluate the idea itself within the methodology, although it does assume that a robust system of evaluation has taken place. It should, however, lead to the cancelling of flawed ideas, largely because the process is so iterative, a flawed idea would be expected to scarcely survive the process (Bundersrepublic Deuteshland, 2004).
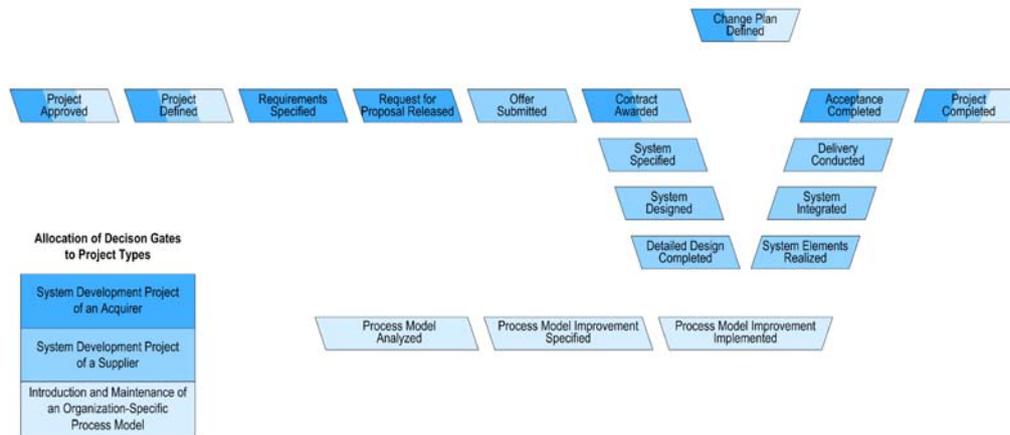
Figure 3: Adapted V-Modell Process Diagram (Bundersrepublic Deuteshland, 2004)

4.4 Capability Maturity and Implementation Models

Another set of philosophies has also entered the collective project management consciousness; the Capability Maturity Model (CMM). Originating at Carnegie Mellon Software Engineering Institute in 1987, the CMM was developed over time to measure the ability of an organisation to meet it agreed contractual obligations by allowing an organisation to assess and demonstrate its ability to keep the promises it makes. This may seem like something that should be self-evident, but there is evidence to indicate that companies sometimes take on contracts that they cannot fulfil. (Editor B, 2010)

One of many examples of this type of problem comes from within the UK National Health Service (NHS). The consultancy, Accenture, signed a ten-year contract in 2003 to develop and roll-out part of the then largest IT project in the world called Connecting for Health, developed by the NHS. Accenture found that the project was more complex and as a result less lucrative than anticipated, and they took the decision to withdraw from contract after three years, having only installed less complex elements of the full system in doctors' surgeries. (Ballard, 2006) This has both raised the cost of the project overall for the NHS and impacted on the roll-out schedule and overall timeline. (Savvas, 2006) The impact of this apparent lack of capability is still being felt years after the withdrawal of Accenture and all those now involved have had to recognise the true complexity of the work involved. Its successor, CSC, has also missed deadlines and has experienced delays. (Ballard, 2006; Kabelnet, 2007) It is a huge undertaking with a budget equal to that of employing 26,000 doctors – full time – for ten years, so there is much at stake for the NHS. (Brookes, 2006)

4.5 **Project Management Capability Maturity Model**

Project management and business management often find the need for parallel areas of understanding, and maturity models are no exception. As projects fail even when companies are demonstrated as being "capable", it is recognised that it is not enough, as a business, to say a project is feasible – an organisation can now, with similar structures – measure its ability to carry out large projects through capable project management (Crawford, 2006). As with the CMM, the Project Management Capability Maturity Model (PMCMM) works on the current level of understanding, and clarifies ways that organisations can work their way through to seamless project management. The PRINCE2 Maturity Model does much the same thing, but perhaps with different emphasis. (Office of Government Commerce, 2006) These should help to ensure successful project deployment, but without testing the capability of the idea it may be missing the point. The interesting question here is can the capability of an idea on which the project is based be tested?

4.6 Testing a project

Humans are naturally "project-prone". That is, they are likely to choose to implement change via a project, and it follows that the goal of a project then is to successfully deploy change. But if this is the case, why is success apparently so elusive? One possible answer is that some projects should never have been attempted in the first place. They were simply defective ideas, or at best, an idea that is out of place and cannot hope to match stakeholder expectations of it. The question then becomes, can this be measured? Can a test be applied to an idea before making other significant investments in time and resources?

It is recognised that projects fail for many reasons and that there are many factors which affect an IS project, for example; political, economic, social, technological, legal and environmental (PESTLE), both individually and in combination (McManus and Wood-Harper, 2008). But there is a significant point of failure that may be being overlooked. Some projects it seems were doomed to failure from the moment they were commissioned. If it is possible to identify when that happens and why, then it might be better to test not the capability of the company to deploy the project, but, the capability of the idea to deliver the desired outcome. Once the idea has been tested and determined to be robust in itself, all other project management "norms", the art and science, can be applied.

5. Can we measure an idea?

Having established that many methodologies deliver the project but start at the project initiation stage which is long after the original idea has been developed, is it then feasible to even consider measuring a mandate and how might that be done? In this section we examine the possibilities.

5.1 Investment appraisal

Traditionally, the task of assessing the business case for a project is carried out using a form of investment appraisal. Typically this will be a finance-led process, with each organisation or business setting its own thresholds or hurdle rates by which to judge whether a project should be given the go ahead for deployment. As such, financial hurdle rates tend to take centre stage, with measures such as Net Present Value (NPV), Internal Rate of Return (IRR) and Payback all a common sight as part of the approval process (Vanhoecke et. al., 2001).

Of course financial measures are not the only tests applied to potential projects; software projects may have to provide sample lines of working code that have been tested, building projects may have to present the results of site surveys to show that a proposed building is feasible; the tests are likely to be industry specific. But crucially, it is suggested that by the time we are preparing, presenting and appraising a business case; it has already been decided that the idea behind the project is good! The business case is the advocate of the idea; it puts forward the scope of what the project will achieve and describes it in terms of time, cost and quality. The business case quantifies the benefits, financial and non-financial, it highlights potential risks and issues that the project will face and describes at a high level how the project will be deployed (Office of Government Commerce, 2005). The purpose of the business case is to allow the organisation to decide whether the project is something it will invest resources in to deploy, when compared with the other projects or alternatives uses those same scarce resources could be used for. The investment process is a 'beauty contest', the best business cases get authorised whilst those less attractive to the organisation are rejected. So the business case would be self-defeating if it raised too many questions about the project idea or raised doubts about whether the idea was practical.

In IS tests are carried out: pilots and prototypes, test-rigs and simulators, load tests and trial sites, but are these testing the idea or just the deployment? If the test fails, do we question the

idea or the way it is being deployed? The time to test the idea is before the build and test of the solution. Testing an idea must sit in a phase that exists pre-project and pre-business case, what some organisations refer to as the 'Design' phase. Is this where ideas are tested?

5.2 Why test an idea?

A talented project manager and a sound project methodology are not enough to guarantee success if the original idea was fatally flawed. But an untested idea that is believed to be good, may lead to repeating the same mistakes again and again. Consider table 1 (below) of possible outcomes if we consider that there are three factors determining the outcome of a project; project management, project management methodology and the project idea itself.

Talented project manager: the 'art'	Sound project methodology: the 'science'	Good project idea: the 'magic'	Outcome of the project	Conclusion drawn if we believe the idea was good
✗	✓	✗	A well documented failure that we should learn from	Bad project management. Let's get a new project manager and try again
✓	✓	✗	Early project closure and a 'war story' to learn from	Bad project management or just bad luck. Let's try it again.
✓	✗	✗	Early departure of the project manager or a 'heroic' failure	The lack of a methodology let us down. Let's invest in one and try again
✗	✗	✗	A disaster we don't learn from	What went wrong? Let's try it again.
✗	✓	✓	A well deployed project that is repeatable or failure with clear accountability	
✗	✗	✓	Lost opportunity that we may never realise has been missed	
✓	✗	✓	A successful project that can't be repeated	
✓	✓	✓	The 'perfect' project?	

Table 1.   A matrix of potential project outcomes assuming a combination of 'art', 'science' and 'magic'

Management and method have an impact on both the quality of deployment and likelihood of success (Belzier, 2001; Gheorghiu, 2006; Rada et. al., 2000; Rost, 2004) but no amount of either can turn a bad idea into a good one. More importantly, if there is no way of determining that the idea was what was wrong with the project, then it is more likely that the project

management or method will be blamed, and often there is an attempt to do the project again, committing and wasting further resources and further risking the reputation (at least within the organisation) of the project manager and the project management methodology.

5.3 Design

In larger organisations, special design teams may have a lead responsibility for generating new ideas to solve actual, perceived or potentials problems. (Bichard, 2008; Finney, 2003) They fulfil a vital role to continually look 'over the horizon' and propose how the organisation should react to its changing environment. All businesses should welcome new ideas from wherever they're generated in the organisation, but there is a wide variation in how good (or bad) they are at tapping into that internal knowledge and leveraging it for the benefit of the organisation as a whole (Argyris, 1993).

However, from the point of view of wanting to improve project outcomes, the goal has to be not only to generate new ideas but also to qualify them. Crucially, this qualification process has to take place before an idea is advocated via a business case for deployment as a project. Given that in this phase organisations are generally unwilling to commit significant amounts of resources, it should use a common approach so that different ideas can be tested using the same approach, without significant investment in the prototypes and test rigs we will use later to test the deployment solution once we are convinced the idea itself is sound.

5.4 Research

A research proposal is currently being developed to explore the issues laid out in this paper. The proposition does not include new ways to improve project manager capabilities or how to improve the deployment methodology or even to determine which the 'best' methodology. is It is believed that insufficient focus and 'science' has been applied to recognition and testing of initial ideas, the start point of every project, the moment when every project is the same. If this can be described and a test formulated for the original idea then it could be applied at the conception of every new project, not just those in IS. The proposed concept would:

- Improve the knowledge and understanding of our stakeholders,
- Reduce focus and reliance on the talent of the project manager,
- Let the methodology do its job to provide structure and processes with which to manage deployment, and

- Authorise projects for deployment with greater surety that they will be successful.

6. Conclusion

Traditional approaches to project management imply an assumption that the idea, encompassed in the project mandate is sound by excluding it from the formal process and instead treating it as an input or trigger (Office of Government Commerce, 2005). Although this implies that the change being implemented both fixes the root cause and applies the correct fix logic, the truth that so many projects fail partially or completely, suggests that sometimes this is not the case. Some of those projects may have been doomed to failure from the start, seeking to solve the wrong problem and treating a symptom of the disease rather than the disease itself. The proposal currently under development is to measure the capability of the idea which preceded the project initiation stage to deliver the change; gauged in terms of the rigour applied to the root cause analysis that drove the project mandate. Such a measurement process would extend the project management methodology to what are today considered pre-project phases. If successful, it would be possible to measurably reduce the risk of project failure by ensuring that a fundamentally flawed idea, however feasible the business case appears, could never become a project mandate, and that any proposed change that does not address the root cause does not get authorised or initiated.

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