

## **THE EXECUTIVE SPONSOR AS KEY FACTOR IN MEGAPROJECT SUCCESS - AN EXPLORATORY STUDY**

WILLEM LOUW

University of Stellenbosch, Business School, South Africa  
willeml@sun.ac.za

HERMAN STEYN

University of Pretoria, Department of Engineering and Technology Management, South  
Africa  
herman.steyn@up.ac.za (Corresponding)

WIM GEVERS

University of Stellenbosch, Business School, South Africa  
wg@sun.ac.za

JAN WIUM

University of Stellenbosch, Department of Civil Engineering, South Africa  
janw@sun.ac.za

### **ABSTRACT**

Megaprojects are typically defined as projects with a value of US\$1 billion or more. Such projects fail at a concerning and unsustainable rate. This is problematic, not only for the funders who make very large sums of money available, but also for the societies that benefit from the projects. The failures have the potential to affect the health of national economies. Although several authors indicate the central role that the executive sponsor plays in the success or failure of megaprojects, no guide for the identification of the attributes of the executive sponsor exists, nor has the effect of the sponsor on megaproject success been studied sufficiently.

A number of megaprojects (with costs in excess of ZAR10 billion/ US\$1 billion) have been undertaken in South Africa so far in this century. This paper reports *inter alia*, on a pilot case study that forms part of a larger set of in-depth case studies being undertaken on South African megaprojects, to improve the understanding of the effect that the executive sponsor has on megaproject performance. A literature survey provided a list of attributes of executive sponsors, from which six propositions were formulated.

Interviews were conducted with four senior stakeholders of the megaproject selected for the pilot case study. Successfully validating the appropriateness of the survey guide questions, fine-tuning the plans for data collection, and determining the effective line of questioning were the primary objectives in utilising a pilot case study approach. In this regard all the pilot study interviewees reflected that they considered the survey guide questions as appropriate. However, some of the interviewees felt that more questions could have been directed at identifying who would make a good sponsor and how well the selected sponsor was prepared for the role.

An analysis of the recorded and transcribed pilot interviews provided some insight into the role, and particularly the important and essential attributes, of the executive sponsor. It also shed some light on how the identification of the attributes of the sponsor was performed - a matter that so far has been largely neglected in the literature. The pilot study, with the planned future case studies,

will provide practical guidelines to select and appoint executive sponsors for megaprojects. The practical guidelines will be directed at identifying individuals who would be better suited (because of their attributes) to contribute to the success of these economically important projects.

The interviewees were in agreement that the following attributes were essential for success:

- Seniority, credibility, and power in the organisation;
- Providing objectivity to and challenging the project assumptions;
- Negotiation skills;
- Tenacity;
- Commenting constructively on basic project management concepts; and
- Continuity throughout the life cycle of the megaproject.

Agreement on 'continuity throughout the lifecycle of the megaproject' by the interviewees supported the notion of the Association for Project Management (APM) that it is one of three critical success attributes that an organisation owning a project needs to consider to enhance the effectiveness of the sponsor.

**Key words:** Megaproject; Executive sponsor; Project success, Attributes, Effectiveness, Continuity.

## **INTRODUCTION**

Megaprojects are defined as projects costing US\$1 billion or more. Reflecting on the success (and failure) of major projects, in 1987 Morris and Hough produced perhaps the seminal publication on these major (later to be referred to as mega-) projects (Dalscher, 2012). They state that the track record of major projects at the time was fundamentally poor. This was particularly so for the larger and more difficult projects, which were often completed late or over budget, did not perform in the way expected, and appeared to be failures in the view of the public. Having these projects fail at a concerning and unsustainable rate was problematic for the funders who make very large sums of money available. It was also problematic for the societies in which they were being carried out, and for the health of the global economy.

Miller and Lessard (2001) and Flyvbjerg, Bruzelius and Rothengatter (2003) identified the key issue in the success or failure of a megaproject to be the sponsor. In particular, the role of the sponsor was found to be critical in influencing the progress and outcome of a megaproject.

A number of industrial and infrastructure projects in excess of ZAR10 billion/ US\$1 billion have been completed in South Africa since the year 2000. The failure rate of these South African megaprojects probably does not differ much from the typical global figure of 65 per cent or more (Merrow, 2011). Within this context, the paper reflects on the literature and elaborates on the relationship between the role of the sponsor, the effectiveness of the role, and the personal attributes required in performing the role. Initial indications from the literature are that the personal attributes of the sponsor directly influence his/her effectiveness of that role. This has a significant bearing on the success of the megaproject.

Identifying both the important and essential sponsor attributes related to the success of megaprojects is intended to make a contribution towards increasing the likelihood of these projects' success. Identification of both the important and essential sponsor attributes, and increasing the level of success of megaprojects, will potentially contribute not only to the health of the South African economy, but also to the health of the economy of the African continent.

Although several authors indicate the central role of the executive sponsor in the success or failure of megaprojects, there is no guide to identifying the attributes of the executive sponsor, nor has the effect of the sponsor on megaproject success been studied sufficiently.

This is the first of two papers exploring the attributes of the sponsor that determine the sponsor's effectiveness and ultimately result in the success of the megaproject. The paper commences with the definition of a megaproject, describes the types of megaprojects, and depicts the role players in megaprojects. Thereafter the success or failure of megaprojects is defined. It is followed by a description of the executive sponsor, elaborating on this role, its accountabilities and responsibilities, and clarifying how the role changes during the megaproject lifecycle. Next, the research methodology and the pilot case study are discussed. Prior to the concluding summary, the key issues of the attributes of the sponsor, and how the sponsor is selected, are discussed.

## **MEGAPROJECTS**

### **Definition**

A megaproject is defined as any project with a total capital cost (materials, engineering, and construction labour costs associated with completing a project) equal to or in excess of US\$1 billion at the 1 January 2003 dollar value (Morrow, 2011; Flyvbjerg, 2014; Ghosh, Williams, Askew and Mulgund, 2012; Irimia-Dieguez, Sanchez-Cazorla and Alfalla-Luque, 2014; Davies, Dodgson, Gann and MacAulay, 2017). Flyvbjerg (2014, p. 6) defines megaprojects as "large-scale, complex ventures that typically cost US\$1 billion or more, take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people". It appears that the nominal value of US\$1 billion has not changed since 2003, as it continues to be used to define the term 'megaproject'.

For the purpose of this study (for the period 2006 to 2016) a megaproject is defined as a project with a value equal to or in excess of ZAR10 billion equating to US\$1 billion. This figure is based on the US\$/ZAR exchange rate for the period 2006 to 2016. The period was arrived at as a reasonable and representative time frame, given the completion (or near-completion) of a number of industrial and infrastructure megaprojects in South Africa. Clarification of the terms 'industrial' and 'infrastructure' follows.

### **Types of megaprojects**

Flyvbjerg (2014) reflects that megaprojects are increasingly used globally as the preferred project delivery method for the provision of goods and services.

Typically an agency or owner uses a megaproject (as opposed to a group of large projects) to organise and finance the design, construction, operations, and maintenance services across a range of businesses and sectors (Flyvbjerg, 2014).

In South Africa the public sector typically delivers infrastructure megaprojects, while the private sector delivers industrial megaprojects. The category of infrastructure megaprojects in the South African context includes infrastructure projects with a profit motive. Examples of such industrial infrastructure megaprojects are electricity generation projects (coal-fired and hydro-power plants), a multi-purpose pipeline, the installation of a fibre-optic broadband network, tolled road construction projects, a high-speed commuter rail network, and integrated bus rapid transit systems. All other capital-intensive mega-manufacturing projects typically delivered by the private sector are categorised as industrial projects.

### **Role players/stakeholders**

In an organisational context, project sponsorship is considered a critical and pivotal component in an organisation's governance of project management (Labuschagne, Cooke-Davies, Crawford, Hobbs and Remington, 2006; APM, 2009; Morris, 2013). In the same context as Labuschagne *et al.* (2006), the APM (2009) portrays the links that the project sponsor has with other key parties within a generic structure, illustrated in Figure 1. This structure, very similar to the model developed by Labuschagne *et al.* (2006), needs to be read within the context that:

- Vertically-down, the sponsor defines the purpose and objectives of the project, provides decisions and resources, and directs the project manager;
- Horizontally, the sponsor provides key communication with internal and external stakeholders and monitors the project context; and
- Vertically-up, the business case of the project and the realisation of its benefits (both of which are the responsibilities of the sponsor) are reported on.

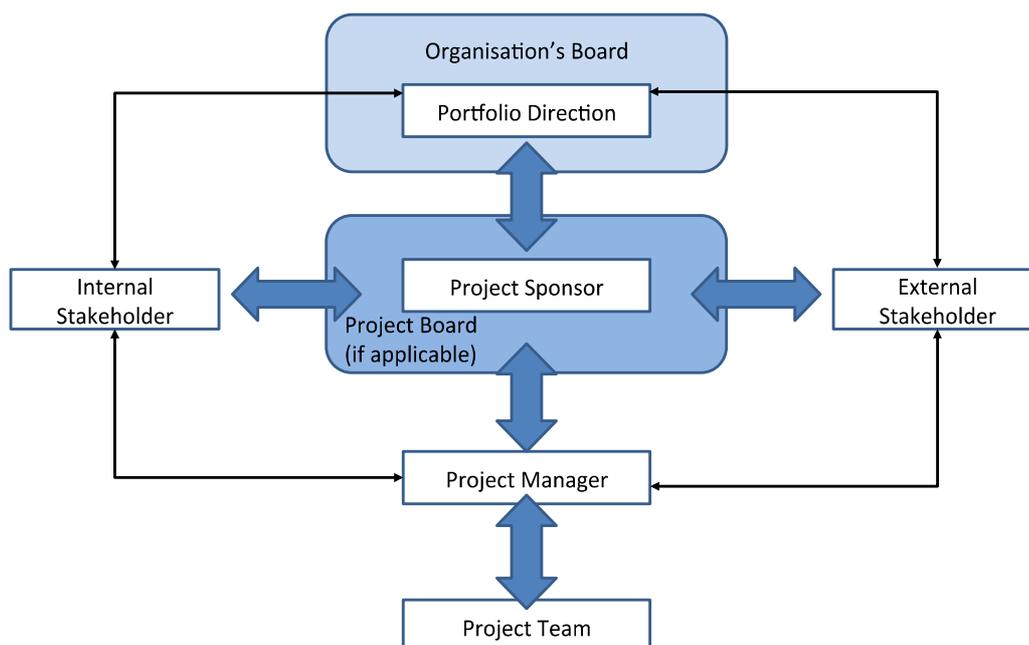


Figure 1: Organisational context - Generic. Source: Association for Project Management (APM, 2009, p. 3)

The APM (2009) also provides perspective on the sponsor within a program. A program is described as a collection of projects with shared goals and objectives, and whose predicted benefits have to materialise as a whole for the program to be successful (Morris, 2013).

### Success and failure

In the search for project success criteria, the literature reflects those listed in Table 1.

Table 1: Project success criteria as reflected by various authors

Authors	Project success criteria
Dvir, Lipovetsky, Shenhar and Tishler (1998)	<ul style="list-style-type: none"> <li>- Meeting design goals;</li> <li>- Benefits to the customer;</li> <li>- Benefits to the developing organisation;</li> </ul> and <ul style="list-style-type: none"> <li>- Benefits to the national infrastructure.</li> </ul> Of the above four dimensions, two were considered more important than the others: <ul style="list-style-type: none"> <li>- Benefits to the customer; and</li> <li>- Meeting design goals.</li> </ul>
Shenhar, Dvir, Levy and Maltz (2002)	<ul style="list-style-type: none"> <li>- Project efficiency; and</li> <li>- Impact on the customer</li> <li>- Business success; and</li> <li>- Preparing for the future.</li> </ul>
Morris and Hough (1987); Wateridge (1995)	<ul style="list-style-type: none"> <li>- Increases shareholder value</li> <li>- Makes profit for the owner</li> </ul>

<p>in Turner and Müller (2004); Turner and Müller (2006)</p>	<ul style="list-style-type: none"> <li>- Satisfies owner and sponsor</li> <li>- Satisfies consumers</li> <li>- Satisfies users and champion</li> <li>- Achieves purpose</li> <li>- Meets specifications               <ul style="list-style-type: none"> <li>• Functionality</li> <li>• Flexibility, reliability, availability, maintainability, elasticity, security</li> </ul> </li> <li>- Time, cost, quality</li> <li>- Satisfies project team</li> <li>- Makes a profit for the contractor</li> </ul>
<p>Merrow (2011)</p>	<ul style="list-style-type: none"> <li>- Cost overrun (&lt; 25 per cent)</li> <li>- Cost competitiveness (&lt; 25 per cent)</li> <li>- Slip in execution schedule (&lt; 25 per cent)</li> <li>- Schedule competitiveness (&lt; 25 per cent)</li> <li>- Production versus plan (Operability) – meeting production targets in first two years</li> </ul>
<p>Flyvbjerg (2014, 2017)</p>	<ul style="list-style-type: none"> <li>- Meeting of budget (cost target);</li> <li>- Meeting of schedule (time target); and</li> <li>- Achieving business benefits.</li> </ul> <p>Targets and benefits are those promised to entity that sanctions funding required for project.</p>

Dvir *et al.* (1998) and Shenhar *et al.* (2002) agree on very similar project success dimensions that, to date, have not developed significant traction.

Turner in Turner and Müller (2004) merges the work of Wateridge (1995) and Morris and Hough (1987) on success criteria for large (read mega-) projects, and has produced a list of success criteria. Turner and Müller (2006) recognise that various stakeholders will have an interest in the criteria, and will express their opinion on success or failure at different times. Turner suggests that a balanced view of what constitutes ‘success’ needs to be negotiated between all stakeholders.

Merrow (2011) indicates that 65 per cent of industrial megaprojects fail to meet business objectives (cost, schedule, and operability), and so defines success as ‘a lack of failure’. He states that the failure rate in some industrial sectors is as high as 78 per cent. If a project performs worse than the threshold on any of the five criteria as utilised by Merrow (2011) in Table 1, it is classified as a failure. If a project does not experience any one of the five dimensions as a problem, it is classified as a success.

Flyvbjerg (2014, 2017) states that, based on the evidence, about 10 per cent of megaprojects are on budget, about 10 per cent are on schedule, and about 10 per cent deliver the promised business benefits. The percentage allowance in the

thresholds advocated by Merrow (2011) is not evident in Flyvbjerg's analysis. By default, the implication is that 0,1 per cent (one in a thousand) of megaprojects are a success, where 'success' is defined as meeting the targets in all three dimensions. Flyvbjerg acknowledged this to be an extreme position. Flyvbjerg *et al.* (2003) and Flyvbjerg (2014) refer to the failures as part of the 'megaproject paradox'. On the one side of the paradox there is a significant demand for megaprojects as the delivery model for ventures (within both the private and the public sector). On the other side is the very poor delivery performance of megaprojects when assessed in terms of budget, schedule, and business benefit deviations.

Various authors express the view that a project should not be evaluated only in current terms. The future potential that it offers in achieving desired business objectives and generating new business or opportunities should also be considered (Pinto, 2004). This view is supported by Kloppenborg, Tesch, Manolis and Heitkamp (2006); Office of Government Commerce (2007); Dvir *et al.* (1998); Shenhar *et al.* (2002); Sewchurran and Barron (2008); Kloppenborg, Manolis and Tesch (2009); and Turner and Zolin (2012). In this context, Pinto (2004) describes the four dimensions considered relevant in measuring project success/failure as project efficiency; impact on the customer; business success; and future potential. So far, the time-dependent dimension of delivering promised benefits over the longer term (as motivated by the cited authors) has not been visibly incorporated into the measures of success of a megaproject. The 'iron triangle' of delivering the promised benefits on budget and in time (Flyvbjerg, 2017, p. 11) still rules the discourse on project success - megaprojects included. The criteria for the success or failure of megaprojects are accordingly limited in this paper to the 'triple constraint' notion of time, cost, and operational performance (promised benefits) as described by Merrow (2011). This is done in order to simplify the evaluation of the project success component reflected in Figure 2 later in the paper.

Table 2 reflects the views of various authors on the success or failure rates of megaprojects and the impact of sponsors on these rates. However, none of the authors in Table 2 refers to the impact of the sponsor. Table 3 lists some references to projects in general (not specifically megaprojects).

*Table 2: Overall spectrum of success/failure rates of megaprojects*

<b>Reference</b>	<b>Project failure rates ranges (%)</b>
Merrow (2011)	Range of 65 to 78%
Merrow in Westney, Evans and Tsai (2013)	Range of 67 to 80% (Industrial projects that cost more than US\$1 billion had only a one-in-three chance of achieving completion within 125 per cent of budget. In some industries, such as oil and gas, it was even worse, as the probability of failure was closer to four-in-five.)
EYGM (member company of EYG Limited ('Ernst and Young') (2014)	64% faced cost overruns; 73% reported schedule delays Specifically for megaprojects in oil and gas

	industries.
Flyvbjerg (2014)	90% overruns on cost (budget); time delays (schedule) and not meeting promised benefits. No thresholds were provided as in the Merrow (2011) reflection.

Table 3: Overall spectrum of success/failure rates of projects in general

Reference	Project failure rates ranges (%)
PMI (2012) Overall spectrum of projects (not necessarily megaprojects)	Range of 25 to 36% For organisations that have active project/program sponsors, at least 80 per cent of their projects have a success rate of 75 per cent
PMI (2013) Overall spectrum of projects (not necessarily megaprojects)	26% Specifically related to the practice, "Have active sponsors on 80%+ of projects"

It is clear from Table 2 that many more megaprojects failed than were successful. Flyvbjerg *et al.* (2003) and Flyvbjerg (2005) also support this finding. As indicated in Table 3, in the overall spectrum of projects (i.e., not only megaprojects) the situation is noticeably the opposite; and the relatively high percentage of successes is largely ascribed to projects with active sponsors.

## EXECUTIVE SPONSOR

### Definition

In defining the terminology *sponsor/sponsorship*, significant work has been done by Crawford, Cooke-Davies, Hobbs, Labuschagne, Remington and Chen (2008a, 2008b) by reviewing a number of national and organisational standards for project management. The standards reviewed are those developed by the Project Management Institute (PMI), the International Project Management Association (IPMA), the Association of Project Management (APM), and the Office of Government Commerce (OGC) in the United Kingdom.

Despite an inconsistency between the four standards mentioned above about how the role of the sponsor is carried out (e.g., by either an individual or a group) the similarities are quite clear, and five key themes emerge. The sponsor is:

- At a senior level in the owner (a.k.a. 'client' or 'customer') organisation;
- In a role involving substantial dimensions of leadership (as opposed to being just a management role);
- Responsible for ensuring that an effective governance framework is created for the project;
- The owner of the business case for the project, and ultimately responsible for the delivery or realisation of the benefits projected within the business case; and

- Positioned structurally on the interface between the owner and project organisations. This positioning enables decision-making and support for the project manager, particularly for issues beyond the control of the project manager.

## **Role of the sponsor**

### *Perspectives*

Morris (2013, p. 146) states that the conduct of the sponsor “can arguably make him the *single most influential ‘actor’* on the project, with a disproportionately high impact on outcome success”.

The APM (2009, pp. vii, 4) takes an even broader view of the role of the sponsor: it states that the role is *pivotal* in the governance of project management and the broader on-going success of organisations. Bourne (2015, p. 125) is of the view that senior stakeholder support specifically from the sponsor is *key to project success*. However, Bourne is concerned about how the sponsor for the project is identified. Bourne’s opinion is that the era of the ‘accidental project manager’ has largely passed, but we are still in the age of the ‘accidental sponsor’.

Barshop (2016) views the sponsor as *the one person accountable for the value to be delivered by the project*. He emphasises that this is a leadership role. Turner and Müller (2006) state that *sponsor engagement* is decisive for project success, and that sceptical and involved sponsors have more successful projects.

The guidance provided by the APM (2009) on the role of the sponsor vis à vis stakeholders is very sponsor-centric, as shown in Figure 1. In contrast, Lehtinen, Aaltonen and Rajala (2017) are of the opinion that managing stakeholders in megaprojects is not in the hands of a single organisation that has a dyadic relationship with the stakeholders. Neither does Lehtinen *et al.* (2017) make any reference to the role of a sponsor in managing stakeholder relationships on a megaproject. That raises a question about the importance of the sponsor concept within the Finnish environment.

Nicholas and Steyn (2017) argue that every project requires the support of a *champion and a sponsor*. Their perspectives are that the champion (with positional power) strongly believes in the project, and is an individual with the ability to convince the stakeholder community of the project’s intended value/benefits. The sponsor is described as an individual who focuses on ensuring that the project is given the appropriate priority. The sponsor also obtains the required resources, both capital and human. He/she is influential, performs in a formal capacity the role of clearing away barriers, and is able to influence the decisions of the executive management in the (permanent) organisation. Their view is that the sponsor normally does not spend too much time on the project, but is available for the project manager – e.g., when in need of top-level assistance. The PMI (2012; 2013) does not agree with the ‘time spent’ perspective of Nicholas and Steyn. The PMI view emphasises the relationship between project success and *active sponsors*. Remington (2011) also

accentuates the need, particularly within a megaproject context (which is, by nature, complex), for the sponsor role to be played on a dedicated basis. Barshop (2016) believes that, if a project is to be used to establish a new business environment, it will in all likelihood be allocated a full-time sponsor who, at the highest appropriate level, will oversee the project work, be involved in commercial negotiations, and direct the creation of the business and operating organisations.

In the project management context, the term 'champion' has outlived its usefulness, and is no longer generally applied as initially intended. The APM (2009) and Barshop (2016) reflect that the *sponsor champions the sponsorship role*, and that the sponsor champions the development of relationships across the project (clearly a function within a role). It can be seen, therefore, that the roles and responsibilities of the modern-day sponsor make adequate provision for the 'champion' perspectives raised.

### *Responsibilities and accountabilities*

Where the sponsor or sponsorship is addressed in the project management literature, it is comprehensively recognised that the sponsor role is a crucial component of any project. It is also recognised that the sponsor makes a significant contribution to the success (or failure) of the project (Pacelli, 2005; Crawford and Cooke-Davies, 2005; Cooke-Davies, 2005; Helm and Remington, 2005; Englund and Bucero, 2006; Turner and Müller, 2006; Sutterfield, Friday-Stroud and Shivers-Blackwell, 2006; Cooke-Davies, Crawford, Hobbs, Labuschagne and Remington, 2006; Kloppenborg *et al.*, 2009; Kloppenborg, Tesch and Manolis, 2011; Bucero and Englund, 2007; Bryde, 2008; Crawford *et al.*, 2008a, 2008b; APM, 2009; Englund, 2010; West, 2010; Remington, 2011; Morris, 2013; James, Rosenhead and Taylor, 2013; PMI, 2014; Bourne, 2015; Van Heerden, Steyn and Van der Walt, 2015; Kloppenborg and Tesch, 2015; Barshop, 2016).

The PMI (2014) states that executive sponsors are primarily allocated to initiatives of strategic importance that are complex, carry a certain degree of risk, are clearly discernible, and are allocated a very sizeable budget. A megaproject is thus entitled to a sponsor from the executive (most senior) ranks within an organisation. For the remainder of this paper, any reference to a sponsor should be interpreted as meaning an *executive* sponsor.

In the national (United Kingdom's) and organisational standards for project management, no single standard definition of the role of the sponsor is provided. There is, however, general (albeit implied) agreement that the sponsor/sponsorship role may be carried out by an individual or a group of people, such as e.g. a sponsoring group, project board, executive committee, or steering committee.

In addition to the OGC United Kingdom standards, Crawford *et al.* (2008a, 2008b), Remington (2011), and Nicholas and Steyn (2017) are quite specific, in their reflections on *individual vs group*, that there is clearly a place for group(s) in the sponsor/sponsorship context. They posit that the governance board for a

*program* (a committee of senior managers) contains a number of roles/responsibilities. Among them, the board (at a summarised level) is responsible for strategic alignment, oversight, direction giving and the creation of an enabling environment for the program.

Bryde (2008) states specifically that the predominant trend in the literature is to conceptualise a project sponsor from the perspective of an individual/person. In addition to Bryde (2008), the use of and reference to the sponsor as an individual/person has also been identified in the work of the APM (2009); West (2010); Morris (2013); James *et al.*, (2013); the majority view of the PMI (2014); Bourne (2015); Van Heerden *et al.*, (2015); and Barshop (2016). The position in this paper, therefore, is that an individual performs the sponsorship role.

In order to broaden the understanding of the roles, responsibilities, or accountabilities of the project sponsor, the following approach was adopted:

An initial assessment (to test for duplication) was performed on the descriptors of the roles, responsibilities, or accountabilities identified and used by the following authors or publications: Englund and Bucero (2006); Crawford *et al.* (2008a, 2008b); APM (2009); West (2010); Morris (2013); James *et al.*, (2013); PMI (2014); Van Heerden *et al.*, (2015); Kloppenborg and Tesch (2015); Barshop (2016); and Nicholas and Steyn (2017).

The term '*responsibilities*' was adopted, as it was found to be the most prevalent term in the literature. The work by Crawford *et al.* (2008a, 2008b) was used as a basis to begin the process of developing a broad framework for sponsor responsibilities, given below. Where a clear congruence in the use of the term 'accountability' was found between authors or publications, this is indicated by '**(A)**'.

- A senior management **role** representing the interests of the client (also described as the owner) at the interface between the client and project organisations;
- Owning the (robust) business case of the project; driving the realisation of its intended benefits; and recommending cost/benefit opportunities **(A)**;
- Providing direction by, among other things, developing a vision for the project; ensuring alignment of the project with company strategy; and building project team commitment to the project **(A)**;
- Establishing values; and creating a value-based culture and environment that ensures success **(A)**;
- Managing barriers or problems outside the remit and control of the project manager, to ensure the capture of the intended project value **(A)**;
- Giving direction and clarifying the framework for effective governance **(A)**;
- Setting performance standards (typically via the project charter) and establishing priorities at both organisation and project level;
- Developing and maintaining internal and external interfaces with the project outside the remit of the project manager, including relationships with the full spectrum of stakeholders;
- Selecting and appointing the project manager;

- Being a coach and mentor for the project manager, and in doing so, supporting the project manager and project team in overcoming obstacles;
- Enabling the provision of resources (financial, people, or others) in support of the project manager;
- Giving direction and clarifying the framework for effective decision-making;
- Giving direction and clarifying the framework for adequate and effective communication;
- Selling (promoting/defending) the project to senior management and other stakeholders;
- Giving direction and clarifying the framework for effective planning (including schedule, budget, resource plan, communication plan, risk management plan, communication plan, change control process, escalation process, and periodic review structure);
- Ensuring quality for the project by also covering the key stakeholders in addition to the board and the project manager (e.g. assurance reviews, providing feedback, follow-up and corrective actions, identifying and capturing lessons learned); and
- Assessing progress and (with the project manager) governing risks to ensure that the business case is appropriately protected.

#### *Role changes over the project lifecycle*

The front-end phase precedes the execution phase, when physical products are produced; and during the front-end phase of a typical project (including megaprojects), the development of the business case is the key focus. The project thus needs to be viewed from a 'becoming' to a 'being' perspective. In an ontological context, the project changes from a post-modernism to a realism perspective. The nature of the project changes from a strategic deliberation/developmental orientation (front-end) to a focussed delivery (execution) orientation.

The front-end is the phase of the project when the sponsor plays the most critical role. This implies that there is a need for the appointer of the sponsor to be aware of and sensitive to the sponsor's attributes. This is particularly pertinent to the ability of the individual to accommodate both post-modernism and realism within his/her philosophical approach to the project.

#### **Attributes of the sponsor**

While assessing the responsibilities or accountabilities of the sponsor, a consistent two-part theme was identified. For the first part, it was found that the effectiveness of the sponsor is the single best predictor of project success or failure (APM, 2009). In the second part, it was found that the personal attributes of the individuals carrying out the role directly influenced its effectiveness (Helm and Remington, 2005; Englund and Bucero, 2006; Bucero and Englund, 2007; Crawford *et al.*, 2008a, 2008b; APM, 2009; West, 2010; Remington, 2011; Morris, 2013; PMI, 2014; Van Heerden *et al.*, 2015; Barshop, 2016). The relationship

between the attributes of the sponsor, the effectiveness of the sponsor, and project success can be seen graphically in Figure 2.

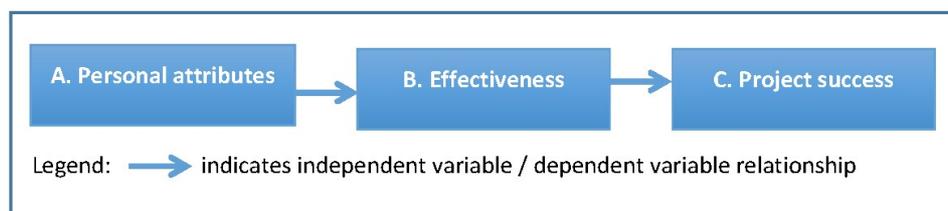


Figure 2: Relationship between personal attributes, sponsor effectiveness, and project success

The essence of the relationship is that A (the personal attributes of the sponsor) is an independent variable of the dependent variable B (sponsor effectiveness). In turn B (sponsor effectiveness) is an independent variable of the dependent variable C (project success).

In the context of the descriptor ‘attributes’, it was found that different descriptors are used to describe what is inherent in the sponsor’s effectiveness. For the purpose of simplicity and consistency, it was decided to use the term ‘attributes’. This is supported by the fact that the work by Helm and Remington (2005), which uses the descriptor *attributes*, is also cited by Sutterfield, Friday-Stroud and Shivers-Blackwell (2006); Cooke-Davies *et al.* (2006); Labuschagne *et al.* (2006); Kloppenborg *et al.* (2009, 2011); and Walker (2012).

The broad framework for the attributes of a project sponsor was developed as follows: An initial assessment to test for duplication was performed on the descriptors of the attributes identified and used by the following authors: Pacelli (2005); Helm and Remington (2005); Englund and Bucero (2006); Crawford *et al.* (2008a, 2008b); APM (2009); West (2010); Remington (2011); Morris (2013); PMI (2014); Bourne (2015); Van Heerden *et al.* (2015); and Barshop (2016). The work by Helm and Remington (2005) was used as the basis to begin the process of developing a broad overarching framework for sponsor attributes. The summarised array of attributes identified for inclusion in the broad sponsor attributes framework is given in Table 4.

Table 4: Summarised broad framework for sponsor attributes

Type of attribute	Examples of and references to attributes
Strategic inclination	<ul style="list-style-type: none"> <li>- Understanding of strategy of organisation, appreciation of how project contributes to corporate strategy (West, 2010)</li> <li>- Political knowledge of organisation; political savvy (Helm &amp; Remington, 2005; Crawford <i>et al.</i>, 2008a, 2008b; Van Heerden <i>et al.</i>, 2015)</li> <li>- Understanding role, its significance, and need to align project with interests of organisation (APM, 2009)</li> <li>- Ability to provide clarity of direction (incl. development of compelling vision) within context of strategy and governance arrangements of organisation (Englund &amp; Bucero, 2006; Bucero &amp; Englund, 2007; APM, 2009).</li> </ul>

Leadership	<ul style="list-style-type: none"> <li>- Ability to lead for results and success by conveying sense of urgency/focusing on what matters most (Englund &amp; Bucero, 2006; Bucero &amp; Englund, 2007)</li> <li>- Ability to provide leadership consistent with culture and values of organisation (APM, 2009)</li> <li>- Ability to take holistic view and engage peers in organisation for advice and support for key decisions<sub>1</sub> (West, 2010; Remington, 2011; Barshop, 2016)</li> <li>- Ability and willingness to provide objectivity to project team and challenge project assumptions (including exploring alternatives to maximise value)<sub>1</sub> (Helm &amp; Remington, 2005; Remington, 2011; Van Heerden <i>et al.</i>, 2015; Barshop, 2016).</li> </ul>
People focused (includes delegating, partnering, motivation; negotiation, tenacity, communication, decision-making and networking) <sub>2</sub>	<ul style="list-style-type: none"> <li>- Ability to <i>delegate</i> authority to appropriate levels; provide ad-hoc support to project team rather than micromanage<sub>1</sub> (Helm &amp; Remington, 2005; Crawford <i>et al.</i>, 2008a, 2008b; Remington, 2011)</li> <li>- Willingness to <i>partner</i> with project manager and team to deliver project objectives<sub>1</sub> (Remington, 2011)</li> <li>- Good <i>negotiation</i> skills and courage in context of providing/securing/battling for availability of resources for project manager (APM, 2009; West, 2010; Bourne, 2015; Barshop, 2016)</li> <li>- <i>Tenacity</i> to break down barriers (West, 2010).</li> </ul>
Dealing with ambiguity/complexity	<ul style="list-style-type: none"> <li>- Interpersonal and critical thinking skills, including ability to handle ambiguity when dealing with complex projects<sub>1</sub> (Helm and Remington, 2005; Crawford <i>et al.</i>, 2008a, 2008b; Van Heerden <i>et al.</i>, 2015; Barshop, 2016; Remington, 2011).</li> </ul>
Motivation <sub>2</sub>	<ul style="list-style-type: none"> <li>- Ability to engage; willing to take personal ownership; acting in long-term interest of organisation (APM, 2009)</li> <li>- Ability to motivate when pressure mounts<sub>1</sub> (Remington, 2011)</li> <li>- Ability to motivate team to deliver vision (Helm &amp; Remington, 2005; Crawford <i>et al.</i>, 2008a, 2008b)</li> </ul>
Communication <sub>2</sub>	<ul style="list-style-type: none"> <li>- Ability to demonstrate high-level communication skills<sub>1</sub> (Helm &amp; Remington, 2005; Crawford <i>et al.</i>, 2008a, 2008b; Remington, 2011; Van Heerden <i>et al.</i>, 2015)</li> <li>- Ability to foster atmosphere of <i>trust/open</i> communication with project manager/team (Englund &amp; Bucero, 2006; Bucero &amp; Englund, 2007; Barshop, 2016)</li> </ul>
Open to learning	<ul style="list-style-type: none"> <li>- Ability to exhibit high capability for self-reflection; willingness to engage experts in problem-solving<sub>1</sub> (Remington, 2011)</li> <li>- Ability to promote knowledge creation and re-use (Englund &amp; Bucero, 2006; Bucero &amp; Englund, 2007; Barshop, 2016)</li> </ul>
Networking <sub>2</sub>	<ul style="list-style-type: none"> <li>- Ability to develop and foster (high-level) effective connections between and within organisation and project team<sub>1</sub> (Helm &amp; Remington, 2005; Remington, 2011; Bourne, 2015; Van Heerden <i>et al.</i>, 2015)</li> <li>- Ability to demonstrate personal compatibility with other key players in organisation<sub>1</sub> (Helm &amp; Remington, 2005; Crawford <i>et</i></li> </ul>

	<i>al.</i> , 2008a, 2008b; Remington, 2011; Van Heerden <i>et al.</i> , 2015)
Decision-making <sub>2</sub>	<ul style="list-style-type: none"> <li>- Ability to act swiftly and decisively and take responsibility for tough decisions (Pacelli, 2005; Englund &amp; Bucero, 2006; Bucero &amp; Englund, 2007; Barshop, 2016)</li> <li>- Ability and willingness to serve as focal point for decisions beyond scope of authority of project manager (Englund &amp; Bucero, 2006; Bucero &amp; Englund, 2007)</li> </ul>
Attributes that can be learned	<ul style="list-style-type: none"> <li>- Understanding of business case development; seeks input and consensus on contents of business case within organisation (West, 2010; Barshop, 2016)</li> <li>- Understanding of basic project management concepts; understands and can comment constructively at high level on scope, risk, schedule, and cost management<sub>1</sub> (Remington, 2011; Barshop, 2016)</li> <li>- Ability to understand and respond to results of independent reviews of project, and hold team accountable for such results (Pacelli, 2005; Barshop, 2016)</li> <li>- Ability to manage self; time management (personal and priority) a significant part of self-management (Crawford <i>et al.</i>, 2008a, 2008b)</li> <li>- Possesses sufficient knowledge of business, its operations, market, and industry, able to make informed decisions (West, 2010; Bourne, 2015; Barshop, 2016).</li> </ul>
Positional (not in persona of individual)	<ul style="list-style-type: none"> <li>- Appropriate seniority, credibility, and (personal and positional) power within organisation<sub>1</sub> (Helm and Remington, 2005; Crawford <i>et al.</i>, 2008a, 2008b; APM, 2009; Van Heerden <i>et al.</i>, 2015)</li> <li>- Continuity of sponsor on project throughout life cycle of project (APM, 2009).</li> </ul>

Endnote 1: Attributes identified to include complex projects specifically (Remington, 2011).

Endnote 2: Terminology identified for those attributes that are intrinsic to the persona of the individual and that are strongly people-focused.

An appraisal of the attributes listed in the broad framework may suggest that a single individual is unable to fulfil the full spectrum of attributes. Remington (2011) supports this perspective with the additional comment that the right *teams* could fulfil all the attributes. Remington (2011) and James *et al.* (2013) share the perspective that all the attributes are rarely found in one person. Similarly, De Klerk (2014) reflects that the list of recommended leadership characteristics (read 'attributes') and traits prescribed in the literature are unrealistically comprehensive and optimistic.

### **Process to select sponsor, and criteria used**

The project management literature analysed above revealed only one reference providing insight into how the required attributes of a sponsor were taken into consideration before selecting, assigning, nominating, or identifying the sponsor.

The APM (2009: 17) provides a clear approach to the question of how a sponsor should be chosen and appointed. It states that the board of the organisation (Figure 1) should consider three critical success attributes in the selection of an appropriate individual as sponsor for a project. These attributes are organisational support, continuity, and alignment of interests. In addition, five personal attributes – understanding, competence, credibility, commitment, and engagement – needed to be confirmed by the board in the selection process.

The following references help to identify *who* is responsible for the outcome of having a sponsor on a project. In the OGC standard, Managing Successful Projects (2007), the *sponsoring group* identifies the senior responsible owner (SRO), who is then *de facto* the sponsor. Depending on the context of the project and the governance arrangements of the organisation, the selection of the sponsor is typically performed by *the board* (APM, 2009).

It is clear from the literature that the process of sponsor appointment on a project is not adequately addressed or described.

### CONCEPTUAL FRAMEWORK FOR RESEARCH

The literature explored ultimately allows the conceptual framework for the empirical research to be established. In essence, the framework, as depicted in Figure 3, consists of a number of propositions identified from the literature that are converted into research questions; and these, when answered, will provide the necessary data to achieve the research aim. The identification of both the important and essential attributes of the executive sponsor, and their effective application, should lead to a higher probability of success for a megaproject.

Research aim	Research questions	Propositions
	<b>How</b> is the potential megaproject sponsor identified and appointed and <b>what</b> are the attributes that he/she should possess?	Sponsors need to be identified and appointed from executive/ senior management for megaprojects informed by the attributes they possess.
	<b>How</b> do professionals in the field rank the relative importance of the attributes of megaproject sponsors (assuming all the attributes are not equally important)?	All the attributes of a sponsor on a megaproject are not equally important when measured relative to each other.
<b>To identify what important essential attributes a sponsor on megaproject should possess</b>	<b>Why</b> are certain attributes of the sponsor on a megaproject defined as important?	Certain attributes of the sponsor on a megaproject are defined as important to be possessed i.e. important for the sponsor to be effective in the role.
	<b>Which</b> important attributes of a sponsor on a megaproject are considered as essential for the project to be a success?	Certain important attributes of the sponsor on a megaproject are considered as essential i.e. if not possessed by the sponsor it could lead to project failure.
	<b>Which</b> psychometric and other tests can reliably assess important attributes of potential megaproject sponsor?	The determination of which attributes a potential sponsor on a megaproject possesses can be performed with a full array of psychometric and other tests
	<b>What</b> should the level of active participation and continuity of a megaproject sponsor ideally be such that it makes a decisive impact on the success of the project?	An active and continuously involved megaproject sponsor during the lifecycle of the project makes an essential contribution to project success.

Figure 3: Research aim, questions, and propositions

## RESEARCH METHODOLOGY

An analysis of the five most frequently observed methodologies described by Creswell (2013) – i.e., narrative research, phenomenology, grounded theory, ethnography, and case study – indicates that the case study methodology best meets the requirements of the overall research study. This argument is based on the work of Yin (2014), Merriam (1998), and Stake (2000, 2005). The case for the study contains the elements of a ‘contemporary phenomenon’ (Yin) and ‘thing/single entity’ – i.e., a person with attributes (Merriam), being the executive sponsor of a megaproject. The sponsor is in a ‘real-life’ context (Yin) within an ‘integrated system’ (Stake) that has ‘boundaries/working parts’ (Yin and Merriam), being the megaproject. The researcher has no control over the contemporary phenomenon (sponsor with attributes) or the context (megaproject), according to the defined requirements for a case (Yin). The investigation of multiple cases is planned, and the multiple case study methodology makes provision for this.

A number of megaprojects from multiple sites have been identified for selection for study. Conceptually, the framework for the megaprojects selected for the research is contained within the following dimensions:

- Megaprojects located in South Africa;
- Successful and failed (as per the success/failure criteria described) megaprojects with sponsors;
- Private/public sector megaprojects, with the public sector megaprojects being mainly in the domain of infrastructure creation by state-owned companies (SOCs), accompanied by profit-motive considerations;
- Representation of the spectrum of industry sectors where megaprojects in South Africa are typically encountered, such as mining and minerals, energy (both electricity and petrochemical/ chemical/fuels), telecommunications, and transport;
- Megaprojects with a value equal to or greater than ZAR10 billion/US\$1 billion at time of sanction of funds; and
- Megaprojects completed/commissioned since 2006/7, or under construction and with significant progress achieved to allow an assessment of success or failure.

The key relationships in the organisational context of a megaproject are (i) between the board/ executive team and the sponsor, and (ii) between the sponsor and the project manager. The board/ executive team, the sponsor, and the project manager have been positioned as the dominant entities involved in the identification of both important and essential attributes that a sponsor on a megaproject needs to possess.

An analysis was done of the presence of megaprojects (industrial and infrastructure) with a profit motive in the South African context, using locally published databases. The analysis indicates that eleven projects qualify to be included in the study. These eleven projects all meet the ZAR10 billion/

US\$1billion threshold as defined by Merrow (2011) and Flyvbjerg (2014) for megaprojects.

From the eleven projects, seven have been selected. This is within the range of six to ten case studies required for multiple-case study research methodology (Eisenhardt in Easton, 2010) and includes both private and public sector projects. The industry sectors that are represented in the selection are mining and minerals (coal), energy (fuels and petrochemicals - i.e., wax from natural gas), transport (rail and pipeline), and energy (coal-fired and pumped storage power generation). Using cost, schedule, and operability information available in the public domain, it is projected that the split between success and failure for South African megaprojects is reasonably similar to the global norm for failed megaprojects - i.e. 65 per cent (Merrow, 2011).

The primary form of data collection for the overall study will be semi-structured interviews, supplemented by a focus group activity. A need has been determined to identify the potential impact (if any) on the research outcome of the presence of the units of analysis (the attributes) in a multiple-industry sector environment. A need has also been identified to determine whether the attributes profile of a sponsor differs between megaprojects and smaller projects. The focus group activity will be conducted with one specific organisation with a megaproject presence in the energy (fuels and chemicals) and mining industries.

A pilot case study was undertaken, and the results are discussed below. Semi-structured interviews (as per the proposed interview guide for the overall study) were conducted with the individuals involved in the organisational context of the project described above. The pilot case study was performed on a megaproject that was targeted to improve the volumes of hard synthetic wax produced via an advanced proprietary (Fischer-Tropsch) technology from the operations facilities of a major petrochemical company ('the company') in South Africa. The project was essentially sponsored by two individuals. For the purpose of the pilot study, interviews were conducted with the member of the Group Executive Committee (GEC) of the company that appointed the initial sponsor, the two executive sponsors, and the project director.

## **PILOT CASE STUDY**

### **Background**

The Fischer Tropsch Wax Expansion Project (FTWEP) selected for the pilot case study was a megaproject entailing the conversion of natural gas to wax and related products, achieved by replacing outdated reactors that had been built in the 1950s with new reactor equipment.

At the beginning of December 2009, the company approved an investment of R8,4 billion that was targeted at doubling the production of hard wax in South Africa. The investment was planned to be done in two phases. Phase 1 was planned to come into operation in 2012, and would increase the hard wax capacity of the company by close to 40 per cent. The investment for Phase 1 included a pre-investment to optimise the remaining investment for Phase 2. Phase 2 was expected to come into operation by 2014.

Marketed through the Performance Chemicals Business Unit of the company, hard waxes, medium waxes, liquid paraffins, and waxy oils are used in a variety of industrial applications. Hard waxes are used in hotmelt adhesives, PVC processing, inks, paints and coatings, and asphalt applications.

Construction on Phase 1 began in 2010, and on Phase 2 in 2014. Table 5 reflects the breakdown of actual versus planned costs and schedules for the project.

*Table 5: Actual versus planned costs and schedules for FTWEP*

Phase	Planned cost (ZAR/ US\$ billion)	Actual costs (ZAR/ US\$ billion)
Total	8,4/ 0,84	13,6/ 1,36
	Planned completion date	Actual completion date
One	2012	2014
Two	2014	2016
Overall	2014	2016

From a cost and schedule perspective, the FTWEP cannot be classified as a success; and that has been agreed by all the parties interviewed during the pilot study. It is too early to predict a significant reduction in production during the initial two years since completion. Initial indications are that the production levels will be achieved as designed within the initial two years.

The APM (2009) advocates that continuity of sponsorship through the life-cycle of a project is one of three critical (read 'essential') success attributes that the owner should consider in order to improve the effectiveness of the sponsor. This was not achieved successfully on the FTWEP.

The first sponsor - who was also the originator of the concept to double the production of hard wax in South Africa - was nominated to be the sponsor of the project without deliberately determining what the attributes of the individual were from a sponsor perspective. This decision was made by the member of the GEC responsible for the production and marketing of chemicals for the company, to whom the sponsor reported. The individual nominated as sponsor was also the managing director of the wax business unit, a position he retained while being the sponsor for the project. As sponsor he demonstrated strong ownership of the business case for the project. At the time of investment approval, the sponsor identified an individual to manage (as general manager) the day-to-day running of the wax business unit, allowing the sponsor to focus more closely on the project. Prior to the completion of the engineering design, and well into construction of the first phase of the project, a decision was made to transfer and relocate the sponsor. This created a distinctly uneasy situation for the project director, given the impact of such lack of continuity in an already complex environment.

## **Results**

From a 'continuity of the sponsor on the project' perspective, the following comments recorded during the semi-structured interviews were found to be relevant to the potential effect this may have had on the project being classified as a failure:

Project director [re departure of the initial sponsor and the take-over by the subsequent sponsor]:

*"...unproductive time for the project director when he needs to focus to get into the delivery of [the project]. You do not want to go back and try and help him to explain the business case all over again, which happens when you for instance ask for more capital."*

GEC member responsible for relocating the sponsor [on the comment by the project director]:

*"The impression created by the project director at that time was, don't worry, we've got this under control.... The risk assessment from my side was an understanding that the FTWEP had progressed to the extent where the problem-solving related far more to day-to-day project execution issues than to high-level big issue challenges that we had faced initially."*

Prior to the completion of the construction of Phase 1, and before Phase 2 began, the sponsor role was allocated to the senior vice-president (SVP) responsible for Operations at the total site where the project was located (in Sasolburg, South Africa). Again, the individual concerned had to play a dual role: he had to take care of his normal responsibilities as SVP for Operations as well as being the sponsor of the project. It is noteworthy from the interviews that the GEC member responsible for the relocation of the sponsor eventually identified 'continuity of the sponsor to be evident during the life-cycle of the project' as an attribute essential for success.

The primary objectives in using a pilot case study approach are to validate the appropriateness of the survey guide questions, fine-tune the plans for data collection, and determine the effective line of questioning. These objectives were achieved. The pilot case study also contains distinct facets of pre-testing. It not only focuses on the development of lines of questioning for the research design, but also provides an opportunity to rehearse the data collection plan.

All the interviewees reflected that they considered the survey guide questions to be appropriate. However, some interviewees indicated that more questions could have probed who would make a good sponsor, and how adequately the selected sponsor had been prepared for the role.

It is recognised that the responses during the interviews with the four individuals involved (GEC member, two sponsors, and the project director) would not allow for exhaustive deductions to be made. A comparison of the responses obtained during the interviews indicated (with overlap of at least three out of four responses) that the following attributes (in addition to the attribute of 'continuity') were not only considered important but also essential for megaproject success:

- Appropriate seniority, credibility, and power (both positional and personal) in the organisation;
- An understanding of, and ability to comment constructively on, basic project management concepts (e.g. scope, risk, schedule, and cost management) at a high level;

- Ability/willingness to bring objectivity to the project team and to challenge project assumptions;
- Good negotiation skills, particularly in the context of providing/securing resources for the project manager, as well as conflict resolution and achieving compromises; and
- Tenacity to break down barriers.

## **CONCLUSION**

This paper is, in essence, the literature study laying the foundation for an exploration of those important and critical attributes required by the executive sponsor to achieve project success. Contextually, the exploration revolves around a relationship between the personal attributes of the individual carrying out the role of sponsor and how it directly influences his/her effectiveness. The exploration also revolves around the relationship between the effectiveness of the sponsor and its being the single best predictor of project success (or failure).

The interviews conducted in this pilot study lay the foundation for the planned future case studies that will provide practical guidelines for company boards to select and appoint executive sponsors. The practical guidelines will be directed at identifying individuals who would be better suited (because of their attributes) to contribute to the success of these economically important projects.

Guidance on how to identify and appoint an executive sponsor, and the type of testing required to determine what attributes the individual possesses, will form part of the next paper. The ranking of both the important and essential attributes of a megaproject sponsor will also be revealed.

## **REFERENCES**

Association for Project Management (APM), (2009), *Sponsoring change: A guide to the governance aspects of project sponsorship*. APM Knowledge Specific Interest Group, Buckinghamshire.

Barshop, P., (2016), *Capital projects: What every executive needs to know to avoid costly mistakes and make major investments pay off*. Hoboken, New Jersey: John Wiley and Sons Inc.

Bourne, L., (2015), *Making projects work - Effective stakeholder and communication management*. Boca Raton, Florida: CRC Press.

Bryde, D., (2008), Perceptions of the impact of project sponsorship practices on project success. *International Journal of Project Management*, 26, 800-809.

Bucero, A., and Englund, R.L., (2007), *Building executive support - keys to project success*. Paper delivered at the 2007 PMI Global Congress, Budapest.

Cooke-Davies, T.J., (2005), *The executive sponsor - the hinge upon which organisational project management maturity turns*. Paper delivered at the 2005 PMI Global Congress, Edinburgh.

Cooke-Davies, T., Crawford, L., Hobbs, J.B., Labuschagne, L., and Remington, K., (2006), *Exploring the role of the executive sponsor*. Published research report. Project Management Institute, Pennsylvania.

Crawford, L., and Cooke-Davies, T., (2005), Project governance: The pivotal role of the executive sponsor. Paper delivered at the 2005 PMI Global Congress, Toronto.

Crawford, L., Cooke-Davies, T., Hobbs, B., Labuschagne, L., Remington, K., and Chen, P., (2008a), Situational sponsorship of projects and programs: An empirical review. Pennsylvania: Project Management Institute.

Crawford, L., Cooke-Davies, T., Hobbs, B., Labuschagne, L., Remington, K., and Chen, P., (2008b), Governance and support in the sponsoring of projects and programs. *Project Management Journal*, 39 (Supplement), August, S43-S55.

Creswell, J.W., (2013), *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, California: Sage.

Dalscher, D., (2012), The nature of project management - A reflection on 'The anatomy of major projects' by Morris and Hough. *International Journal of Managing Projects in Business*, 5(4), 643-660.

Davies, A., Dodgson, M., Gann, D.M., and Macaulay, S.C., (2017), Five rules for managing large, complex projects. *MIT Sloan Management Review*, 59(1), 73-78.

De Klerk, M., (2014), Project management or project leadership? In Y du Plessis (ed.), *Project management: A behavioural perspective*, pp. 61-96. Cape Town: Pearson.

Dvir, D., Lipovetsky, S., Shenhar, A., and Tishler, A., (1998), In search of project classification: A non-universal approach to project success factors. *Research Policy*, 27, 915-935.

Easton, G., (2010), Critical realism in case study research. *Industrial Marketing Management*, 39(1), 118-128.

Englund, R.L., and Bucero, A., (2006), *Project sponsorship: Achieving management commitment for project success*. San Francisco: Jossey-Bass (a Wiley imprint).

Englund, R.L., (2010), Negotiating with my sponsor. Paper delivered at the 2011 PMI Global Congress, Washington.

EYGM Limited, (2014), Spotlight on oil and gas megaprojects. Ernst and Young. [Online] Available: <http://www.ey.com/oilandgas/capitalprojects> [20 November 2016].

Flyvbjerg, B., Bruzelius, N., and Rothengatter, W., (2003), *Megaprojects and risk: An anatomy of ambition*. Cambridge: Cambridge University Press.

Flyvbjerg, B., (2005), Policy and planning for large infrastructure projects: Problems, causes, cures. World Bank Policy Research working paper, 3781, December.

Flyvbjerg, B., (2014), What you should know about megaprojects and why: An overview. *Project Management Journal*, 45, 6-19.

Flyvbjerg, B., (2017), Introduction: The iron law of megaproject management. In *The Oxford handbook of megaproject management*, B. Flyvbjerg (ed.), pp. 1-18. Oxford: Oxford University Press.

Ghosh, P.S., Williams, D.E.A., Askew, P., and Mulgund, V., (2012), Organisations and leaders make or break projects. *Energy Perspectives*, Summer, 2017.

Helm, J., and Remington, K., (2005), Effective project sponsorship: An evaluation of the role of the executive sponsor in complex infrastructure projects by senior project managers. *Project Management Journal*, 36(3), September, 51-61.

Irimia-Dieguez, A.I., Sanchez-Cazorla, A., and Alfalla-Luque, R., (2014), Risk management in megaprojects. *Procedia - Social and Behavioural Sciences*, 119, 407-416.

James, V., Rosenhead, R., and Taylor, P., (2013), *Strategies for project sponsorship*. Virginia: Management Concepts Press, Inc.

Kloppenborg, T.J., Tesch, D., Manolis, C., and Heitkamp, M., (2006), An empirical investigation of the sponsor's role in project initiation. *Project Management Journal*, 37(3), 16-25.

Kloppenborg, T.J., Manolis, C., and Tesch, D., (2009), Successful project sponsor behaviours during project initiation: An empirical investigation. *Journal of Managerial Issues*, 21(1), 140-159.

Kloppenborg, T.J., Tesch, D., and Manolis, C., (2011), Investigation of the sponsor's role in project planning. *Management Research Review*, 34(4), 400-416.

Kloppenborg, T.J., and Tesch, D., (2015), How executive sponsors influence project success. *MIT Sloan Management Review*, 56(3), 27-30.

Labuschagne, L., Cooke-Davies, T., Crawford, L., Hobbs, J.B., and Remington, K., (2006), Exploring the role of the project sponsor. Paper delivered at the 2006 PMI Global Congress, Seattle.

Lehtinen, J., Aaltonen, K., and Rajala, R., (2017), Strategic practices of stakeholder management in megaprojects. Paper delivered at 15<sup>th</sup> Engineering Project Organisation Conference with 5<sup>th</sup> International Megaprojects Workshop, Stanford Sierra Camp, California.

Merriam, S.B., (1998), *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.

Merrow, E.W., (2011), *Industrial megaprojects: Concepts, strategies, and practices for success*. New Jersey: John Wiley and Sons.

Miller, E.J., and Lessard, D.R., (2001), *The strategic management of large engineering projects: Shaping institutions, risks, and governance*. Cambridge, Massachusetts: MIT Press.

Morris, P.W.G., and Hough, G.H., (1987), *The anatomy of major projects - A study of the reality of project management*. Chichester: John Wiley and Sons Inc.

Morris, P.W.G., (2013), *Reconstructing project management*. Oxford: Wiley-Blackwell.

Nicholas, J.M., and Steyn, H., (2017). *Project management for engineering, business and technology* (5<sup>th</sup> ed.). New York: Routledge.

Office of Government Commerce., (2007), *Managing successful programmes* (2<sup>nd</sup> ed.). London: The Stationary Office.

Pacelli, L., (2005), *Top ten attributes of a great project sponsor*. Paper delivered at the 2005 PMI Global Congress, Toronto.

Pinto, J. K., (2004), *The elements of project success*. In *Field guide to project management*, D.I. Cleland (ed.), pp. 14–27. New Jersey: John Wiley and Sons.

Project Management Institute (PMI), (2012), *Pulse of the profession: Driving success in challenging times*. Pennsylvania, March.

Project Management Institute (PMI), (2013), *Pulse of the profession in-depth report: Navigating complexity*. Pennsylvania, September.

Project Management Institute (PMI), (2014), *Pulse of the profession in-depth report: Executive sponsor engagement—Top driver of project and program success*. Pennsylvania, October.

Remington, K., (2011), *Leading complex projects*. Farnham: Gower.

Shenhar, A.J., Dvir, D., Levy, O., and Maltz, A.C., (2002) *Project success: A multidimensional strategic concept*. *Long Range Planning*, 34, 699–725.

Stake, R.E., (2000), *The case study method in social inquiry*. In *Case study methods: Key texts*, R. Gomm, M. Hammersley and P. Foster (eds.), pp. 20–26. London: Sage.

Stake, R.E., (2005), *Qualitative case studies*. In *The Sage handbook of qualitative research* (3<sup>rd</sup> ed.), N.K. Denzin and Y.S. Lincoln (eds.), pp. 443–466. Thousand Oaks, California: Sage.

Sutterfield, S., Friday-Stroud, S., and Shivers-Blackwell, S., (2006), *A case study of project and stakeholder management failures: Lessons learned*. *Project Management Journal*, 37, 26–35.

Turner, J.R., and Müller, R., (2004), *Communication and cooperation on projects between the project owner as principal and the project manager as agent*. *The European Management Journal*, 22(3), 327–336.

Turner, R., and Müller, R., (2006), *Choosing appropriate project managers: Matching their leadership style to the type of project*. Newtown Square, Pennsylvania: Project Management Institute.

Turner, R., and Zolin, R., (2012), *Forecasting success on large projects: Developing reliable scales to predict multiple perspectives by multiple stakeholders over multiple time frames*. *Project Management Journal*, 43(5), 87–99.

Van Heerden, F., Steyn, J., and Van der Walt, D., (2015), *Programme management for owner teams: A practical guide to what you need to know*. Sasolburg, South Africa: Owner Team Consult.

Wateridge, J.H., (1995), *IT projects: A basis for success*. *International Journal of Project Management*, 13(3), 169–172.

West, D., (2010), *Project sponsorship: An essential guide for those sponsoring projects within their organisations*. Farnham: Gower.

Westney, R., Evans, J., and Tsai, S., (2013), Board oversight of major capital projects. *The Corporate Board*, May/June, 7-12.

Yin, R.K., (2014), *Case study research: Design and methods* (5<sup>th</sup> ed.) Thousand Oaks, California: Sage.