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“Sustainability; A New Element of Project Success”

“From whose point of view is Velodrome Park and Wind Turbine projects considered a success or failure?”

Key Words: Sustainability (the seventh element), project success and failure, performance objectives, project interests (business, users and suppliers), Velodrome Park and Wind Turbine projects.

Abstract:

There are plenty of reasons why a project to fail. While all projects strive to succeed, many of them are either over budget or unable to deliver their objectives and that is the reason almost 90 % of all projects either become restarts or fail. On the other hand, project success is possible and there are some other essential criteria to accomplish that.

London Olympic Committee and ODA believed the Olympic projects were successful, delivered on time and within the budget. Was that really the case? Although there were

many facts to consider that the event was a “triumph”, many believe projects were not delivered within budget and there was an undelivered failed project. Moreover, from whose point of view the entire event would be a complete triumph, success or failure still arguable? This research believes that there were many perspectives and different opinions about the games and therefore, business, user and suppliers point of views were explained to understand why there would be always different opinions and perspectives on the events.

In order to create successful and valuable projects “sustainability” becomes paramount for project management. The researcher proposes that project management has a lot to learn from sustainability. Especially, Velodrome Park and Wind Turbine projects represent great examples of success and failure, respectively.

Highlights:

- Project management lagging behind sustainability development
- Sustainability is a new element of project success
- Sustainable project management will create a better project environment
- Velodrome Park can be a great example of sustainability for project management to minimize the failure
- The seventh element is sustainability in performance objectives
- Success is a fluid and subjective terminology therefore cannot be generalised

Introduction

Great Britain had a fantastic opportunity to host a major sport event known as the London 2012 Olympic games. In many ways, London and other cities of Great Britain benefited from the games. For instance, the regeneration of East London, encouraging healthy living style, displaying an immense care for environment and one living planet principle were the main themes for the games.

The Olympic focused on how to create sustainable games, set out many objectives and targets in order to accomplish and deliver the projects. They had to manage hundreds of projects, choose the right contractor, build new venues, restore and improve the urban infrastructures. For instance, the projects, Velodrome Park and Wind Turbine, had a set of targets in delivering the sustainability ambition; were delivered but also some failed. During the bid process it was promised that 20% of the energy demand of the Olympic Park would be delivered from renewable energy resources. However, partially some of those promises could not have been delivered.

Velodrome Park, designed by Hopkins Architects and ultimately, the cost was £105 million for the project. It also represents a prime example of sustainable building. Secondly, Wind Turbine project failed and the ODA could not deliver its promise. Consequently, understanding these two projects, whether success or fail, will provide a tremendous help in order to shed some light on

project management literature, sustainability and make sure the same mistakes wont be repeated again. Therefore, sustainability was proposed to be the new “seventh element” for performance objectives. So the question becomes paramount; “Should sustainability be added to the criteria measuring the Velodrome Park and Wind turbine projects success or failure?”

Chapter 1: Literature Review

In this chapter a brief history was conducted over success and failure criteria, information on three project interests (business, user, supplier), their point of view explained. And finally, crucial link to sustainability were described at the end. The idea was to show that every project interest has its own perspective according to their needs, it is possible to deliver successful projects and project management needs to pay more attention on sustainability.

1. A Brief History of Success and Failure

1.1 At A Glance Project Success

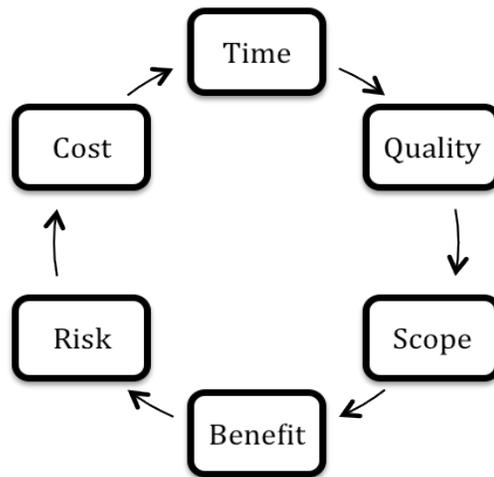
Early evaluation of the factors of success and failure has been defined and carried out in many different ways. For instance, by investigating project managers' influence on projects, Rubin and Seeling were one of the first researchers to introduce success and failure factors in 1967. Soon after, in 1969, Avots came up with project success and failure criteria. He concluded that the wrong choice of project manager, unplanned project closure, lack of management support and inadequate personnel were the reasons that projects fail. On the other hand Kerzner (1992) proposed two different definitions; "Immature" in which the project is on time, within budget according to specifications and "Mature" minimum of agreed scope changes without changing the corporate culture

According to Turner (1993) successful projects are on time and within budget, it provides a satisfactory benefit to the owner, achieves its objectives and targets. Wateridge (1998) also concluded that the project meets its defined objectives, quality thresholds and profitable for the owner. Moreover, many others such as Wateridge, Turner, Pinto and Slevin and Mccoy, all agree upon; cost, time and quality should be used as success criteria, but not exclusively. On the contrary, Atkinson professed that it's time to accept other success criteria in addition to "The Iron Triangle" and define a new framework. In conclusion Atkinson, adds the information system, benefit to organisation and stakeholders to the Iron Triangle and called it "The Square Route" (Atkinson, 1999).

Implementing IT projects, "The Standish Group" found that management support, customer involvement and project planning have a good influence for projects (Zwikael, 2006, et al). Schwalbe (2001) defines success or failure criteria based on cost, time and scope goals if requirements are met.

According to the APM (2006), there are many techniques to create successful projects and most of them are generic. An instance of this, key success indicators and define user requirements, performance objectives, current software technology, success elements and programmes. All of these techniques and investigations aimed to find a way of making a successful project. If a project on time and within the budget it will value the project team and concern the needs of the users and stakeholders (Toor and Ogunlana, 2010)

Table-1 Performance Objectives



(Adapted from OGC, 2009)

The perception of project success has progressed continuously, however the evaluation of project success frameworks alone cannot guarantee the correct implementation of project objectives. It doesn't look like an easy endeavor to describe or define project success. It is a matter of which dimensions best represent the outcome of project success. This could be any specific requirement in terms of project context such as objectives, sustainability and stakeholders. All of which determine diverse combinations of success criteria and factors (Cserhati, 2013).

For instance, Large-scale construction projects are very complex and not easy to manage. They are either over-budget or fail to deliver their objectives (Millennium Dome and Channel Tunnel). Therefore mega projects require a fundamental capability to manage in terms of complexity and difficulty of those projects. Introduction of new technology into a project increases the possibility

of the project to be late, over budget and fail to achieve its original specifications (Davies, 2013).

More recently, top management support was shown to be the most important factor for a successful project. Conventional approaches focusing on project methodologies, user involvement high level of planning maybe misdirecting effort (Poon, 2013). On the other hand, Project managers predominantly emphasize on and benefit from; cost, time and quality, however, time and cost becomes paramount as success criteria. Therefore quality of projects evolves around ticking boxes and only stakeholders` expectation. There the author ponders how diligent project manager in terms of delivering performance objectives (Basu, 2014).

1.2 Why a Project Fails:

It is quite ironic that, although many project managers are aware of why projects fail, knowing the success and failure factors and using project management methods, project failure is still possible. For instance, Avots (1969) believed that high cost, schedule overruns, poor quality or failure to meet project objectives and inexperienced project managers are the main reasons for project fail. Field (1997) mentioned that, mostly, the reason a project failed was by not taking the project scope into consideration. In another article, Baker (1997) concludes that project failure is in a state of flux and O'Brochta (2002) says that project success is not precise. Based on

Lewis findings, approximately 70% of all IT projects fail to deliver their objectives (Frese, 2003).

Many studies have shown that most projects do not deliver time and budget objectives or fail to fulfil customers' or companies' anticipations. Some researchers point out that managerial process is the one of the reasons why a project fails (Sauser, 2009, et al).

According to "chaos report" (2001) one of the major problems of a project is that project's restart. For every 100 projects that start, there are 94 restarts. Moreover, some projects have more than one restart; an interesting example would be the "Channel Tunnel" and the "Millennium Dome" It took nearly 200 years to build the Channel Tunnel (Myddelton, 2007).

Standish Group report presented that there was a little change in making projects successful. For example there was only 34 % of IT project delivered on time and within budget. On the other hand, 44 % of IT projects were challenging. That meant they were either late, exceeded the budget or could not apply performance objectives. Furthermore, 24 % of projects failed, called off or never used. Jim Crear, Standish Group CIO, notes this is the highest failure rate in over a decade. The waste on failed projects and cost over run is estimated in the neighbourhood of over \$150 (£97b) billion (Larson and Gray, 2011).

As Meredith (2012) explained, some common symptoms of a failing project are ill-defined initial requirements, constant changes in scope, excessive changes in resources and personnel, and extreme stress/tension over

failure - can be prevented. Poorly designed project scope is the reason that one project encounters problems and fails. The scope is the first thing that needs to be established in a project. Harding points out many reasons that project fails; poorly planned schedule, new or ill-defined technology, poorly selected manager and inadequate project support and risk management, lack of stakeholder consideration are the reasons that project cannot deliver its promises (Harding, 2012).

On the other hand, Block (1983) believed that project failures stem from political problems. Over the years Block's experience identified categories of project failures and some of them are: goals, user contact, people management and methodology, planning, control and inability to communicate with users will cause to failure. When a project is poorly planned and controlled, the members of the system-building group are not sure what they are supposed to do. Work assignments often overlap, deliverables are ill defined and everyone vaguely feel messy.

1.3 Project Interests (Business, User and Supplier)

Now lets have a look at different points of views in project interests. From stakeholders Points of View "Success" or "Failure" is another perspective that provides essential information on how to proceed with a project and find out "From whose points of view success should be measured or understood?"

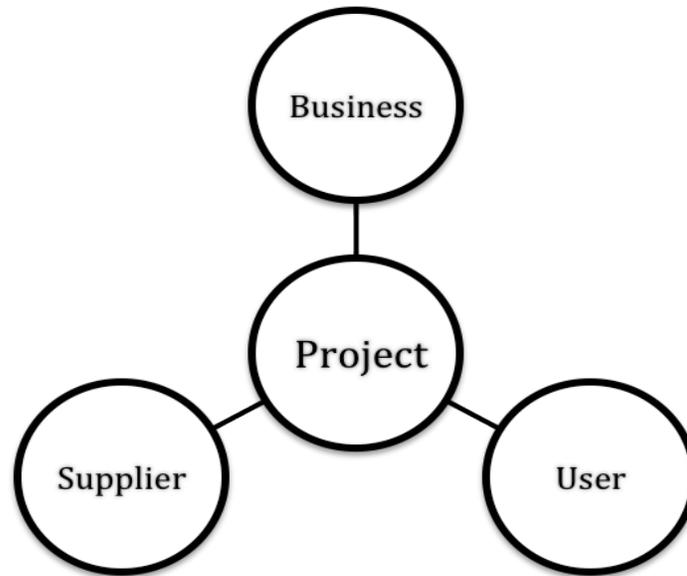
What is project interest and why is it extremely important?

It is extremely important because project manager must consider stakeholders' interest carefully and plans the project based on the project/stakeholders' interest in order to deliver it on time and within the budget.

Considering success and failure factors in mega projects one may argue that successful and failed projects are very subjective and cannot be generalized over the other projects. That is the reason every project has its own unique perspective and structure and that's why we need to consider project interest very seriously and carefully. Who are stakeholders? What do they expect from the project?

The PRINCE2 principle of defined roles and responsibilities states that a PRINCE2 project will always have three primary categories of stakeholder and the interest of all three (business, user and supplier) must be satisfied if the project is to be successful. "For completeness of the project PRINCE2 recommends that the business, user and supplier interests need to be prioritised all the time" (OGC, 2009, pp. 31-32). For example, from International Olympic Committee the interest in the Olympic games is linked to peaceful games. To identify stakeholders that will influence your project; anticipate the kind of influence, positive or negative, these groups will have on your project; develop strategies to get the most effective support possible for your project and reduce any obstacles to successful implementation (Yang, 2013).

Table-2 Three Project interests



(Adapted from OGC, 2009)

Business Interest, if a project is to be accomplished; it should meet business needs that will justify the investment in the future. If not, there won't be any value for money and represent any profit whatsoever. If the project does not represent business interests in the business case or value for money, why would you proceed with the project? It is a kind of a tricky question that stakeholders would ask, understandably. Thus, success will be analysed based on these factors; value for money, viability of the project, justified investment, meeting business needs, improving business strategy, benefiting the stakeholders and so forth. The business standpoint must emphasize these important prerequisites before a project commences. That is the only way a project can survive throughout the course of the project. Here, the executive is compelled to ensure the business interests (OGC, 2009).

Business perspective values the impact of the profit and loss (also competition, profit expenses, sales and costs). Everyone in the project team or in the organisation should understand the business perspective, for example, how this project will be value for money and everyone will benefit from it. Thus, business perspective has a very significant role in any project and at any organisation (Berkun, 2008).

As Berkun (2008) indicated, there are few good business perspectives and questions need to be investigated. For example, why is this project needed for our business? What unmet needs or desires do our customers have? On what basis will costumers purchase this product or service and what will it cost?

In the *user/customers'* interest, success is something that satisfies the user expectations. If the product or project does not satisfy the user, the project will be deemed a failure. Customers are the ones who will be able to try, benefit and use the product (OGC, 2005). It is the most important and critic perspective of the project interest. The reason is that when a project is made for customers' interest, it is vital to understand who those customers are and what changes or improvements will be valuable in order to satisfy their interest in the project. Without doing this, a project will not be considered successful (Berkun, 2008).

PRINCE2 methodology draws a strong line between the business interest and the needs of those who will benefit from project's output. The user's point of view should be represented by individuals or groups. The costumer's process needs to be specified and elaborated in the project. It is the main

point that to deliver those desired outputs and ensured by Senior User (OCG, 2009).

If a project is to be successful project team “must have” or “should have” a great link or a close partnership with project sponsor. Lacking in user participation, or lack of user support in the project can lead the project team to the wrong direction and cause extreme scope creep (changes that cant be easily handled or controlled). Hence, continuous partnership and communication should be maintained throughout the project (Richardson, 2010).

Supplier interest is a contractor, consultant or any organisation that supplies resources to the project (APM, 2006). They provide resources, goods and services to the projects Interest revolves around materials. Here, Senior Supplier occupies a very fundamental position in the project (OGC, 2005).

Supplier most of the time provides raw materials or other resources that project needs. When projects requires a significant supply of external purchased components, the project manager needs to take every step possible to ensure steady deliverables. “Firstly, the project manager has to ensure that each supplier receives the input information to implement the project in a timely way. Secondly, manager must monitor the deliverables so they are met according to the plan. In the ideal case the supply chain becomes a well-greased machine that automatically both draws the input information from the project team and deliver the products without excessive

involvement of the project manager. For example, in large-scale construction projects, project teams daily must face and satisfy enormous number of supplier demands” (Pinto, 2009, p.59).

On the project board three projects interests (business, user and supplier) has to be evaluated due to its affect on the entire project and important of internal and external stakeholders. An effective communication with business, user, supplier and stakeholders is an important sign for a successful project.

Consequently, everyone’s understanding of success depends on his or her expectations, and interests in the project. Consumers may want excellent facilities, business looks for profit and suppliers want to sell their stock or products.

1.4 An Overview of Sustainability in Project Environment

In this section the idea was to look at whether sustainability could be part of performance objectives in project management as a seventh element. Because in any project, socially, environmentally and economically, consideration and maintaining a project is fundamental, that’s why sustainability is paramount.

“Sustainability” is a term coined in Brundtland report of the World Commission on Environment Development (WCED, 1987). “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

International Institute for Sustainable Development (IISD) suggested definition for sustainable business “...adapting business strategies and activities that meet the needs of the enterprise and its stakeholders today, while protecting, sustaining and enhancing the human and natural resources that will be needed in the future”. Therefore, traditional business management systems exclude environmental and social sustainability aspects and project management needs to agree and align with all aspects of sustainability (Labuchagne, 2005).

Sustainable life is maintaining the planet without exploiting, destroying and damaging resources. Therefore, sustainable development moves towards economic, environmental and social protection, but these dimensions should not be detrimental to environment (Silvius, 2012, et al). Meaning of this, to use available resources efficiently, do not deplete Earth’s resources, sustain and maintain the planet so that next generations will be able to benefit from it. It is also the environmental concept that makes sustainability special. Hence, “sustainability is about the balance or harmony between economic, social and sustainable environment” (Schipper, 2013).

The core of sustainability indicates a notion of economic prosperity, protecting environment and its equity. The main concern of sustainability is that of protecting the Earth and its resources. In the business world that means “people, planet, profit” (3Ps). The primary objectives for most companies are to produce profit and stakeholder value and that is well emphasized in business plan, strategies and policies. There are financial advantages for business to have a sustainable policy. It can help to reduce the cost and be cost effective and eco-efficiency project (Silvius, 2012 et al). In today’s world, the capitalist mentality way of producing products or materials, mostly extracted from Earth’s resources in an unsustainable way. “Take-Make-Waste” business model is no longer sustainable (Schipper, 2013). Therefore, Sustainable development is the new ‘Zeitgeist’ of the 21st century. This is particularly important for the construction industry, as construction activity generally has a greater impact on the environment than other industries. Hence, an urgent needs to apply sustainable development principles to construction industry practices (Zhang, 2014).

The International Olympic Committee (IOC) formed the concept of legacy and sustainability that became an important motto for the London 2012 Olympic games which made the host city implement and undertake social, economic and environmental measures. Climate change, healthy living style, regeneration of East London, biodiversity, and inclusion, encouraging people to think and support the idea of sustainable life and planet were the themes of the games. This was the most ambitious project in the history of the Olympic

games in regard with its scope, level of change and this mega project had to deal with sustainability legacy in constructing and creating Olympic sports venues (Silvius, 2012 et al).

Now, let us have a look and see what are those other arguments on sustainability.

McNeil believes that the idea of “sustainable development” sought to widen and justify, instead of step-up-to-the-plate and challenging the established wisdom. Likewise, Simon Dresner argued that the idea of sustainability has emerged from pessimism and human beings being unable to cope with challenges of an uncertain future. Consequently, sustainability cannot be seen as a new concept or notion and, they believe, it is a new way to redirect.

Another opinion claimed that sustainability was seen as an oxymoron and as Tomi Kallio, Piia Nordberg and Ari Ahonen explained that it was obvious that sustainable development was powerful and a vital notion; however, because of its ambiguity, sustainable development has no influence and impact to change. Olympic games also have a sustainable legacy that is also a vague idea. “As it tries to satisfy the games’ insatiable drive for faster, higher and stronger (growth) while delivering equality, solidarity and accountability across all sports and groups around the world” (Girginov, 2010, pp.430, 431).

Another strong argument, according to Eid, believed that project management has not achieved to address sustainability agenda (Eid, 2009). Silvius (2012) also said, projects and sustainable development are probably not “natural

friends”. All of these disputes have different standpoint and mentioned in the discussion.

1.5 Triple Bottom Line Dilemma and Sustainable Business

The definition of sustainability implies that more than just the economic costs and benefits of a government policy or business strategy need to be taken into consideration. Here, the ‘triple bottom line’ approach –the inclusion of social, financial and environmental criteria and objectives – is important when assessing a policy, project or resource reallocation will meet agreed objectives. Moreover, Proctor (2009) asks that “ *how can you assess the worth of a project that will provide benefits to the local community by increasing employment levels, but at the expense of a vast decline in the environmental conditions of the local surroundings*”? So here the point is a business must be sustainable as referring to the triple bottom it is not all about profit and loss anymore or it is not all about cutting costs and driving the profits as Dr. Steer (2013) believes. Such projects must not have an appreciation in the business environment. Sustainable business must focus on 1) inclusive (diverse business owners rather than cartels or monopolies and value human resources: Employees, and Ownership by employees,) 2) financially sound (financial control, cost, and benefit are considered), 3) healthy business (quality on stable output) and care about resources (waste management for example).

Fotwe and Price (2009), refers to sustainability dimensions “if sustainable

need to be appropriately addressed. That is also rooted in consumption of natural resources by people's behaviour. Here traditionally, construction related projects mostly investigated in economic dimensions and neglected social dimension. In construction environment issues are related to built products, workforce, operation, maintenance, refurbishment and also construction materials, these are mostly done unsustainable way. In conclusion, although construction related projects slowly address to the importance of sustainable development should be given due consideration in any such sustainability appraisal will be determined by awareness of the issues and framework for applying the issues. Therefore more focus on social issues in terms of sustainable development. In this industry therefore, triple bottom line is invisible and ambiguous. It also has a dark side to it as mostly projects predominantly driven by profit. This dilemma needs to be overcome.

Given the fast changing environment of the construction industry with challenges such as skills shortages, the rapid advancement of information and communication technologies, and the increasing prioritization of issues such as sustainability, environmental protection and climate change, the role of project managers and expectation from projects itself is challenging. More and more projects have to deal with more increasing demand (Bon-Gang, 2013).

Overall, a proper sustainable business generally revolves around people profit and planet and projects must consider those important facts. The dilemma here is paramount because it is not all about profit it is about "people planet and profit".

Chapter 2: Research Methodology

Firstly, a short summary of the literature review was provided to remind of the research's overview for the readers. The research developed few important questions such as "from whose point of view are the Velodrome Park and Wind Turbine projects considered a 'success' or 'failure?'" "What are the success and failure factors of Velodrome Park and Wind Turbine?" "Could sustainability be a new success element of performance objectives?"

By asking those questions this research aimed to find out there will be always different perspectives and interest in the projects from business, user and costumers point of view.

2.1 Research objectives and Aim:

- To prove that every project has its own perspective, every project's perspective is variable, open-ended and subjective;
- To learn, from whose point of view (business, users and suppliers), were Velodrome Park and Wind Turbine, deemed a success or failure;
- Sustainability is another measurable objective (the 7th element), or criteria, that needs to be taken into consideration when conducting or evaluating a project.

The aim of this research was to indicate and present two important cases; one successful (Velodrome Park) and the other one failed (Wind Turbine). Why do that? It was fundamental to realize there are successful projects; many lessons can be drawn from them at the London Olympic Games.

2.2 Theoretical Aspect and Qualitative Data

In this research, interpretivist theoretical perspective, qualitative data collection techniques and secondary data were used. It was a crucial interest to use interpretivist paradigm, because the perspective-seeking methods tend to be more interpretivist. For example, using phenomenological perspective to generate inductive approach for qualitative data is the most commonly used method when the research focuses on the text and documents. The inductive approach is vital for qualitative data because the data can be extensive and put into a brief summary, plus, can be linked to research objectives so that the link becomes transparent and justifiable. It also has a tendency to work out the meaning of the collected raw data (Thomas, 2003).

When investigating what to exemplify or show as great success example, the thought of generalizing Velodrome Park's success in order to enhance other failed projects became essential, but only as a typical or classic example, because one project's success criteria may not be applicable for the others.

Also to consider in the research methodology, is perspective. Whose point of

success and failure factors from business, user and supplier points of view. The link between the theory and the research was that the interpretivist theory believes that all the devoted and planned interests are subjective. The theory also points out that every single interest differs in its own perspective and understanding of phenomenon. The world cannot be perceived from just one aspect or perspective at all.

2.3 Collecting the Data

So how did this research form? How was data collected and analysed? At the beginning of investigation the data collected was based on documents, journals, articles, newspaper, and legacy learning online sites provided by ODA. There were other documents, mostly provided by contractors, such as expedition, ISG for Velodrome Park.

The way the research was progressed in order to answer the question was a fundamental point. The researcher realised using two projects and answer how a project could strive to be successful was beneficial for the research. Thus, Firstly, I did literature review to explain a brief history of success and failure. So that I would be able to understand why a project failed and learn what those success, failure criteria and factors were. Secondly, I have also provided second part of the question from whose point of view success? In that part, I have benefited from PRINCE2 projects interest idea. Project interests consist of three main stakeholders in the project: business, user and supplier. Every interest has its own success perspective. Researcher believed

that all these three perspective would look at projects differently based on their needs. Thirdly by looking at the greenest project at Olympic games researcher have also made a link to sustainability. Because it is the sustainability link to the Velodrome project made it very important. Same importance was applicable to Wind Turbine if it was not failed to deliver.

Chapter 3: Data Analysis

In this chapter gathered information by literature review was analysed and examined. Firstly, information about the Velodrome park project was presented and following successful key elements about the project. Then comes after, the wind Turbine project pondering why it has failed and what were those reasons behind the project.

Sustainable versus Un-Sustainable?

3.1 Velodrome Park Project

The Velodrome is elegant, unique and beautifully architected and is probably become the most important project of the Olympic Park. It is one of the most efficient buildings in the history of the games.

Velodrome Park, designed by Hopkins Architects with 6,000 seating capacity, an entirely permanent building from the outset, with the greatest sustainability features, contractor, ISG (Interior Services Group) and Project Manager, Geoff Grant, Velodrome Park's project aim was to host the Olympians and Paralympians' demand. On the other hand, Velodrome Park cost was £20 million in 2004 and was to be completed by 2012. Ultimately, the cost was £105 million for the project. The project was completed in January 2011, (ahead of the original June 2012 schedule). It was the first venue to be completed at the Olympic Park site. The roof of Velodrome Park with a double curvature, the shape often resembles "Giant Bridge". The cable net is double

curving which makes it very light structure and lighter than the one in Beijing (Douglas, 2010). The impact saved both money and time -£250m vs. £95m- and 3,000 steel at the same time (ODA, 2011b).

The ODA was also interested in environmental conditions inside the Velodrome Park, such as thinning the air or setting the right temperature. That is what they believed to sustain track temperatures to allow riders higher speed. They also wanted to control and minimise the draughts and create natural ventilation at the seating level so that spectators won't be affected by hot temperature (Douglas, 2010).

The Olympic Delivery Authority (ODA) set a number of sustainability and material objectives; through careful consideration and integration of the architecture, structure and building services the design has met or exceeded these requirements:

- The ODA set a target for 20% of all materials to have recycled content. Velodrome Park project succeeds at 28%.
- The ODA target for key materials responsibly sourced was 80% the project achieved 98%.
- The ODA set a target of 50% of materials to be transported by either train or water. The project achieved 78% (by weight) of all materials transported by rail (ISG, 2011).

Velodrome Park received many awards, including from Building Research Establishment Environmental Assessment Method (BREEAM) praising,

“excellent”; it is the greenest venue in the Olympic Park, delivered all sustainability promises or exceeded, it is one of the most efficient buildings in the history of the games.

3.2 Successful Key Elements of Velodrome Park

Velodrome Park is a very smart piece of high design and engineering that encapsulates many success criteria in the design and that’s what made the venue a most important and favourite project of the Olympic Park. It is sustainable, self-sufficient and was carefully planned, which was also delivered on time and exceeds its targets and objectives. The trigger was to create the Velodrome Park project and the idea of building a Velodrome Park in London was worth of taking the risk. In this part readers will be able to understand what made Velodrome Park successful and sustainable.

“A powerful team and strong communication skill”

“Be passionate to put yourself in the mind of the users/customers and empathizing with the local communities”

“Giving attention to project details” provided an opportunity to succeed in planning Velodrome Park.

“Creating a warm environment to work” was another aspect of success criteria.

“Knowing the details of the project” is another way that leads to success.

The fundamental points and key elements, were clearly planned objectives, extreme details, communication with stakeholders and an integrated team from the beginning and a good project team synergy were key elements of the project (Hartman, 2012).

3.3 Wind Turbine Project

There was another challenging project, the Wind Turbine. During the bid process it was promised that 20% of the energy demand of the Olympic Park would be delivered from renewable energy resources. However, this did not happen, hence, failure was inevitable. A 120-metre wind turbine was proposed for Eton Manor, to the north of the park site. The project anticipated supplying energy to 1,200 homes over a year. At the end, there were many problems related to health and safety regulations, design and contractors also did not want to take the risk. After two years, there were complications between ODA and suppliers and the turbine project was cancelled.

Shaun McCarthy, the head of CSL, said: "For us, a commitment is a commitment and we expect LOCOG to deliver the agreed 20% carbon savings. LOCOG have told us in theory how they will deliver these savings and we believe that this can be done. As an assurance body we need to see the evidence of how this can be achieved..."(CSL, 2011).

3.4 The Cancellation of Wind Turbine

The commission reports directly to the Olympic Board and publicly via its website, on the sustainability plans, objectives and progress of the organisations responsible for building and delivering the games. The ODA has informed the CSL that the Wind Turbine project was no longer viable due to project constraints and it was unlikely that a supplier would take over the project to deliver. Consequently, the project was cancelled.

CSL agreed and supported the decision taken by the ODA to cancel the project, on the other hand CSL professed that the ODA still has to deliver agreed commitments on carbon emissions: “Across the site as a whole, sufficient on-site renewable energy generation capacity shall be installed to meet at least 20% of the annual carbon emissions of the venues and other buildings to be retained within the Site in the Legacy phase, Planning Conditions, LTD1.3,” (CSL, 2010). However, renewable energy promise was disqualified. LOCOG said they would deliver 20% of electricity during the Games from new local renewable sources, but have delivered very little. A Wind Turbine was scrapped and not enough work was done to find renewable biofuels for running the site or to invest in solar (Gray, 2012).

3.5 The Turbine`s Objectives Failed

At the verge of the bidding process there was 20% of renewable energy target from renewable energy sources on the site; however, that target was not delivered. The first plan for the ODA was to have a large-scale 2-Mw wind

turbine was cancelled in 2010 due to health and safety regulations. The ODA was unable to deliver 20% energy target (Jackson, 2012).

The park's legacy energy needs from renewable sources from 2012 onwards. Chief Executive of the ODA, David Higgins announced that the project is "no longer feasible" the wind turbine became unfeasible after new safety legislation forced substantial design changes under a "challenging" delivery timetable. After the preferred bidder's turbine supplier had pulled out – citing inability to comply with the new regulations in time for the opening of the games – there had been little commercial interest elsewhere (Hill, 2010).

As John Armit said, "We set out for ourselves a challenge in the beginning of creating renewable energy for 20% of the demand. That turned out to be quite a challenge and we failed pretty well by 50%. The reason we failed was that we put out the money essentially on a large 100 m diameter wind turbine. When it came to it, basically, commercial operators didn't really want to do it. After two years, toing and froing, it was clear they didn't want to do it. We were also running planning constraints" (CIOB, 2012).

Now let us have a look at Wind Turbine project and investigate what made it fail or led to changes in the project direction. Sir John Armit admitted that the planned project failed to deliver its promises:

"Not carefully planning the details" the ODA chairman explicitly accepted that they were running planning constraints.

"Inability to deliver the objectives" and "unrealistic challenges and expectations."

“Ambiguity of delivering project by suppliers.” Did John Armitt bring up the 100 m diameters requirement before agreements with supplier or after? Did the supplier have the information given to them? Why was a large diameter opted for, despite knowing that the turbine would be placed in the middle of the city? Such details showed how important it was to design everything carefully so that the project would survive.

“Long communication process” it took two years to finalise it and at the end the project had to be cancelled. This was for sure waste of time and money.

“Changing of health and safety regulations” that was an external factor that had an impact on Wind Turbine, because suppliers were reluctant to deliver the project due to health and safety concerns. However, the wind diameter could have been designed carefully, buying or designing a less complicated turbine might have helped to save the project as well.

Chapter 4: Discussion of the Findings

Using comparative assessment methodology based on performance objectives for those two projects was the most important part in this research. Moreover, “sustainability” becomes “the seventh element” and reasons were explained.

4.1 Comparison of Performance Objectives: Velodrome Park Vs. Wind Turbine

Project's performance can be analysed based on time, cost and quality (also, it is quite common to add risk, scope and benefit as well). Simply, the project should not exceed its budget (-/+ 10%) and needs to be affordable; it also has to be on time because every project asks the same question “when will it be finished?” When completing these two important objectives, then quality becomes paramount and the project needs to deliver the quality and has to focus on fit-for-purpose product. Nevertheless, one question shows up, “What is it that the project will be delivering?” If this is unknown, a project will be based on assumptions. Therefore, referring to the scope of the project is fundamental.

Considering risk in the project, there is no escape from it. The important thing is whether the project considers it or not; there must be always plan “A,” “B” and “C” if things get out of control. A prepared contingency plan is highly

recommended to assist the project against possible disasters. The other important thing is that the project needs to provide benefit. For example, if the new garage is not fit for a car, what is the point having a garage then? All those performance objectives are very important way to evaluate whether a project is successful or not.

The Velodrome Park is deemed a success because it was on time by 2011 (completed seventeen months ahead of schedule). There were not any issues with the time, but budget may be debatable. The reason was that the estimated budget was £20 m in 2004. After five years, all the bills added up to a cost of £105 million. That would not fit the bill, considering stakeholders' expectations. There probably would be a legitimate explanation, such as VAT and inflation and so on, but it is certain that the project was over the budget. The strength of the project was the motto and the sustainability legacy; it was a great opportunity to show that London was ready to deliver its greenest venue. For example, the cable net was lighter than the one in Beijing, the Velodrome Park saved £95m- and 3,000 steel at the same time.

Whereas Wind Turbine project took two years to deal with and while it was ultimately decided to cancel it, the project took longer and the result was not desirable and feasible. And at the end, suppliers did not want to deliver it. As supplier asserted that modified design was not easy to deliver it before 2012. That also applied to the scope, which was not clear at the outset, and in terms quality, the project showed that, due to health and safety concerns, the turbine would be dangerous to build. The result; the project was cancelled. The strength of the project was to deliver 20% of the energy from renewable

resources and ensure that the legacy of sustainability was kept. However, the weaknesses were long communication process and unwillingness of suppliers to deliver the project. Although there was an opportunity to build a wind turbine for Olympic games, the threat from health and safety constraints made suppliers not to deliver the project.

4.2 The Seventh Element Point of View: “Sustainability”

The concept of sustainability was a victory for Velodrome Park. What made it special was that details collaborated with sustainability aspects. That is why performance objectives should also include sustainability. Projects such as Velodrome Park benefited from almost every aspect of sustainability development. Velodrome Park may not be the greenest structure in the planet but it was the greenest project in the Olympic Park. Why is the concept of sustainability that important for project management?

Firstly, the concept of sustainability is a very important subject in order to protect the environment and use available resources efficiently and carefully. The idea here is to raise awareness and consciousness when making projects. Using the sustainable development perspective highlights the possible concerns and damage to the environment, but also respect for the planet. Hence, a better sustainable understanding for project management.

Secondly, in relation to making projects, it is certain that projects can be more harm than good. Indeed, it did harm in terms of time and budget and Wind Turbine failed to deliver its sustainability objectives. Making projects that have

no value or concern for the environment, people and communities will fail in the future. Thinking about carbon emissions, footprints and unhealthy materials or not using environmentally friendly materials will make the point clearer. Using the right materials in the first place made Velodrome Park more sustainable. That is how environmental concerns emerged in the project. An instance of this: thinning the air, setting the right temperature for cyclists.

In summary, project management has got to understand all aspects of sustainability in order to create a better environment and sustainability related projects. Obviously, Velodrome Park project proved that a project has a strong link to sustainability and hopefully this will become more visible for other projects. That is the reason the research took place. However, there are many reasons that Project Management needs that aspect. Sustainability has a legacy for next generations, making environmentally friendly projects, helping people to live in a more sustainable way, raising awareness about environmental problems, healthy life style and climate change. It also has social and economic dimensions that society can benefit from. Corporate organisations have, also, a lot to learn and can help spread the word. Hence, sustainability offers a great environment for project management and cannot be seen neutrally or unsustainably.

But, what is the common sense to have sustainability related projects? In short, there are many opponents to sustainability. Although there was opposition and questioning whether sustainability adds value to project management or not, some scholars believe that sustainability is unattainable and that it is an ambiguous concept. According to McNeil, sustainability

justifies the established wisdom. But, here the argument should be the other way around. Since sustainability is a new concept, it can appear to be against established wisdom because it offers a new way of understanding this planet that we are living on. Therefore, it stands out from traditional or conventional ways of thinking. It will not support established wisdom because established wisdom itself creates vague and ambiguous terminology. One can ask, whose and what is this established wisdom? Who do you refer to then?

Similarly, Dresner argued that sustainability could not be a new concept, but that it is a new way to try to redirect. It might or might not be a new way of manipulating or redirecting; there is one thing that corporate organisations have to bear in mind is that they cannot exploit and damage to the earth's resources. They have to be considerate and it seems that sustainability can help them approach that new concept. Saying that materials should be environmentally friendly, reduce carbon emissions, reduce the affect on climate change and reduce carbon footprint and many others. If these are not satisfying, what are those other concepts that are available to us? It seems, not many. Consequently, either it is a new way of directing or not, for a little while, sustainability is the only concept that focuses on and can be used in relation to ethical and conscious consumerism.

The final argument comes from Eid, believing that project management has not evolved to address sustainability agenda and Silvius also believes that projects and sustainable development are not "natural friends". First of all, by explaining the Velodrome Park project in this research, it is believed that PMs have the ability to understand and address sustainability. But, that, itself, will

not be enough to spread the idea of how important it is to make sustainability related projects. In many ways sustainability was at the heart of the games. That is why I also concluded that project management has a lot to learn from sustainability, they may not be natural friends, but they are not enemies at all.

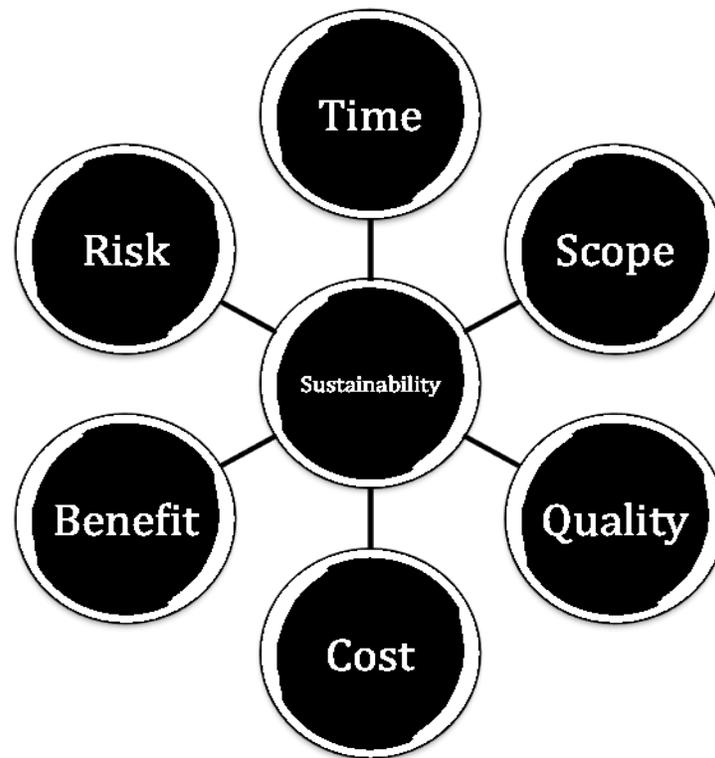
Chapter 5: Conclusion

With introduction to sustainability as a new element to consider for more comprehensive evaluation, communities or organizations for project management could benefit from adding another perspective when commencing a project. This is important because it gives a new understanding in creating a better project environment.

5.1 “Sustainability; A New element of Project Success”

When managing a project, performance objectives are great of use and help but by looking at only those criteria projects may fail. The traditional way of making project focus on time, cost and quality and does not have concern about other important aspects. That is why sustainability becomes vital in projects. Because sustainability offers a positive attitude and a legacy for next generations and that will add value to the project and provides different perspective. Consequently, sustainability offers a great environment for

project management and shall not be seen as neutral, ambiguous or unsustainable. Thus, in this research performance objective needs the seventh element “sustainability” as a new element.



Above “the seventh element” of performance objectives

Furthermore, Velodrome Park proved that successful projects are possible. Its design, the roof, the track and all the other little details made it very unique and successful project. That is why project management has to learn from it in order to prevent future project failure. Specifically, when considering environmental concerns, Velodrome Park becomes more significant.

As some believe that sustainability and projects are not natural friends, that

arguable, I believe a positive attitude towards creating environmentally friendly projects will have a massive impact on sustainability related projects. Therefore, sustainability and project management have to understand that there is a strong link between them and that link is that sustainability does stand out and is able to create a better project environment. For example, more carefully designed and environmentally friendly materials and reducing carbon emissions are all great objectives for projects to take into consideration.

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