

Organisational structure of client teams in two successful infrastructure projects

Tsholofelo Mosalaesi,

School of Construction Economics and Management, University of the Witwatersrand, Johannesburg,
South Africa

(email: tsholoshnimosalaesi@gmail.com)

Samuel Laryea,

School of Construction Economics and Management, University of the Witwatersrand, Johannesburg,
South Africa

(email: Samuel.Laryea@wits.ac.za)

Abstract

A number of professionals often work in a client's project management team and play various roles. While textbooks may identify some of the professionals and their roles, little empirical research has been conducted on the structure of such client teams and the critical role of the client team leader in leading the infrastructure delivery process and managing the whole professional team to perform their roles successfully and deliver the project to achieve the intended objectives and value for money.

The client teams responsible for two successful infrastructure programmes in South Africa were examined in this study. The aim was to ascertain the nature of the team structure in each case and its influence on successful delivery of the infrastructure programmes.

Data collection was undertaken using semi-structured interviews with eight (8) members of the team who were both involved in the two case studies. The same members who were on the Wits Capital Projects Programme were tasked to deliver the New Universities, however with the New Universities, more members were added due to the nature of the project. Data was also collected using documentary analysis and listening to one detailed presentation by three key members of the client's team including the client team leader and the client himself.

The findings indicate that the organisational structure of the client team in these two cases was hierarchical in terms of reporting lines, but had flexible interaction between members of the team. Although there was a clear hierarchy, various team members referred to structure of the team as 'flat structure' which implies that although there was a hierarchy in terms of leadership and membership of the team, the team members operated very much as equals within the team and there was an open door policy in terms of the interaction between the team members.

This study develops a systematic understanding of the contemporary structure of a client's infrastructure project delivery team set up for programme or project delivery to enable successful achievement of the intended objectives.

Keywords: Client team, client team structure, infrastructure programmes, organisational structure.

1. Introduction

Construction projects are built by people. The general conception of construction projects is that they undergo processes or phases as action steps to be carried out as intended from the beginning. These processes are generic for all construction projects and they have been established in the early ages of the modern construction industry in terms of constructing teams in construction projects (Latham, 1994).

There are common relationships which happen between the people involved in project delivery, where they have to work together across all the stages of the construction process. The main party to these relations is the client. The key role to be performed by construction clients is to initiate the project. A client is an individual or organisation who executes construction projects for themselves or for somebody else. The responsibility of the client is to ensure that the needs of the end-user are achieved and also to finance projects. Clients are the major influencer of construction processes and project delivery outcomes (Lindahl & Ryd, 2007).

According to the Standard for Infrastructure Procurement and Delivery Management (SIPDM) published by the South African Department of National Treasury in 2016, the primary role of the client is to initiate, commission and pay for the infrastructure project. “The client owns the business case of the project and needs to provide effective leadership of the project throughout the project life cycle, commencing at a strategic level ending at the close out of a project after the beneficiary of the project has accepted and operates the delivered infrastructure” (SIPDM, 2016, p32). Role performance of the client has to be done with the use of in-house resources. However, at times clients do not have the necessary resources to perform their roles, hence the need to use external technical resources. These external resources include technical advisors who advise and manage activities associated with the initiation of projects, the formulation of the client’s specific requirements during the initial stages of the project including a range of technical matters. These advisors act as client’s representatives and function within a team environment (Hapuarachchi & Senaratne, 2011).

For the purpose of this study these advisors are referred to as the ‘Client Team’ and it is defined as the team that possesses substantial technical expertise in the field of construction, which is responsible for providing advice on the project and construction matters in the early stages of a project before the appointment of a project manager (HM Treasury: Procurement Guidance Note No 1; Latham Report, 1994; Macaulay & Ramsey, 2002 & Telford, 1997). According to the Construction Industry Board (CIB, 1997), the Client Team is defined as the “independent advisor with a knowledge of construction and able to understand the client’s business needs and objectives including any special needs of the users. Engaged very early in the project to give impartial guidance on the best way to proceed” (Murdoch & Hughes, 2001). The SIPDM defines it as the team that provides advice and also manages activities associated with the initiation of projects, the formulation of the client’s specific requirements during the initial stages of the project and a range of technical matters. The team does not take the role of the client; the client will still need to be involved.

Two successful infrastructure programmes have been delivered in South Africa in the past 10 years. The first one is the case of the Wits Capital Projects Programme (2008 – 2014) in which a portfolio of 40+ projects totalling 1.5 billion Rand of expenditure was successfully delivered within 5% of the control budget. Most of the project team members that delivered the Wits projects were appointed and assigned with the responsibility to deliver a new universities project which comprised on the development of the Sol Plaatje University in Kimberly, Northern Cape Province; and the University of Mpumalanga in Nelspruit, Mpumalanga Province.

Therefore, the aim of this study was to examine the nature of the team structure in each case and how the client’s project team leader performed his role to ensure successful delivery of the infrastructure programmes. Possible relationships between team structure, role of the project team leader, and the outcomes achieved in both cases were briefly explored qualitatively.

2. Aim and Specific Objectives

The aim of the study was to examine the nature of the client team structure in the two successful infrastructure projects and to examine how the client team leader performed his role to ensure successful delivery.

The study is therefore set up to investigate the following specific objectives;

- To ascertain the structure of the client team that delivered the infrastructure programmes successfully;
- To examine the role of the client team leader in the successful delivery of infrastructure programmes; and
- To discuss the impact of the client team structure and role of the client team leader on the project outcomes achieved.

3. Literature Review

The performance of roles within a team environment is to be done with reference to the purpose for which the team is to serve. Different types of teams have different structures. Team structure refers to how the team is designed and the rationale behind its development within the organisation. In nature, teams are challenging and time consuming and as a result require ways in which they can be put to order for them to perform at their best. The need for a fundamental structure in team creation is crucial, since there are possible uncertainties and diversity which exists in teams. This requires a firm foundation and in this case it is the structure. Appropriate structures must be identified, which will ensure that the specific performance outcomes of the team are achieved, and it must also make sense to the team members. The way in which teams are structured has an influence on the delivery outcomes of projects in the sense that teams that are structured to be best suited to achieve the client's objectives in most cases successfully meet them.

Team structures can be looked at from two levels; within the organisation and within a team. Different organisational structures include functional, process, product, market, customer, geographic area, matrix and lastly the combination approach. The structure in which teams are organised will be dependent upon the team type, that is, work team structure will typically include the vice president at the top of the hierarchy, followed by managers and lastly the customer service teams (Aranda, Aranda and Conlon, 1998, p. 2).

Specific team members within a team have to be responsible for the leadership of the team and this is a matter of relationship with the other team members. In most cases the formulation of teams follows the functional leadership approach, which is chiefly about the main job that the leader has to undertake, or achieve and handle anything that the team needs efficiently. It can be said that the leader has done his or her job well when he or she ensures that all the critical tasks to be performed by the team or group are adequately undertaken and the team itself is well maintained and appropriately taken care of. There are specific performance functions to be performed by the leader and they include information search and structuring, information use in problem solving, managing personnel resources, and managing material resources (Zaccaro, Rittman and Marks, 2002). The primary function of the leader is to give direction, to create teamwork and to inspire people to do their best (Senarte & Samaraweera, 2013). Within the client team this leadership role is performed by its leader, who is also entrusted with the responsibility of interpreting and defining the settings of team procedures.

4. Problem Statement/Research question

Construction projects are built by people (Lichtig, 2006). These comprise people from both the demand and supply sides of the construction supply chain, those are, people from the client's side as well as people from the parties that provide professional services, works and goods required to deliver the requirements of client. Multiple teams are often involved in the delivery of a construction project (Hughes, *et al.*, 2015). The way that such project teams are organised plays a critical role in the successful delivery of projects. However, there is currently little research that has been published on the structure of construction-project teams, particularly in the context of how successful teams are structured. A systematic understanding is needed of the structure of client teams in the construction industry and the nature of the interaction between the client team leader and other members of the client team. The focus of this study is on the client team. Little evidence has been found in the literature on the nature of client teams and the critical role of the leader of the team entrusted with the responsibility of delivering a project for the client. Therefore, the following questions are investigated in this study: how are successful client teams structured? What are the critical elements of the role of the client team leader in helping to deliver the intended objectives of a project and value for money? These key questions were investigated using a qualitative case study methodology. The answering of these questions revealed aspects of the client team development, where shortcomings exist, and the nature of those shortcomings, which will serve as a basis for addressing improvements.

The main research question was: How are construction client teams structured and what primary roles are performed by the client team leader to ensure the successful delivery of infrastructure projects?

5. Research Design and Research Methodology

The main focus in selecting the research design for the study is the research question which is what the study needs to answer at the end of the day. The research philosophy used for the study is pragmatism, because it allows variations in the research approach and it also holds that the most determinant factor of this approach is the research question which is what the study has to answer. Research inductive approach was used for this research study, since the data collected on team structure and role of the project team leader client team in infrastructure projects including the team member's experience, background, competencies and skills was used to build theory around the nature of client team structure and the role performance of the client team leader. The research strategy adopted was the case study approach as two (2) cases were analysed on a particular point in time.

To specifically address the research objectives, a mono-method approach (qualitative) was used as the methodological choice where semi-structured interviews and documentary analyses were adopted for collecting data. Semi-structured interviews were used to achieve the specific objectives, where participants (the client team which was involved in the implementation of projects within the Wits Capital Project Programme and the two New Universities-Sol Plaatjie and Mpumalanga) for the interviews were identified to uncover who carried out the initial stages of the project, nature and structure of the team and role of the project leader and factors which enabled the successful delivery of the programmes.

The semi-structured interviews were recorded upon permission by the participant and then later transcribed in order to be able to analyse the data collected qualitatively. As interviews were conducted, documents were obtained and then analysed qualitatively and hence the use of a documentary analyses as a secondary data collection technique. Both the Semi-structured interviews and documentary analyses were analysed qualitatively.

6. Data Collection, Presentation, Analysis and Results

Data collection was done in a way that the specific objectives were addressed and hence the presentation was done in terms of team structure, role of the team leader and the impact of team structure and role of the team leader on delivery outcomes. The participants in which data was collected from was the client team members who were both involved in the Wits Capital projects programme and the New Universities. The total number of participants interviewed was eight (8) in number.

The data analysis method used was the categorisation of data into themes which were in line with the research objectives and this was where the transcribed data and documents were highlighted in order to identify aspects relating to the research aim.

The method for analysing data also included firstly preparing the data collected so that the analysis can take place and thereafter coding the data in terms of activities, objectives, meanings, participation, relationships, consequences, constraints, and the researchers' own reflections. The third step was checking on the credibility of the data collected which was done by asking the participants and clarifying aspects which were vague, this was then followed by interpreting the results and presenting the data. The Data were presented in a tabular format according to the themes identified which are in line with the research objectives (Theron, 2015). This method can be referred to as content analysis.

The results were as follows;

Team structure

The Wits Capital Project Programme had a client team which included the delivery manager (client team leader), procurement specialist advisor, spatial planning advisor, programme and project manager, project administrator, and the Wits executive team which was called the Wits project steering committee.

The New Universities had a client team which was made up of different specialists which included Wits governance and oversight, client delivery manager, programme and project manager, project administrator, spatial planning advisor, architectural services advisor, ICTs advisor, furniture project management, procurement and delivery advisor, procurement advisor, development and stakeholder advisor, institutional planning, academic planning, engineering services advisor, administrative support and management accountant. For a long time they didn't have a structure in the case of Wits, but with the New Universities they had a structure from the beginning of the programme.

The keywords the team members used to describe the structure was very formal manner; flexible flat structure arrangement; very informal and very flexible; there was a form of reporting to the team leader; the governance structure was more hierarchical, there would be a team leader, but within the team people will have equal say, there was no one superseding; another very specific reporting structure; it was a flat structure there in a nut shell the nature of the reporting lines between the team members was not so formal for the case of Wits, but formal in the New Universities. There was also a clear hierarchy and most of the team members referred to the structure as 'flat' which implies that although there was a clear hierarchy in terms of leadership and membership of the team, they operated much as equals within the team and there was an open door policy in terms of the interactions between the team members.

Role of the team leader

In relation to findings regarding the team leader; his role was to listen to whatever problems the team encountered and come up with a way to resolve them. He was also responsible for selecting the team

members and setting them up for successful delivery of projects. The team leader also performed the role of removing obstacles or blockages to progress. The other specific roles in his leadership was anticipating the future; never losing sight of the client's priorities; recognising, internalising, analysing and processing demands from external environment.

The leader was also a link between the team members and the Universities. The role performance of the leader included understanding the requirements and interests of the client and aligning the team members to ensure that they are achieved.

Impact of team structure and team leader on delivery outcomes

In terms of the project outcomes and success factors, it was found that Wits Capital Projects Programme achieved a relatively small deviation of 10% between the initial budget and the actual final cost. The New Universities achieved a relative smaller deviation of 1% below the control budget.

The factors which enabled success included putting in place a client team which had great trust and respect between the team members; having good project managers with good experience; ensuring that the control budget is not violated, having a team leader who is always challenging the team members to move beyond their comfort zones; having the working knowledge and ensuring that the client's interests are put first; dedication by the team members; having common purpose; the team leader's ability to manage stakeholder demands; understanding delivery management, procurement, portfolio, programme and project management, risk and change management and governance as these are the things which need to be understood in infrastructure delivery; and experience, chemistry and background relationships that you trust the person will deliver what they said they will.

7. Discussion of Study Results

The discussion of results section was done giving reference to the specific objectives in which the study was set to address. The specific objectives were; (a) to ascertain the structure of the client team that delivered the infrastructure programmes successfully; (b) to examine the role of the client team leader in the successful delivery of infrastructure programmes; and (c) to discuss the impact of the client team structure and role of the client team leader on the project outcomes achieved.

7.1. Discussion of findings relating to structure of the client team

Team structure refers to how the team is designed and the rationale behind its development within organisations. In literature there are different types of structures which exist in a team and they include work team structure, project and development team structure, parallel team structure, management team structure, and ad-hoc network team structure (Aranda, Aranda and Conlon 1998, p2; Mankin, Cohen and Bikson (2000) ; Aranda, Aranda and Conlon 1998, p2).

While the structure of project teams is generally characterised in the management literature as hierarchical; temporary structures; used to generate the right mix of knowledge and skills required for specific projects; produce one-time outputs; have diverse and specialised expertise; and also have a broad decision-making authority:

Out of all these five team structures found in the literature review; the case of the Wits team structure fall more on the project and development team structure because the team structure was temporary, produced one-time output which is the programme itself. It had diverse and specialised expertise by the members of the team, was used to generate the right mix of knowledge and skills where different members were assembled who had different expertise or disciplines.

The Wits Capital Projects Programme had clear hierarchy structure, various team members referred to structure of the team as "Flat structure" which implies that although there was a hierarchy in terms of

leadership and membership of the team, they operated very much as equals within the team and there was an open door policy in terms of the interaction between the team members.

The New Universities client team was organised within a structure which was a combination of hierarchy and matrix arrangement and here the roles changed; the team structure adopted is similar to the case of Wits in terms of the formation of the structure and the nature of the interaction between team members, but it had more role players due to the nature of the work which was to be done in the New Universities. There was clear reporting lines.

7.2. Discussion of findings relating to roles and qualities of the project team leader

According to the literature on team leadership, leadership is ability to influence the behaviours of others in particular, the followers. Due to the nature of the services delivered in the construction industry, team efforts and leadership are required in realising the projects within the industry. Inspiring individuals to co-operate and stirring all the project team members in order to perform at their best is one of the major key success factor as far as the management of a construction project is concerned (Senartne, 2015).

In examining the role played by the team leader the research looked at the characteristics of the leader and the role he performed in the nut shell and how the leadership role was carried out. According to the management literature, the typical role and qualities of the leader includes the following (Zaccaro, Rittman & Marks, 2002; Senarte, 2015);

- Inspiring individuals to cooperate and stirring all the project team members to perform at their best in line with the interests of the client.
- Managing personnel and material resources
- Making problems that accrue
- Diagnosing any problems that could potentially impede group or organisational goal attainment
- Generating and planning appropriate solutions
- Implementing solutions within typically complex social domains
- Responsibility to interpret necessary decisions and applying problem solving techniques to
- and define the settings of team procedures
- Giving direction and guidance to the team members.

However, from the data collected in this study, the leader's characteristics were strong commitment, driven by results, concern for people, influencing others, developing strategies, problem solving and managing change. These characteristics contributed to the successful performance of the leadership function.

The other roles based on the data collected included; leading the project and the people, solving problems, management of competing interests and priorities, ensuring that there's production, quality, safety, time and cost; being the integrator, owning the key planning and management processes; pulling the team members together to achieve the intended objectives, "identifying & solving blockages"; fostering collaborative working; continuously challenging the team to move beyond the comfort zones; foreseeing possible problems; to recognise, internalise, analyse and process demands from the external environment and compute that and frame and structure the work of the team; anticipating the future; and assembling the client team.

The roles and qualities of the leader identified on the literature review are similar to the ones found in the data collected in this research , however, the data collected on roles and qualities of the leader were more specific to the two cases and the uniqueness came from the role performed by the leader being to get rid or blockages, recognising, internalising, analysing and processing demands from

external environment, acting in the best interests of the client and also anticipating or foreseeing the future.

7.3. Discussion of possible impact of client team structure and project team leader on delivery outcomes

Generally, a project is said to be successful when it has achieved the primary objectives namely time, cost and quality. In order for the project to be successful, it is important to understand the requirements of the project right from its early stages and undertake the project planning which provides the right direction to project managers and their teams in order to implement the project as required. All the people/professionals entrusted with the responsibility to deliver the project have to work at ensuring that the project achieves its intended objectives (Thi & Swierczek, 2010).

The nature of the interaction between the team members impacts the delivery outcomes achieved by the team. The structure provides clear governance which is founded on principles of honesty, accountability and integrity. Ensuring that the control budget is not violated or exceeded also assisted the team members to achieve the said project outcomes. The ability of the team leader to select the right team members based on skills, experience, industry knowledge impacted positively on the delivery outcomes. His ability to unblock blockages and anticipate the future also contributed positively to the success factors.

The primary purpose of a leader is to give direction in exercising his/her authority and responsibility. The leader has fully performed his or her role when the team fulfils its objectives whereas team structure ensures specific performance outcomes of the team (Zaccaro, Rittman & Marks, 2002). This was achieved in both the case of the Wits Capital Projects Programme and the New Universities.

8. Conclusion

8.1. Conclusions relating to structure of the client team

The nature of the team structure developed for the two successful cases had a clear hierarchy in terms of the way the team was organised and the reporting lines. Although there was a clear hierarchy, various team members referred to structure of the team as ‘Flat structure’ this implies that although there was a hierarchy in terms of leadership and membership of the team, they operated much as equals within the team and there was an open door policy in terms of the interaction between the team members.

Both of the team structures used for the two cases fall under the development and project team structure. This type of team structure is used to generate the right mix of knowledge and skills required for specific projects without giving up the advantages of functional organisations. This structure can be characterised as a temporary structure, produces one-time outputs, diverse and specialised expertise and also has a broad decision-making authority.

Therefore organisation wishing to structure client teams for delivery of infrastructure project should structure them in a clear hierarchical manner in terms of the roles and responsibilities to be performed by the team members, but this is only applicable to projects of similar scale of the ones investigated. The interaction between team members should be kept flexible and informal in nature so that it can foster a working environment which is collaborative in nature.

8.2. Conclusions relating to critical elements of the role of the client team leader

In conclusion, the delivery of infrastructure programme requires the leader who is able to get rid of blockages, anticipate and foresee the future, understand and act in the best interests of the client and

also to be able to manage competing interests from the demand of the stakeholders It also need a team leader who leads the team in such a way that the expected delivery outcomes of the project are achieved as far as possible by aligning the team members to ensure that this is achieved.

8.3. Conclusions relating to discussion of the impact of the client team and its leader on project outcomes.

The two case studies achieved their intended objectives which mean that the client team delivered within its mandate. There is a need for clients to establish good governance structure in which responsibility is delegated effectively. The team leader influenced the team structure used to deliver infrastructure programmes in the sense that he selected the team members giving consideration to the interests and the value of the client. The selection was also done in a way that the team members were aligned to achieve the intended objectives. His characteristics (strategist and a visionary) made it easier to perform his leadership functions. The way the team is structured influenced their nature of the working relationships and how the leadership function was performed, including trust, chemistry, and previous working relationships between the team members and this was one of the factors which enabled the successful delivery of the programmes.

In conclusion the roles and responsibilities of the team members contributes to the type of structure to be adopted in infrastructure delivery, the selection of the team members is done by the team leader who had a role to give direction in exercising his/her authority and responsibility. The leader has fully performed his or her role when the team fulfils its objectives whereas team structure ensures specific performance outcomes of the team so since this is the case with the two case studies, it can be said that the leader effectively carried out his leadership function.

8. Recommendations

In order for projects to be delivered successfully there are various aspects to be taken into consideration one of which may include selecting the right procurement strategy and team for such delivery. It is recommended that organisations wishing to deliver their projects successfully should consider looking at the people related aspects which are of great contribution to infrastructure projects delivery and establish team structures that foster collaborative working between the team members. The selection of the team members should be done giving consideration to the requirements and interest of the client. Such a selection should be done by the client team leader as he or she is best suited to perform an oversight and governance role by providing effective and strategic leadership within the client team. It is also recommended that such delivery requires self-motivated, industry committed, inspired, honest, trustworthy, and consistent project teams because the client team that was set in place for this study had previous working relationships which made it easier for the team to work effectively together.

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