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An understanding of the missing roles in project management

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Peer review process

All papers submitted to COBRA were subjected to a double-blind (peer review) refereeing process. Referees were drawn from an expert panel, representing respected academics from the construction and building research community. The conference organisers wish to extend their appreciation to the following members of the panel for their work, which is invaluable to the success of COBRA.

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An Understanding of the Missing Roles in Project Management

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1. Abstract

There is still ambiguity surrounding the role of certain professions within the construction industry and the overlap of roles and responsibilities; the difference in terminology used to describe them means that the precise role of the Project Manager and associated roles/skills that are performed, are not well defined. Many authors have attempted to define and list the roles that a Project Manager should possess, although it can be argued that as yet, such a comprehensive list of roles/skills that makes a Project Manager competent does not exist. This research set out to investigate the roles/skills of Project Managers within a major contracting organisation in West Central Scotland, in the hope of establishing such a definitive list.

After establishing a list of the key roles/skills from existing project management literature, a number of Project Managers from within the contractor's organisation were issued with this list and were asked to indicate what roles they think they undertook within their general role as a Project Manager. Furthermore, they were also issued with a Time Role Analysis Model (TRAM) in order to determine what roles they actually undertook throughout the working day.

This research places emphasis on the fact that there is no definitive list of the roles/skills a Project Manager should possess. Furthermore it illustrates how factors such as age and experience can impact on the roles and the number of roles undertaken. The findings successfully indicate the scope of the work involved in being a Project Manager as certain historical roles/skills associated with project management are no longer the norm, with more modern roles and skills actually determining what it is a Project Manager actually does.

Keywords: Project management, Roles, Skills,

2. Introduction

A Project Manager is held to be largely accountable for delivery of a project on time, within budget and to the desired performance or quality determined by the client (Chartered Institute of Building (CIOB) 2002, p.4; Project Management Body of Knowledge (PMBOK) 2004, p.8; Burke 2006, p.22; Kerzner 2006, p.3; Lock 2007, p.21). Successful delivery of the project often rests upon the project manager's ability to plan, organise and control. In other words, they are responsible for the success (or failure) of a construction project.

According to the CIOB (2002, p.4) project managers stem from various backgrounds and are required to govern a project throughout its life cycle. In order to be able to adequately manage a project, the manager must possess the relevant leadership skills and competencies which will allow them to be a capable project manager. These skills include the ability to motivate, manage, co-ordinate and maintain the overall morale of the project team.

This implies that a project manager does not just manage their team; they lead their team to success through motivating, co-ordinating and maintaining morale. However, they must also utilise a range of other skills in order to lead the team to successful delivery of a project. Previous authors have discussed the roles executed by the project manager and the skills they require in order to be able to effectively manage their team to successful delivery of a project. Generally, the views of authors are largely similar but some authors define more functions or potential roles than others.

Fryer (2004) indicates that managers carry out the activities of planning, organising, directing, controlling and developing staff. However, in order to execute these activities project managers must possess relevant skills. Katz (1971 cited in Barber 2004, p.304; Fryer 2004, p.23; Jha and Iyer 2006, p.978; Pant and Baroudi 2008, p.125; Shehu and Akintoye 2008) conceded that these skills vary according to age and experience. Moreover, Katz classified three main skill sets a manager should possess; human skills, technical skills and conceptual skills and claimed that although the skill sets are interconnected they may be developed individually.

Barber (2004) further explains that the skills sets should be developed independently of one another in order to be able to adapt these skills suitably to individual projects. As observed by the PMBOK (2004) it does not mean that the skills described should always be uniformly applied on all projects. Each project is unique and therefore the project manager must recognise what skills are required and apply them accordingly to suit their current project.

Griffith and Watson (2004, p.31) believe the following Project Manager functions are vital; forecasting, planning, organising, controlling, motivating, co-ordinating and communicating. According to Anderson and Tucker (1994 cited in Kuprenas *et al.*, 2000, p.45) the most beneficial functions for a project manager are strong human relations, leadership, technical and administrative practice. Managers require such skills in order to carry out their functional role and can be allocated a functional role within the project but without these skills but they will be unable to adequately fulfil this role. Functions can be taught whereas skills are qualities an individual must develop on their own. Edum-Fotwe and McCaffer (2000, p.112) acknowledge that project managers become competent as a result of knowledge obtained through training combined with skills enhanced through time and experience. Being competent is the ability to execute the functional role to a prescribed standard.

Many of the skills discussed by other authors are general management skills and are not unique to project managers (PMBOK 2004, p.15). Furthermore, the PMBOK describes the following as general management knowledge and skills which can be seen in Table 1. It is unlikely that the Project Manager would require all of the above as it is probable that many of these functions will be executed by other departments. Edum-Fotwe and McCaffer (2000, p.113) concur with the PMBOK and state that while many of the skills that project managers possess are specific to construction, they believe that in order to be able to use these expert skills, they must first possess general skills to augment their expertise. They describe the basic general skills as leading, communicating, negotiating and problem solving.

Table 1: PMBOK roles and Skills

Planning	Organising	Staffing	Executing
Controlling	Financial management	Purchasing	Procurement
Contracts	Sales and Marketing	Distribution	Motivation
Communication	Logistics and supply chain	Leadership	Negotiation
Influencing	Health and Safety practises	Problem solving	Conflict

Griffith and Watson (2004, p.33) asked 50 construction managers to rank seven management functions in order of importance although the roles themselves are open to discussion as to what exactly they entail. The results are shown in Table 2.

Table 2: Project Manager Skills (adapted from Griffith and Watson 2004, p.33)

Ranking by Managers		
Most important	1	Communicating
	2	Planning
	3	Organising
	4	Co-ordinating
	5	Controlling
	6	Motivating
Least important	7	Forecasting

Authors within the built environment field are also well aware of the influence of Mintzbergs work in the 1970's which focused upon a set of ten 'work related' roles undertaken within three distinct areas (Mintzberg, 1971). These include: figurehead, leader and liaison (inert-personal), entrepreneur, disturbance handler, resource allocator and negotiator (decisional) and monitor, disseminator and spokesperson (informational). Many of these 'work' roles can still be applied today although it is not understood within the construction industry the reliance upon these roles.

Project managers undertake a number of roles when conducting their everyday activities. In order to be able to carry out their jobs and successfully deliver a project on time, within budget, to the client's specified quality and safely, the project manager must also possess the skills to competently execute the role of the project manager. The literature discusses general management roles and some of the skills a project manager should possess, however there is little evidence to suggest that there is a defined list of roles which a project manager should undertake.

3. Methodology

The main aim of this study was to evaluate the roles managers within construction undertake but to do this the roles carried out by project managers had to be established first.

The roles identified from the literature review were collated (32 in total) and inserted into a matrix in order to allow project managers to select the roles they believed they executed on a daily basis on their project. This is known as a Time Role Analysis Model (TRAM) (Sommerville and Campbell 2000; Sommerville and Campbell 2001). Respondents were asked to select the roles they believe they executed during the period of a day.

Key findings from the TRAM were extracted and discussed in detail in order to analyse the data and draw conclusions from the data gathered. In addition to the TRAM model, each respondent was asked

their age, gender and educational background as this may have an impact on the way in which they view their roles. It was also anticipated that this would allow patterns in the data to be analysed. This investigation was presented in the form of a survey. Surveys enable the researcher to obtain data from a sample of a population (Collis and Hussey 2003). Moreover, surveys allow generalisations to be made from the sample respondents therefore it is important that there is no element of bias when selecting the sample (Collis and Hussey 2003, p.66).

3.1 Research Sample

The TRAM model was distributed to 75 project managers employed by a leading international main contracting organisation, with a local office in west-central Scotland: this yielded a response rate of 24 usable returns which is a 32% response rate. The company is the largest privately owned construction solutions provider in the UK having been formed over 30 years ago: international operations posted managed revenue of £5bn in 2009. The business is made up of a range of engineering, construction and specialist services companies, which combine to provide clients with a comprehensive investment, development and management capability. They employ 30,000+ people across five core sectors: lifestyle; business; social infrastructure; transport and mining; and energy, utilities and waste.

Within the TRAM model, there were a total of 32 roles and functions which were identified from the TRAM model utilised by Sommerville and Campbell (2000). Many of the roles discussed in the literature review were covered. The roles listed in the TRAM model were adequate as participants were given the opportunity to list additional roles they executed and none of the participants added to the existing roles and functions. Furthermore, Sommerville and Campbell (2000) categorised these roles into four distinct groups: social (yellow), commercial (blue), technical (red) and survival (green) and it was hoped to prove beneficial to see which group the participants seem to place themselves within.

The TRAM responses were analysed using the descriptive method of analysis. This entailed making generalisations and commenting upon obvious patterns in the data. For the purposes of this study it was intended that the TRAM model identified roles carried out at different periods throughout the day. This would allow the researcher to see how the roles can differ throughout the period of a day. However, the respondents did not utilise the TRAM model effectively. They all selected the same roles for A.M and P.M each time. This meant that the TRAM model could not be utilised to its full potential in the data analysis. However, it still identified the roles which managers undertake and it is these roles that form the basis of the results section.

4. Results and Findings

As previously stated, a total of 24 responses were returned. The respondents to the questionnaire included project directors (1), trainee construction manager (3), project manager (6), project leader (3) and construction manager (10), other (1). This data set allowed a range of analyses to be conducted, but not all of these are reported upon in this paper. The first objective of this study was to determine the roles carried out by managers within the construction industry. Participants were asked to select roles/functions that they believed they exert throughout the period of one day as displayed in Figure 1. From the data in Figure 1, the roles selected by participants have also been ranked as displayed in Table 3.

The list of Project Managers skills as presented by Griffith and Watson (2004, p.33) contained relatively few roles in comparison to the one utilised in this study. It is interesting to see that the majority of the roles on their list do not rank as highly as expected on the table of results within this research. Also noticeable from Table 3 is that many of the 'work' roles identified by Mintberg are very lowly ranked in terms of importance within the construction industry which questions whether these work roles still apply or indeed can be considered as relevant within the modern built environment. From the existing literature some of the most important roles that a manager must execute were planner; organiser; motivator; communicator and leader. The TRAM model results concur with this, however it should be noted that literature did not stress the importance of the role managers play being at the forefront of health and safety. One of the few options which 100% of respondents selected was Safety Co-ordinator.

The roles within the TRAM model can be divided into the following categories: social, commercial, technical and survival as seen in Figure 1. Within the social category, 56% of the responses were positive, within the commercial category 47% were positive, within the technical category 71% were positive and within the survival category 65% were positive. This stressed that managers' roles are predominantly technical (highlighted red in Figure 1). It would suggest that there is no one project manager who fits all categories and executes all of the categories effectively.

The TRAM model data illustrated the roles executed by managers throughout the period of a day. It highlighted which of the roles they believed are fundamental to managing a project. The majority of respondents fell into the technical category which insinuated that there is no one typical manager who can adequately fulfil all of the categories.

Communication, giving responsibility to others and honesty were regarded as the main ways in which managers motivate their teams. It was discovered that managers regard motivation as a behaviour change and want to motivate their subordinates to create team morale and a good working

environment. It has been suggested that if the team are happy at their work, they will be more inclined to perform harder and thus achieve better results.

Figure 1: TRAM Model responses identifying the social, technical, survival and commercial groupings.

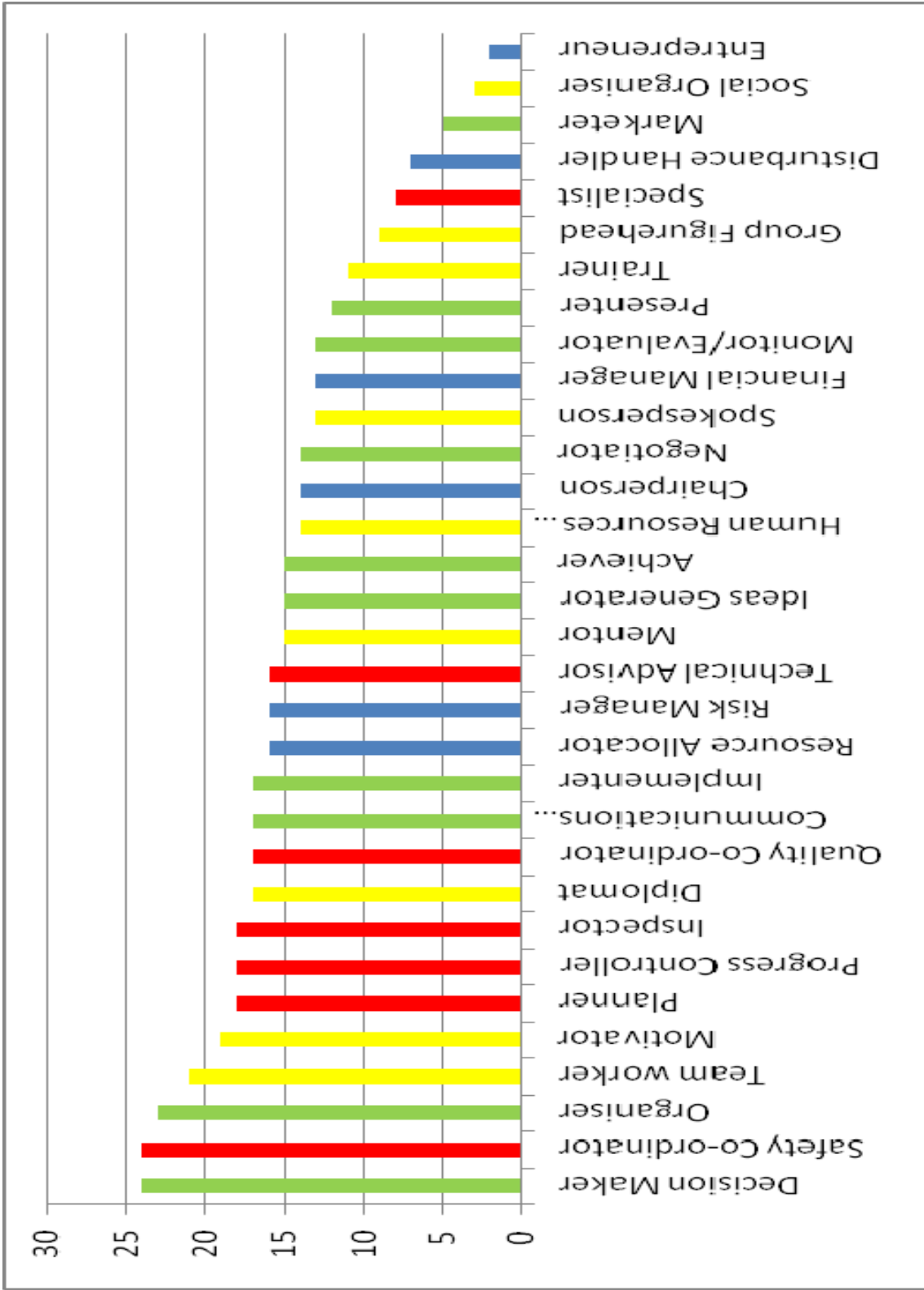


Table 3: Ranking of Roles Selected by Managers (items shaded are some roles identified by Mintzberg, 1975 and Griffith and Watson, 2004)

<u>Role/Function</u>	<u>Number of Responses</u>	<u>Percentage of Total</u>	<u>Author</u>
Decision Maker	24	100.0	
Safety Coordinator	24	100.0	
Organiser	23	95.8	Griffith and Watson
Team worker	21	87.5	
Motivator	19	79.2	Griffith and Watson
Planner	18	75.0	Griffith and Watson
Progress Controller	18	75.0	
Inspector	18	75.0	
Diplomat	17	70.8	
Quality Co-ordinator	17	70.8	
Communications Facilitator	17	70.8	Griffith and Watson
Implementer	17	70.8	
Resource Allocator	16	66.7	Mintzberg
Risk Manager	16	66.7	
Technical Advisor	16	66.7	
Mentor	15	62.5	
Ideas Generator	15	62.5	
Achiever	15	62.5	
Human Resources Manager	14	58.3	
Chairperson	14	58.3	
Negotiator	14	58.3	Mintzberg
Spokesperson	13	54.2	Mintzberg
Financial Manager	13	54.2	
Monitor/Evaluator	13	54.2	Mintzberg
Presenter	12	50.0	
Trainer	11	45.8	
Group Figurehead	9	37.5	Mintzberg
Specialist	8	33.3	
Disturbance Handler	7	29.2	Mintzberg
Marketer	5	20.8	
Social Organiser	3	12.5	
Entrepreneur	2	8.3	Mintzberg

5. Conclusions

The results from the TRAM model illustrate Project Managers jobs are predominantly technical with the social, commercial and survival roles supporting the technical roles. The lack of response to the commercial roles suggests that these activities are carried out by other members of the project team and are not directly affiliated with the Project Manager. There is no one Project Manager who can effectively fulfil this extensive list of roles. The literature provides an extensive list of functions that a Project Manager should undertake, however, the research shows that it is not possible for one Project Manager to undertake them all.

The literature also highlighted the roles identified by Mintzberg and Griffith and Watson and whilst these roles are important they did not rank highly in terms of importance to the managers questioned. Indeed it was the technical roles that came out 'on top' and were seen of greater importance to the respondents.

There has been little research investigating a definitive list of roles a project manager should undertake. The TRAM model, originated by Sommerville and Campbell (2000) seeks to establish such a list. It is a very useful tool and it raises questions as to why more analysis in this area has not been carried out. If the TRAM model were to be utilised by construction companies it would enable them to identify a job-person fit for specific projects or even individuals phases of the project life cycle.

This study set out to investigate the roles of the project manager as there is yet to be a defined list of roles a Project Manager should undertake in order to lead a project to success. The research has provided a definitive list, however not one Project Manager will be able to successfully execute all of these functions. Perhaps this could call for a mix of Project Managers in terms of age and experience in order to cover a wider base and cover as many of the roles shown in Table 3 as possible.

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