PROJECT MANAGEMENT: AN EVALUATION OF THE CLIENT AND PROVIDER ATTRIBUTE PARADIGMS

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Within the realms of Project Management, debate continues as to the desired attributes of the Project Manager. There can be little doubt that effective Project Managers are required to be competent. This leads to the search for clarity as to what competence the Project Manager needs to display in any given situation i.e. what role must be undertaken at any point in time. Clients when seeking to engage a Project Manager have a schematic role paradigm within which they expect the Project Manager to operate. This role paradigm if met, establishes the Project Manager as competent in their eyes. Whether this maps directly onto the providers' role paradigm and the actual attributes of the Project Manager is the nub of the question.

Over 7,000 individuals and organizations were targeted through a postal questionnaire that sought their responses to a range of questions relating to the expected attributes. Qualitative and quantitative evaluations of the returned questionnaires were undertaken to establish the clients' attribute preferences against those delivered by providers of the service.

The findings present a plot model showing the Provider Attribute Profile and the User Attribute Profile. These indicate areas where the perception of the requirement for that attribute varied between the groups. Underlying reasons for this divergence are considered and discussed.

Keywords: project management, competence, roles and attributes.

INTRODUCTION

Project management within the construction industry

Project Management has long been found within the construction and property industry and is one of the options open to the client for the procurement of a construction project (CIOB, 1992). Projects are accomplished according to a common lifecycle. Every project, no matter of what kind or for what duration, essentially follows the activity sequence of pre-feasibility, feasibility, design and contract, recognition, implementation, hand-over and in-service support. There are two basic types of projects those that are complete in themselves such as an oil platform or a tunnel, and those that represent a series of programme of products or projects, such as an aircraft or an oil programme (Kharbanda and Stallworthy, 1990). In the event, a project undertaken to achieve a specified objective or objectives is defined usually in terms of technical performance, budget and schedule. Project success should be measured as including completion within the allocated time period, within the budget cost, to the proper performance or specification and accepted by the client (Kerzner, 1992).

Sommerville, J and Campbell, C (2001) Project management: an evaluation of the client and provider attribute paradigms. *In:* Akintoye, A (Ed.), *17th Annual ARCOM Conference*, 5-7 September 2001, University of Salford. Association of Researchers in Construction Management, Vol. 1, 435-44.

The essence of project management

Rougvie (1988) suggests that there is probably a greater potential for confusion in the study of Project Management than any other contemporary issue facing the construction industry. The main problem being the lack of defined terminology and agreement between influencing bodies, on the required roles and attributes of a Project Manager.

For many years project management has been synonymous with a hard or structured system approach (Walker, 1996). A focus has been placed upon qualitative techniques in project planning, scheduling and control (Yeo, 1993). Even in the early 1990's project managers were behaving as though soft systems i.e. people centred approaches had only recently been discovered although they had been around for many years. The soft system approach is above all, concerned with human behaviour in organizations, and requires radically different skills in its application: a basic intellect, an ability to see more than one point of view, to think logically, to advocate and communicate become more important than applying scientific methods (Daniel, 1990).

Culp and Smith (1992) take the view that within the organization and management of a project, emphasis may be focused on organization or people. The former allies itself to the more traditional structural approach; the latter highlights the basis for the people-centred approach to project management. In the more traditional Structural Approach, control is centralized. There is an emphasis on documentation and measurement with well-defined rules and procedures, all of which have the aim of ensuring stability and predictability. There is a focus by managers on co-ordination and utilization of standard procedures. Team members each have detailed role descriptions, teams and their members have activities clearly delineated, as are the resources and their utilization within these groups.

By comparison, the people-centred approach encourages innovation, flexibility and creativity from a less rigid style of management. There is a clear definition of project objectives and an environment which attempts to motivate rather than control the members of the team who participate in decision-making within effective information flows. Inevitably, the manager requires the skills to co-ordinate both areas of the enterprise.

Project Management within the construction industry, in its basic form involves a specialist manager co-ordinating the running of a construction project from start to finish, and therefore dealing with many potential problems associated with differentiation and integration. The parameters within which the project manager controls and co-ordinates any programme centres around the basic time-cost-quality consideration. Many project managers plan their projects by developing: time estimates and network diagrams, work breakdown structures; organize by developing organizational charts and forms, and allocating resources. However, schedules, charts, quality statements and plans are not enough; one important criterion is missing, i.e. the management of people (Kleim and Ludin, 1992). People orientated aspects of the project teams requires that the project manager displays a range of interpersonal attributes and skills which ensure their effectiveness and project success.

Construction teams are an association of specialists from different organizations with inherent problems of communication (Sidwell, 1982). Due to the fragmented nature of the construction industry, the construction team as a single organization formed for a specific project can be seen as highly differentiated, whilst simultaneously faced

with problems associated with the need for integration within that organization. Co-ordination and integration are therefore important for groups such as the building team, and therefore there is the task of setting up these important interorganizational relationships which are required in order to carry out the construction, or any other, project (Stocks, 1984). The Project Manager plays a central role in the co-ordination of team members with the aim of effective and efficient finalization of the project. It is therefore clear that a number of skills and attributes are prerequisite for the position of Project Manager.

Meeting the clients' needs

The variations in terms used within various industries and between different professional bodies, leads to the search for clarification of the Project Managers role in order that accurate analysis and evaluation can be developed.

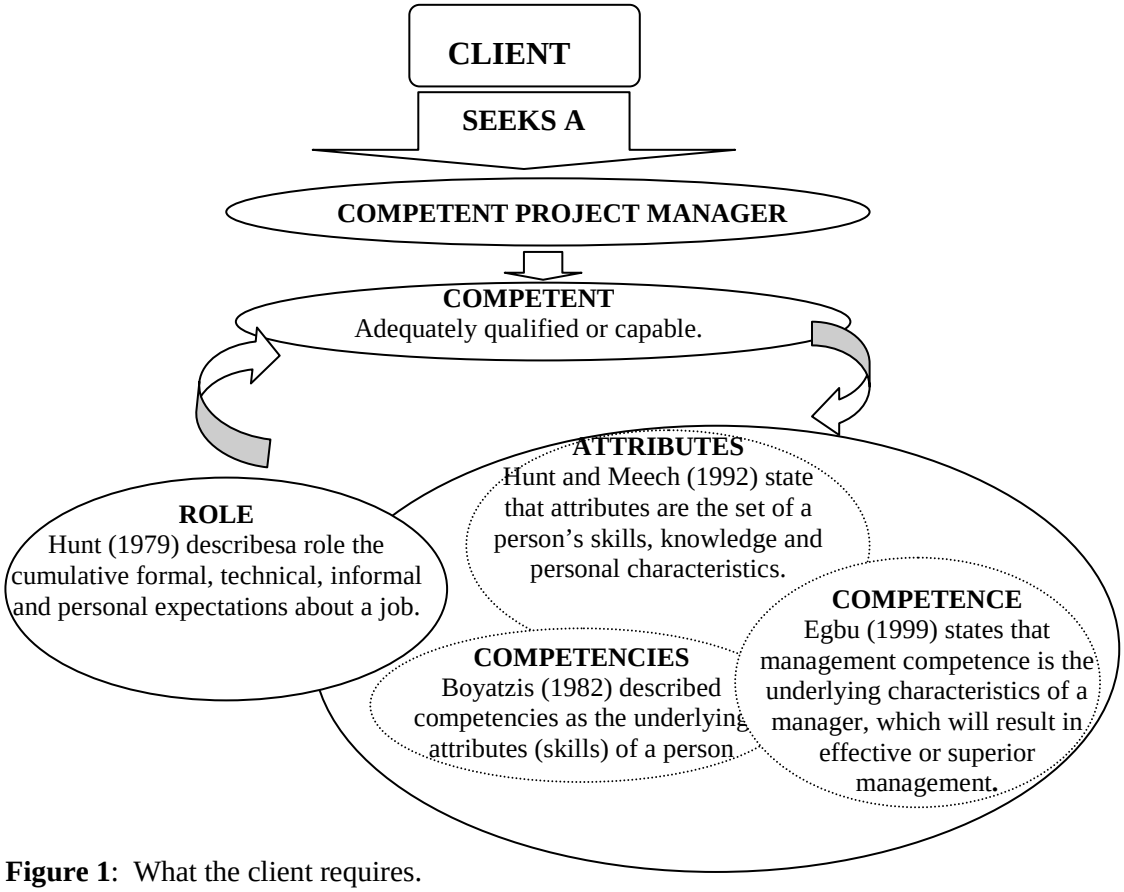

Figure 1: What the client requires.

Figure 1 identifies the various terms used and definitions from recognized sources. Many organizations claim that a competent project manager is expected to deliver against what the client is anticipating.

The view of the professional bodies

The construction clients who are involved with project management services are numerous and it is therefore crucial that the providers and users perceptions match that of the project managers' attributes. Great differences between authors and professional bodies are found on what the actual roles of the project manager are. The Chartered Institute of Building (CIOB, 2000) states the role of the project manager is to motivate, manage, coordinate and maintain moral of the project team. The

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Association for Project Management takes a more detailed view of the roles and competencies in which project management professionals should be competent. The Body of Knowledge (BoK, 2000) Report defines project management as the planning, monitoring and control of all aspects of a project and the motivation of all involved to achieve the project objectives safely and within the agreed time, cost and performance criteria. Whereas the Royal Institution of Chartered Surveyors state that the project managers role includes the ability to manage, plan, control, monitor, coordinate and deal within financial matters diligently (RICS, 1992). Within these definitions from the professional bodies, attention must be paid to the different terminology used such as duties, responsibilities, roles and skills and how they affect the actual roles that the project manager is expected to deliver against what the client is anticipating.

Project management roles

The roles that practicing project managers actually undertake are wide and varied. Many differing suggestions have been made about what project management actually is. The general consensus among authors is that project management contains activities such as organizing, planning, controlling, communicating, staffing, monitoring, budgeting, leading, motivating and coordinating (Weinrich and Koontz, 1993; BS 6079, 1996; Field and Keller, 1998; Maylor, 1999).

Now more than ever, the acquisition of relevant skills, knowledge and competencies for day-to-day management of construction activities in an increasing competitive environment is of overriding concern (Egbu, 1997). Ceran and Dorman (1995) argue that project managers must supplement their traditional functions with other non-construction skills to meet today's professional demands for which they have become responsible i.e. adopt a range of non-traditional roles. Modern project management therefore demands a project manager who displays general and managerial knowledge coupled with skills, which enable them to deliver the project successfully.

Pilcher (1997) argues that there are three major skill areas that a manager needs. These skills can be categorized under three headings – Technical Skill, Human Skill and Conceptual Skill. Wenrich and Koontz (1993) have added a forth to this list: Design Skill. Modern research on the skills of the project manager's and general managerial skills has been carried out by Field and Keller (1998); Maylor (1999); Fraser (2000); and Edum-Fotwe and McCaffer (2000). Edum-Fotwe and McCaffer (2000) listed the five main general skills that are the foundations for developing project management skills. These skills include leadership, communication, problem solving, negotiation and marketing, and are often the essential skills that the project manager needs if he/she is to function effectively. The same authors also agree that the skills mentioned should be combined with the knowledge of the project manager to provide what they describe as a 'new perspective to project management'.

If project management is to be seen as the prime option for construction clients, then it is imperative that project managers are highly skilled and knowledgeable and articulate their role while working in collaboration with the team and organization's. Therefore an agreement must be reached between all parties, including professional bodies, on what the roles of the project managers are, and what the actual attribute definitions are within these roles.

FIELDWORK AND DATA COLLECTION

This paper has been developed as part of ongoing research into the expected attributes and roles of Project Managers for both users and providers. This research set out to

answer basic questions on the expected attributes of Project Managers. There has been a great debate between practitioners, professional bodies, providers and users of Project Management over the defined roles and functions of a Project Manager and furthermore there appears to be the need for agreement over the actual attributes within those roles.

Previous Research on the roles and functions of a project manager has already been gathered from individuals practicing project management. The results from the sample identified the main roles and functions that they believed practicing project managers require to perform on a day to day basis throughout the project lifecycle. Subsequently they gave their opinion as to the relevance of each attribute and the data generated by the responses from this pilot questionnaire supported the identified roles and functions and lead onto the development of the fuller, more detailed study. A Time Role Analysis Model was developed and structured so as to allow the ten identified practicing project managers to indicate at 15-minute intervals the role previously undertaken (Sommerville and Campbell, 2000). This allowed an accurate picture to be developed based upon the composite roles and functions undertaken on both a daily and weekly basis.

7250 individuals were targeted through a postal questionnaire that sought their responses to a range of questions relating to expected attributes of project managers and those actually performed. The responses were derived from a range of service providers and also a range of end-users. The survey sample was randomly selected from users and providers of Project Management services.

Table 1: Response Rate to Questionnaire

	Issued Questionnaires	Number of Response	% Response Rate
Providers	3780	115	3%
Users	3425	276	8%
Total	7205	391	5.4%

After the data had been collected, coding categories were assigned to the answers to facilitate the analysis of the responses. The post coding of responses reduces the large number of individual responses down to a few general categories of answers that can be assigned a numerical code. The frequency of each code is then used to identify the most common constructs in relation to Project Management issues.

RESULTS

The focus for analysis was the ranking and rating of attributes for both Users and Providers. Ranking the attributes restricts the choice available to the respondents and allows the attributes to be placed in ascending order, whereas rating the attributes permits each to be rated separately according to its importance as perceived by the respondents. These two measurement areas allowed the best insight into the desired attributes of the project manager as perceived by the Users and Providers that participated in the sample. The providers were requested to rank the 15 attributes, seen in table 2 below, which they perceived to be the most important in the successful project manager. The scale on which the attributes were ranked was where 1 is the most important and 15 is the least important.

On initial inspection of the responses it can be seen that the most important attribute as perceived by the providers is Communication (40.2%) then Effective Leadership

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(31.7%) and Ability to Co-ordinate (12.0%). Whilst the least important attribute was Mentoring Skills (32.3%). Factor analysis and ANOVA testing are ongoing.

Table 2: Providers ranking in percentages

Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Communication	40.2	17.6	17.6	7.8	3.9	22.0	2.0	2.0	4.9	1.0	1.0	0	0	0	0
Leadership	31.7	25.7	8.9	5.9	5.9	5.0	4.0	4.0	2.0	1.0	1.0	3.0	1.0	1.0	0
Co-ordinating	12.0	12.0	19.0	12.0	11.0	3.0	6.0	6.0	3.0	5.0	3.0	1.0	2.0	2.0	3.0
Responsibility	11.3	5.2	10.3	7.2	7.2	6.2	12.4	10.3	10.3	5.2	3.1	3.1	5.2	1.0	2.1
Co-operation	5.0	11.9	15.9	15.8	16.8	6.9	5.0	8.9	2.0	5.9	0	2.0	3.0	1.0	0
Interpersonal	4.0	7.0	8.0	12.0	8.0	19.0	8.0	4.0	9.0	5.0	4.0	2.0	3.0	4.0	3.0
Technical Skills	3.1	7.1	3.1	4.1	9.2	7.1	4.1	10.2	5.1	10.2	7.1	6.1	8.2	5.1	10.2
Financial	3.0	7.9	5.9	10.9	9.9	8.9	12.9	11.9	5.0	6.9	5.9	2.0	3.0	3.0	3.0
Diplomacy	1.0	5.2	2.1	1.0	2.1	8.3	3.1	5.2	8.3	14.6	15.6	8.3	8.3	9.4	7.3
Discretion	1.0	2.1	0	4.2	4.2	4.2	4.2	1.0	4.2	5.2	12.5	17.7	16.7	13.5	9.4
Mentoring	1.0	2.1	2.1	1.0	2.1	1.0	2.1	4.2	3.1	4.2	2.1	16.7	12.5	16.7	32.3
Influencing	1.0	4.0	4.0	7.1	7.1	3.0	12.1	5.1	11.1	3.0	11.1	15.2	5.1	5.1	6.1
Negotiation	1.0	4.0	3.0	7.1	12.1	9.1	12.1	7.1	9.1	12.1	9.1	3.0	4.0	5.1	2.0
Presentation	1.1	3.2	2.1	0	3.2	4.2	6.3	8.4	8.4	9.5	5.3	9.5	11.6	17.9	9.5
Customer skills	1.0	4.2	2.1	7.3	3.1	11.5	6.3	11.5	8.3	12.5	9.4	4.2	4.2	6.3	8.3

The respondents were then asked to rate the 15 attributes on a scale of 1 to 5, where 1 is very important and 5 is not important at all. Table 3 below indicates their answers.

Table 3: Providers Rating

Attribute	**1**		**2**		**3**		**4**		**5**	
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Communication	75	73.5	14	13.7	4	3.9	3	2.9	6	5.9
Leadership	68	66.7	17	16.7	5	4.9	4	3.9	8	7.8
Co-ordinating	51	51.0	28	28.0	11	11.0	5	5.0	5	5.0
Financial awareness	48	47.1	32	31.4	10	9.8	3	2.9	9	8.8
Co-operation	47	46.5	31	30.7	13	12.9	7	6.9	3	3.0
Responsibility	45	45.5	28	28.3	16	16.2	4	4.0	6	6.1
Interpersonal Skills	31	31.0	38	38.0	18	18.0	7	7.0	6	6.0
Customer Relations	28	28.0	31	31.0	22	22.0	13	13.0	6	6.0
Negotiation Skills	23	23.0	39	39.0	21	21.0	13	13.0	4	4.0
Influencing	20	20.2	30	30.3	24	24.2	14	14.1	11	11.1
Technical Skills	19	18.8	34	33.7	22	21.8	8	7.9	18	17.8
Discretion	9	9.0	24	24.0	36	36.0	20	20.0	11	11.0
Presentation Skills	9	9.0	36	36.0	33	33.0	14	14.0	8	8.0
Diplomacy	9	8.9	38	37.6	26	25.7	16	15.8	12	11.9
Mentoring Skills	6	6.1	15	15.2	27	27.3	31	31.3	20	20.2

From analysis it is clear that the top 3 rated attributes correspond with the top three ranked attributes, being communication (73.5%), effective leadership skills (66.7%) and the ability to co-ordinate (51%). It appears that other attributes such as financial awareness, achieving co-operation and responsibility that were ranked further down the scale were identified as being very important within the rating scale but still carried less weight when confined to the ranking scale. An interesting fact within the data is the fact that mentoring was ranked 15th but within the rating the providers clearly perceived it as 4 on the rating scale instead of not important at all.

Users

The user respondents were given 15 attributes perceived to be important in the successful Project Manager and asked to rank on a scale where 1 is the most important and 15 is the least important.

Table 4 above outlines the attributes and the responses. The most important attribute as identified by the users of Project Management services is Effective Leadership

(39.5%) then Communication Skills (24.9%) and Ability in Co-ordinating (17.6%). Whilst the least important attribute was considered to be Mentoring Skills (32.6%).

Table 4: Users Rank

Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Leadership	39.5	10.3	8.6	9.1	7.0	2.9	4.9	4.1	2.5	3.3	2.1	1.2	2.1	1.2	1.2
Communication	24.9	18.0	15.9	10.6	6.1	7.8	5.3	4.5	2.9	2.4	0.4	0	0.8	0.4	0
Co-ordinating	17.6	17.1	13.5	10.6	9.8	3.3	9.4	6.5	4.1	2.9	2.0	0.8	1.6	0.4	0.4
Co-operation	8.6	12.7	14.7	13.1	9.8	10.2	6.1	6.9	6.5	3.3	3.3	2.0	1.6	1.2	0
Interpersonal	6.4	7.2	6.8	8.5	11.5	11.9	8.5	7.2	7.2	6.4	6.8	5.1	3.8	1.7	0.9
Responsibility	6.3	9.7	7.1	5.0	6.3	8.0	7.6	8.4	10.1	14.3	4.6	4.6	4.6	1.3	2.1
Financial	6.2	8.7	9.9	10.3	8.7	5.4	7.9	11.2	7.9	5.8	5.4	4.1	2.1	3.3	3.3
Technical	5.8	7.5	6.3	8.3	9.2	10.4	7.1	7.9	7.9	5.4	6.3	6.3	3.3	2.1	6.3
Negotiation	2.9	5.0	6.3	9.6	11.7	11.7	10.5	7.1	9.2	9.6	5.9	2.5	4.6	1.3	2.1
Influencing	2.6	1.7	4.3	6.0	7.3	7.3	9.4	10.3	6.8	8.5	10.7	5.6	5.6	7.7	6.4
Customer	2.6	2.1	2.1	4.3	1.3	5.1	5.5	6.8	4.7	8.1	9.4	14.9	12.8	12.3	8.1
Diplomacy	1.7	2.6	2.6	5.2	4.3	5.6	4.7	8.2	9.9	9.4	11.2	12.4	9.4	7.3	5.6
Discretion	1.7	0.9	0.9	1.7	2.2	3.0	3.0	3.9	7.4	7.0	12.6	13.5	16.1	16.1	10.0
Mentoring	1.7	0.	0.9	.7	1.	13	3.5	2.2	30	3.5	7.0	7.4	10.4	22.2	32.6
Presentation	1.3	0	1.7	4.3	3.0	3.5	4.3	4.3	4.3	5.2	7.4	14.3	16.1	17.4	12.6

The respondents were then asked to rate the strength of the 15 attributes. Table 5 outlines the respondent's answers.

Table 5: User Rating of attributes

Attribute	**1**		**2**		**3**		**4**		**5**	
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Leadership	148	63	40	17	13	5.5	8	3.4	25	10.6
Communication	138	58.5	52	22.0	16	6.8	4	1.7	25	11.0
Co-ordinating	124	52.8	61	26	20	8.5	6	2.6	23	9.8
Co-operation	104	44.8	77	33.2	20	8.6	14	6.0	17	7.3
Interpersonal	75	32.2	93	39.9	34	14.6	19	8.2	11	4.7
Responsibility	91	39.2	84	36.2	30	12.9	12	5.2	15	6.5
Financial	105	44.1	75	31.5	24	10.1	22	9.2	12	5.0
Technical	57	24.3	73	31.1	59	25.1	34	14.5	11	4.7
Negotiation	67	28.6	96	41.0	41	17.5	18	7.7	11	4.7
Influencing	48	20.6	82	35.2	62	26.6	29	12.4	11	4.7
Customer	35	15.0	70	30.0	70	30.0	40	17.2	18	7.7
Diplomacy	26	11.3	60	26.0	81	35.1	50	21.6	13	5.6
Discretion	23	9.9	59	25.4	90	38.8	36	15.5	23	9.9
Mentoring	19	8.4	32	14.1	60	26.4	65	28.6	50	22.0
Presentation	17	7.4	61	26.6	79	34.5	53	23.1	18	7.9

63% of respondents rated Effective Leadership as the most important attribute, followed by Communication Skills (58.5%) and Ability in Co-ordinating (52.8%). Whilst the least important attribute was Mentoring Skills (22.0%). Again there were similarities between the top three attributes identified by the users within the ranking and rating scales.

Both the User and Provider results have been plotted on Figure 2 below, indicating the Provider Attribute Profile and the User Attribute Profile.

On initial inspection it can be seen from the tables that there is a difference between the Users and Providers as to the most important attribute within the ranking scale. The providers believe that communication is the most important attribute followed by leadership whereas the Users perceive leadership as the most important attribute. This situation has arisen due to the restrictions of ranking the attributes. The results show that there is agreement between the response populations in some areas e.g. financial awareness, co-operation, interpersonal skills, negotiation, presentation and mentoring; but divergences appear in others areas. Diplomacy, presentation, discretion and

mentoring skills were all given a lower ranking than expected. Again this may be due to the ranking limitations.

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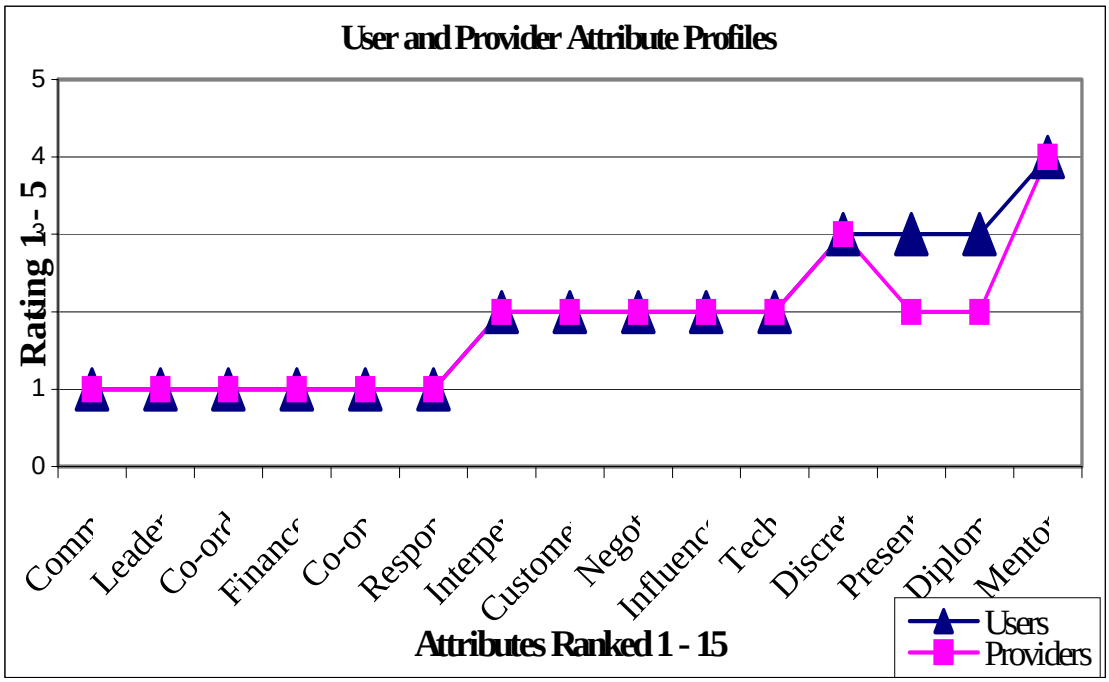

Figure 2: User Attribute Profile and Provider Attribute Profile

The results gained from the rating of the attributes were different from the ranking section and it was felt that they clearly identified both the User expectations and the Providers perception. With these results both a Provider Attribute Profile and User Attribute Profile have been developed and can be seen in Figure 2 above. There was not a vast amount of difference between the Providers and Users in this section. Both groups selected communication skills, effective leadership, the ability to co-ordinate, achieving co-operation and responsibility as very important attributes for the Project Manager to have and rated them as the most important attributes. Differences occurred in the lower ranking attributes including diplomacy and discretion and presentation skills. The users perceived these skills as slightly less important that other attributes but there was agreement between both the groups that mentoring although ranked least important when rated was not perceived as the least important at 5 but was placed into rating 4. This indicates that although some attributes are not as important as others they are still considered relevant skills for the Project Manager to posses.

CONCLUSIONS

Current views on the attributes of Project Managers were sought by means of a questionnaire survey issued to users and providers of such services. The data generated by the survey was both considerable and complex in nature.

The research highlights two important themes, firstly the identification of the User Attribute Profile and secondly the Provider Attribute Profile. Both of these indicate a difference in the level of desired attributes of the project Manager between the User and Provider perceptions.

The relevant personal skills and behavioral tendencies are expected from the project manager from the initial development of the project. Many project managers might already posses the skills expected to equip them for their crucial role, however many simply may need guidance on how to apply these skills to a particular project situations. The importance of project manager attributes should not be underestimated. The main principle of this being to develop an ability to create and sustain co-operation and long-term relationships between both parties involved in the service. During the project lifecycle the relationship between the Users and Providers is ongoing and it is essential that they are both working in partnership towards a common vision and goal regardless of organizational boundaries. A growing interdependence among the key strategic partners' is vital to ensure continued successful relationships.

Discrepancies can occur within this type of research due to the respondents perceiving the meaning of the individual attributes differently. For future opportunities all partied involved must develop linkages and share ways of operating so they can work together in parallel achieving the desired results. A lot of this depends upon their ability to interpret the roles and function that are required of the project manager over the project lifecycle. While the findings of this research to-date conclude that there are differences in perception, this gives rise to future research opportunities. Further analysis of the vast information gathered through the questionnaire is required with a necessity for structured interviews with some of the respondents in the near future to clarify particular confusion areas.

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