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TOWARDS MORE COMPLETE SATISFACTION OF CONSTRUCTION CLIENTS

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Abstract

In an environment where economic, political and technological change is the rule, a fundamental business strategy should be the defence of traditional markets and thoughtful entry into new markets, with an aim to increase market penetration and stimulate profit. The success of such a strategy will depend on the success of firms to do more and better for customers than their competitors. In other words, the firm's primary competitive advantage will come from changes they implement to please their customers.

In the construction industry, complexity of technical knowledge and construction processes have traditionally encouraged clients to play a largely passive role in the management of their project. However, today's clients not only want to know about internal efficiency of their projects but also need to know how they and their contractors compare and compete against their competitors. Given the vulnerability of construction activities in the face of regional financial crisis, constructors need to be proactive in the search to improve their internal firm and project processes to ensure profitability and market responsiveness. In this context, reengineering is a radical design that emphasises customer satisfaction rather than cost reduction

This paper discusses the crucial role of the client-project interface and how project networks could facilitate and improve information dissemination and sharing, collaborative efforts, decision-making and improved project climate. An intra-project network model is presented, and project managers' roles and competencies in forming and coordinating project workgroups is discussed.

Keywords: customer satisfaction; project manager; network; competency; integrator; collaboration; construction.

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INTRODUCTION

In an economic and business environment characterised by fierce competition and uncertainty, the customer is the prime mover of organisations' growth and prosperity (Davidson, 1994; Jones and Sasser, 1995). Schonberger (1994) in citing Smith's unpublished report on Motorola's attainment of 1988 Baldrige Award supports the view that if total customer satisfaction can be attained, the rest of the business takes care of itself. This is particularly true for a mature industry such as construction that its growth is primarily at the mercy of economic conditions, and client risk and profit assessment analyses. The only difference between these two sets of key factors is that while the former is entirely external and therefore completely out of contractors' control, the latter is both external and internal. It is external to the extent that a project should fit with client's organisation strategic objectives and internal to contractor's firm as it is determined, to some extent, by contractor's ability to make the project attractive and secure the commitment of the client to the project.

Faced with increasing competition and clients' knowledge about construction products and markets, some contractors have made a strategic decision to diversify and enter new construction markets but also acquire new capabilities which would allow them to influence client-related factors which were once considered out of their control. For example, there are some firms that offer 'package deals' which involves not only the design and construction of a project but also the management of completed projects such as apartment buildings. On the other hand, some firms offer financial services whereby the client can raise the necessary funds through the finance arm of the contracting firm rather than traditional financial institutions.

In this paper, we define client as an individual or organisation that initiates and pays for the project. In our research, we have recognised that building projects vary in type and complexity. Our discussion with project managers has revealed that there is a direct relationship between complexity and size of a project, ie the larger projects are generally more complex than smaller ones. A survey of building project managers in Brisbane showed that a construction project with some degree of complexity is one with a contract value of at least \$5 million. This is the figure we will use to select building projects for collecting data. It must also be noted here that since the focus of our research is to identify project managers' competencies in the building industry, it is logical to limit our study to the implementation stage of projects in which project managers' participation is the greatest and their effectiveness most evident.

It appears that the construction industry is becoming more sophisticated and is responding to the needs of its clients at firm-to-firm interface, but there needs to be a similar and complementary effort at project-client interface so that the client becomes a loyal client. Although, construction and loyalty seem to be oxymoron in that the construction industry does not normally lend itself to loyalty on part of its players, it can do what has been done in the manufacturing and service sectors. This, as CIB (1997) suggests, requires change in people's attitude which really means developing a new mindset whereby clients are seen as long term partners rather than temporary association marked by taking advantages of each other. Such a strategy never succeeds in the long run. Furthermore, since it is the client who initiates the project and decides on who wins the contract, the onus is on the contractor firm to manage its relationship with the client professionally and successfully so that the client would prefer to continue the relationship over other firms in its future projects.

Considering client-project interface from contractor's perspective, it is evident that project manager plays a central role in planning and managing this crucial

relationship. This paper intends to identify the project manager's skills and actions in dealing with the project client or client's representatives.

PROJECT INTEGRATION

It is argued by most writers on project management that if project managers are to be given only one role, it has to be the role of an integrator (Kerzner, 1998; Morris, 1983; Baker and Wilemon, 1977). The reason for such an assertion stems from the working environment and relationships in the construction industry and their subsequent impacts on project organisation and operation.

The construction industry is characterised by project-orientation, fragmentation and uncertainty. As a mature industry, it is extremely price sensitive and hence very competitive. The industry is heavily dependent on subcontractors and consultants whose loyalty lies with their own bosses not that of project manager who is perceived to be a temporary overseer. Given the reality of construction project work whereby many independent specialist groups come together to complete a project, it becomes apparent that traditional functional organisation is ill-fitted to manage these projects effectively. The functional managers in hierarchical structure are characterised by functional and specialist parochialism which prevent them to be sensitive and objective about the needs and objectives of other project team members and firms. This tendency, geographical distance of projects from contractors' main office and subsequent inability to effective coordination of project teams led to the birth of a different organisation structure which is now known as matrix. What matrix structure does is to move the responsibility of managing the project from the home office functional managers to the construction site and vest it in a central project figure called project manager who has the ultimate responsibility to complete the project as described in the contract.

However, it is easier to assign responsibilities to a project manager than to see them fulfilled if the project manager lacks the authority to either secure the cooperation of functional managers or delegate responsibilities and authority to other team members. Given that project managers in organisational hierarchy is normally ranked as the middle managers with significantly less power base and influence than functional managers, we think it is up to the senior managers to address this damaging imbalance. Furthermore, we suggest that the extent of project managers' authority should be specified prior to assigning their responsibilities. There are a number of benefits that flow from this matching of authority and responsibility:

- 1) the perception of vested authority in the project manager to get the project completed is a powerful message to functional managers, subcontractors and suppliers to cooperate with the project manager and to work as a team,
- 2) the perception of top management support for the project manager places him or her in a better position to deal with disputes and conflicts,
- 3) frees the project manager to behave and act as a leader not a fire-fighter,
- 4) helps the project manager to delegate responsibilities, empower project participants, and improves project working climate, and
- 5) frees the project manager to move away from a supervisory/tactical role to a more integrator/strategic role. In this role, he or she gives equal attention to internal activities and people working on the project site and to external individuals and organisations who must be completely satisfied with the project outcomes if the project manager wants to be perceived as effective and professional by the client and the market as a whole.

CLIENTS' SATISFACTION

We define the client as the individual or organisation who initiates and pays for the project. There is little doubt that today's construction project clients are more sophisticated and knowledgeable about project processes and markets compared to 1970s or 1980s. So it is a mistake to treat them as once were treated! It is also a mistake to think that all clients want is to see the end result i.e. a building, a recreational complex or a power station. With increasing competition and uncertainty, the clients want to know just about everything of significant importance on the projects they are paying for including their operational progress and problems. The studies have shown that many projects that were completed on time, within budget were not perceived by clients as successful (Wit, 1986). This implies that there are other success criteria that clients feel as important, if not more important, as traditional triangle of cost, time and quality. In fact, the market condition and primacy of customers in a demand-side industry and economy have forced the contractors to add a fourth criteria for project success: the client satisfaction (Kerzner and Thamhain, 1984, Pinto and Mantel, 1990).

We think, however, that competition is so fierce in the construction that mere attempt to satisfy the clients is not a differentiator and a competitive advantage factor because every firm wants to see its customers satisfied. Like many firms in manufacturing and service industries such as British Airway (Prokesch, 1995), IBM and 3M (Peters and Waterman, 1982) that go out of their normal duties to please their customers and ensures their unwavering loyalty, construction firms should adopt similar strategies to delight their clients beyond their expectations. The too-often excuse of the uniqueness of construction projects and products is not heeded by clients who deal on a daily basis with many firms in manufacturing and service industries providing quality products and impeccable services during and after purchasing the products. In many instances, these efforts require no additional expenses but a new mindset and approach in treating, informing and dealing with clients.

Client-project interface

Cleland and Kerzner (1985) and Testi et al., (1996) suggest that project managers' effectiveness may be enhanced if they are involved from the early stage of construction process such as precontract and design stages. It is argued that where this occurs, project managers' experience could be valuable inputs in decisions related to planning, constructability and selection of team members and subcontractors. However, it is in the construction phase in which the time and budget requirements are the greatest and the integration of tasks and people are the most intense and crucial (PMI, 1987). This is the phase where effective project managers demonstrate their leadership quality and managerial skills to create an efficient and responsive project team.

Over the last 30 years, many academics and practitioners have written about project management techniques such as PERT, CPM and WBS and other operational processes and procedures to enhance the internal efficiency of projects. But in a dynamic and competitive market of today, preoccupation with efficiency may prove to be devastating for any firms in the long-run. Instead, what is required is the development of capabilities that balance out internal efficiency and external responsiveness. It is in this context that client-project interface through a proactive role of project manager is crucial in ensuring that project team' needs and priorities are communicated, understood and acted upon. It is also through the establishment of

open communication channel, trust and cooperative efforts that the trade-offs can be embraced as an acceptable and legitimate concept without its negative connotations such as power tactics, us-them mentality and exploitation.

Intra-project networks

Given the key integrating role of project manager during construction phase of a project, it incumbent upon the project manager to get every member of project team involved particularly those who have key permanent positions and roles in the project. We suggest that the best way to create a team of committed and dedicated individuals is to put in place a forum that facilitates the exchange of relevant information, the debate on key decisions, the prevention of problems and the resolution of conflicts.

To achieve a total integration of project teams, we propose an intra-project network of key project stakeholders. In most projects particularly during construction or execution phase, the key stakeholders include those who are attached to client's firm, those who work for contractor's firm and those who work on site. This led us to the classification of consultative, supportive and operational groups respectively. The term assigned to each group was deliberately chosen to describe the key function of each in the construction phase of a project. Each group has its own priorities, needs and responsibilities. However, the interdependency rule in project management dictates that none of these groups can function effectively without the active support of the other two groups. A network is as strong as its weakest link.

To ensure that the number of participants in the forums or workgroups is kept relatively small (4-6 members) while at the same time ensuring the objectives of the networks as a whole are achieved, it is proposed that the project manager plays a central integrating role in the network whose basic function in each forum is to facilitate information dissemination, team-building, consensus-building and cooperative efforts.

The workgroup members may or may not change over the life of construction phase of the project. For example, members of a support workgroup normally belong to the contractor's firm and therefore stay together unless a member leaves the firm or shifted to another position. Members of the operational group, on the other hand, change throughout the construction phase as subcontractors and suppliers commence and finish their job on the project. There may be times when other individuals attend one or more group meetings. In figure 1, others may refer to specialists, lawyers or other senior managers representing either the contractor or the client organisation as well as the external organisations such as government agencies or citizen groups. The frequency of workgroup meetings varies and changes according to the nature of workgroup responsibilities and roles and the urgency of meetings. Figure 1 is a simple representation of the proposed intra-project network (Shirazi and Hampson, 1998).

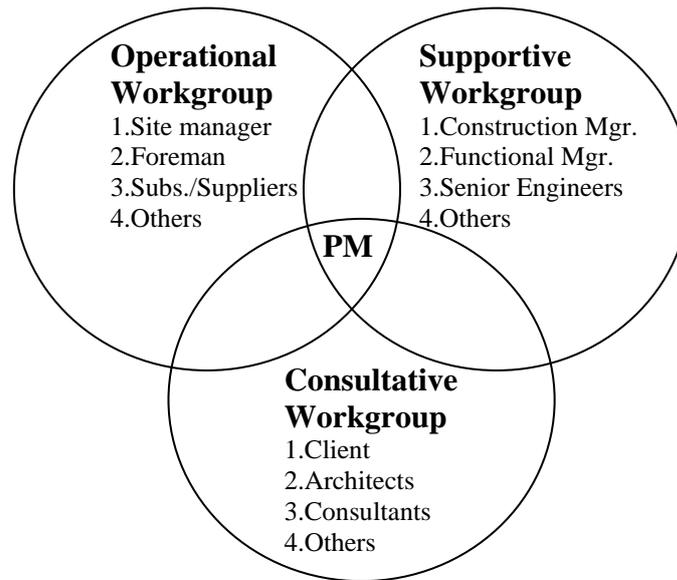


Figure 1. Intra-Project Network Model

NETWORKING

Many academic and practitioners argue that organisations of the future will have to be more flexible, responsive and innovative in order to compete successfully. The network organisation seems to meet these characteristics and it is the most likely to replace functional and divisional organisational forms (Toffler & Toffler 1997, Drucker 1991, Gibson 1997, Porter 1997, Kelly 1997, Limerick and Cunnington 1993). In Kanter's words: 'Companies around the world are becoming PALs: they are pooling, allying and linking' (Bennis, 1997).

Network, as a general concept, means people from different units or organisations come together in the pursuit of a common purpose. Stock et al., (1998) identify three dimensions that differentiate networks from other types of organisations: 1) vertical integration (hierarchy), flexibility (market) and Cooperation (network). Wills (1994) suggests that networking is a term used to describe the contemporary organisational empowerment phenomena. It is a deliberate extension of matrix management in large organisations and voluntary collaboration of a group of individual who are prepared to empower some among themselves to act as a leaders to achieve their common objectives. Limerick and Cunnington (1993), too, argue that network management is, in the end, management by empowerment. However, Wills (1993), Ghoshal and Bartlett (1990), Theuerkauf (1991) and Jarillo (1993) emphasise that networking is always driven by its marketplace and customers. They decide who shall be involved and how the relationship should be focused.

There are two types of network. The internal network where various parts of organisation work as separate units and also network and collaborate with other resources within the organisation. In this type, as Limerick and Cunnington (1993) point out, the synergies are sought and achieved by the parts themselves. The other type is external network that is commonly known as strategic alliance or strategic network. It is based on the premise that as the environment becomes more complex, competitive and discontinuous, the more difficult it becomes for an organisation to have all the knowledge and competencies in-house. Teece and Pisano (1987) argue

that if the best centres of excellence in know-how lie outside the firm, forming alliances is the only viable alternative to remain efficient and responsive. The benefits of external networks include lower cost, better quality, access to technology and a wider referral base.

Networking in construction

It may be argued that the concept of networking is not new in project-oriented industries such as construction whereby its projects require the products and services of hundreds or even thousands of suppliers and subcontractors. No construction firm, anywhere, has the capabilities or the desire to produce everything it uses on its projects. The construction industry is perhaps the only industry that uses the products and services of most industrial and service sectors in the economy. The construction industry is a good example of an industry that, according to Prahalad and Hamel (1990), firms can not possibly master all the key competencies they need for an integrated solution.

On the other hand, projects are teamwork activities. Teare et al. (1997) emphasise that teamwork is at the centre of business reengineering process as it has a universal potential in unlocking organisational capability. To realise this potential, it has been recognised that all project team participants including client, contractor, consultants, subcontractors, suppliers and government agencies should work together for good of all. Therefore, at least in theory, both internal and external networking have had a long tradition in the construction industry. In practice, however, people, depending on their personal characteristics and preferences and skills react differently in a given situation. In fact, the combinations and permutations of people, structure, culture and situations are so enormous in numbers that even the best theories can only partially predict the outcomes of interactions among personal and situational factors.

In this context, the benefit of identifying and utilising competencies is based on the premise that people are the key determinant of organisational effectiveness. They can perform well in the face of adversity, poorly structured organisation and in difficult situations. However, people in the normal circumstances perform better and are more satisfied if the structure and culture of their organisation match their personality and competencies. Therefore, it seems logical for organisations to develop capabilities that match people's competencies, task requirements and environmental factors (Boyatzis, 1982).

Networking competencies

Networking is basically coordination of groups and their activities through adaptation between interdependent and self-regulating units (Nassimbeni, 1998). Furthermore, as mentioned earlier, networking is an organisational structure that focuses on customer satisfaction. Therefore, an effective project manager must have the personal characteristics, skills and attitudes that enhance effective networking. In a wide ranging review of network literature, we found a number of competencies that were mentioned more frequently than others. What follows is a brief description of each networking competency in order of frequency which were found in these literature:

Trust-building: There is an overwhelming agreement on the centrality of trust in networking activities in the literature (Palmer, 1996; Zeffane, 1995; Coulson-Thomas, 1998; Buono, 1997; Wills, 1994; Schaafsma, 1997; Cravens and Piercy, 1994). No collaborative work can last a very long time if people are suspicious of each other's motives and promises. The network organisation is based on relationships not power

play and hierarchy. Participants are expected to negotiate for trade-offs and get what they are promised in writing or verbally.

Given the adversarial climate that has traditionally prevailed in the construction industry, building trust is perhaps the most important competency of project manager for establishing effective network relationships. Coulson-Thomas (1998) argues that social creatures thrive on trust and the interaction and interdependence that allow individuals to create and negotiate roles enable them to contribute while being true to themselves. An effective project manager is one who says and acts as a role model and sees people in positive light as described by the McGregor Theory Y (McGregor, 1960). Furthermore, he or she must be realistic in accepting that humans do make mistakes, may intentionally or unintentionally misrepresent statements and events and may even refuse to accept convincing arguments knowing deep down that their position is untenable. This means that the project manager should be flexible, forgiving and empathetic in order to create a collaborative climate whereby trust and honesty can flourish.

Communication: The fact that a key objective of networking is the speedy and timely dissemination and sharing of information among network members makes effective communication a key network competency (Burke, et al., 1995; Drew and Coulson-Thomas, 1997; Nassimbeni, 1998; Kase and Liu, 1996; Schaafsma, 1997). This competency includes the ability to speak and write clearly and succinctly as well as being a good listener. Effective communication skill is essential for successful discharge of leadership and managerial functions. This skill is particularly important for the project manager who has no authority over network members and essentially has to talk his or her way through their conflicting goals and objectives.

Project manager is an information disseminator in the network and therefore should be able to sieve through much information and prioritise it so that important issues are dealt with quickly and decisively. The information technology has certainly helped the speed and sophistication of information delivery but it has also created the information overload. Michael Hammer, the originator of term re-engineering, argues that automation of information flows often does not result in effective information system (Hammer, 1990). To be effective, information must be of high quality and quickly reaches the users.

Commitment: The survival of any purposeful task is largely dependent on the participants' commitment and motivation in carrying out that task to its completion (Turnbull et al., 1996; Nassimbeni, 1998; Zeffane, 1994; Buono, 1997; Zeffane, 1995; Richardson, 1995). In networking, this is a key leadership characteristic of the network coordinator. Securing commitment to individual and project goals requires the ability 1) to penetrate in people's mind in search of needs and interests, 2) to provide opportunities which satisfy individual's inner motivation, and 3) to reinforce the commitment through periodic intrinsic and extrinsic rewards. In doing this, the network coordinator needs to be perceptive, patient and persuasive. The research has repeatedly shown that the most effective power base to influence project members is the use of authority, work challenge and expertise. In networking, however, external clients are likely to respond to expert and referent power.

Empowerment: As we mentioned earlier, empowerment is a central feature of the new management paradigm i.e. networking (Coulson-Thomas, 1998; Wills, 1994; Drew and Coulson-Thomas, 1997; 27). Its tenet is based on the belief that as organisations grow in size and complexity, the quality of decision making deteriorates and employees' morale declines. Since the network organisation is born out of market demand for responsiveness and flexibility, it is natural for it to argue for a radical

structural changes which devolve responsibility and decision-making power to the shop-floor employees or those closest to the customers. In the context of construction projects, empowerment frees the project manager from the time-consuming details of daily project work and gives him or her time to plan, contact and inform the client, and negotiate and influence functional managers for needed resources. However, empowerment can not be achieved in a vacuum. It should precede by a period of coaching and mentoring so that the key elements of what is being delegated are appreciated and appropriate skills are learned. Furthermore, project managers should determine what is or isn't delegable.

Relationship-building: Holmlund (1997) defines relationship as an interdependent process of continuous interaction and exchange between at least two actors in a business network context. Hakanson and Snehota (1995) argue that network approach deals primarily with very complex and multifunctional relationships that furthermore are considered to be embedded in a web of interconnected relationships in a network. Relationships are typically characterised by maturity, long-term character, process nature and context dependence. Long-term relationships facilitate information sharing, learning and innovation (Arias, 1995). In the construction industry, partnering which has attracted a lot of attention in the 1990s is essentially a process that aims at developing long-term relationships between project participants particularly contractors-subcontractors/suppliers. Long-lasting relationships require significant efforts on the parts of all project participants. It therefore suggested that the project manager should operate more like a broker than a producer (Cravens and Piercy, 1994). In particular, he or she would have to be a good listener, caring, empathetic and flexible. Given that all relationships exhibit conflicts and cooperation, project managers should resolve conflicts with win-win results so that cooperative efforts are maintained and enhanced in the network.

CONCLUSIONS

Networking is a strategic response to discontinuity and changeability. It can help firms be internally-driven (efficiency) and externally-focused (responsiveness). On the construction project, networking goes beyond good working relationships between contractor and subcontractors, it seeks to integrate and inform all project participants. The project manager - as the central figure on the construction project - plays a key coordinating role in client-project networks. The effectiveness of project managers in this role depends on possessing specific competencies which includes personal traits, interpersonal skills and abilities in building trust, effective communication, securing commitment, empowering others and sharing vision. Not all project managers, however, are gifted with these personal, managerial and leadership qualities. It is, therefore, incumbent on education and training institutions such as universities to provide theoretical and practical opportunities for students to learn and experience these competencies.

Management in general, and project management in particular, are largely about dealing with people and as such require relevant competencies in effective communication, influencing, problem-solving, motivating and learning. Each of these competencies, are needed to achieve the objectives of project networking through better coordination of tasks and people, improved working relationships and environment and more importantly the complete satisfaction of both internal and external customers.

REFERENCES

- Arias J.T.G. (1995) Do networks really foster innovation? *Management Decision*, 33(9).
- Baker, B.N. and D.L. Wilemon (1977) A summary of major research findings regarding the human element in project management. *Project Management Quarterly*, 8(1).
- Bennis, W. (1997) in *Rethinking the future*. Rowan Gibson (ed.), Nicholas Brealey Publishing, London.
- Boyatzis, R.E. (1982) *A model for effective performance*. John Wiley & Sons.
- Buono, A. (1997) Enhancing strategic partnerships intervening in network organisations. *Journal of Organisational Change Management*, 10(3).
- Burke, R.J., Rothstein M.G. and Bristor, J.M. (1995) Interpersonal networks of managerial and professional women and men: descriptive characteristics. *Women in Management Review*, 10(1).
- CIB (1997) *Future organisation of the building process*. CIB Working Commission W82, Publication 172.
- Coulson-Thomas, C.J. (1998) Careers, development and the future of the organisation. *Career Development International*, 3(1).
- Cravens, D.W. and Piercy, N.F. (1994) *International Journal of Service Industry Management*, 5(5).
- Davidson, F.J. (1994) *The new Project management*, Jossey Bass Inc.
- Drew, S. and Coulson-Thomas, C. (1997) Transformation through teamwork: the path to the new organisation? *Team Performance Management*, 3(3).
- Drucker, P. (1991) Drucker in Harvard Business Review. *Harvard Business Review*.
- Ghoshal, S. and C.A. Bartlett (1990) The multinational corporation as an interorganisational Network.. *Academy of Management Review*, 15(4),603-625
- Gibson, R. (1997) *Rethinking the future*. Nicholas Brealey Publishing, London.
- Homlund, M. (1997) What are relationships in business networks? *Management Decision*, 35(4).
- Jarillo, C.J. (1993) *Strategic networks: creating the borderless organisation*. Butterworth, Heinemann.
- Jones, T.O. and E.W. Sasser Jr. (1995) Why satisfied customers defect? *Harvard Business Review*, Nov-Dec.
- Kelly, K. (1997) in *Rethinking the future*. Rowan Gibson (ed.), Nicholas Brealey Publishing, London.
- Kase, K. and Liu, J.Y.S. (1996) Entrepreneurial networking in Japanese management. *International Marketing Review*, 13(3).
- Kerzner, H. (1998) *Project Management: A system approach to planning, scheduling and controlling* (6th ed.). Van Nostrand Reinhold.
- Kerzner, H and H.J. Thamhain (1984) *Project management for small and medium size businesses*. Van Nostrand Reinhold.
- Limerick, D. and Cunnington, B. (1993) *Managing the new organisation: A blueprint for networks and strategic alliances*. Business & Professional Publishing, Sydney.
- Nassimbeni, G. (1998) Network structures and co-ordination mechanisms: a taxonomy. *International Journal of Operations & Production Management*, 18(6).
- McGregor, D.M. (1960) *The Human Side of Enterprise*. McGraw-Hill.
- Morris, P.W.G. (1983) Project management organisation. *Construction Papers*, 2.

- Palmer, A. (1996) Linking external and internal relationship building in networks of public and private sector organisations: a case study. *International Journal of Public Sector Management*, 9(3).
- Peters, T.J. and Waterman Jr., R.H. (1982) *In Search of excellence: Lessons from America's best-run companies*. Harper & Row.
- Pinto, J.K. and S.J. Mantel Jr. (1990) The causes of project failure. *IEEE Transactions on Engineering Management*, 37(4).
- Prahalad, C.L. and G. Hamel (1990) The core competence of the corporation. *Harvard Business Review*, 90(3),79-91.
- Prokesch, S.E. (1995) Competing on Customer Service: An Interview with British Airway's Sir Colin Marshall. *Harvard Business Review*, Nov-Dec.
- PMI (1987) Project Management Book of Knowledge.
- Porter, M. (1997) in *Rethinking the future*. Rowan Gibson (ed.), Nicholas Brealey Publishing, London.
- Richardson, B. (1995) How to Administrate the networked organisation: tips from the theory and practice of management. *The Learning Organisation*, 2(4).
- Schaafsma, H. (1997) A networking model of change for middle managers. *Leadership & Organisation Development Journal*, 18(13).
- Schonberger, R.J. (1994) Total quality: teammanship over leadership. *Benchmarking for Quality Management & Technology*, 1(1).
- Shirazi, A. and Hampson (1998) An evolution of project managers' competencies in Queensland building industry. *Proceedings of the 14th ARCOM conference*, Reading, UK.
- Stock, G.N.; N.P. Greis and J.D. Kasarda (1998) Logistics, strategy and structure: a conceptual framework.. *International Journal of Operations & Production Management*, 18(1).
- Teece, D. and G. Pisano (1987) Collaborative arrangements and technology strategy. *Proceedings of the Conference on New Technology and New Intermediaries*, Centre for European Studies, Stanford University.
- Tersine, R.; M. Harvey and M. Buckley (1997) Shifting organisational paradigms: transitional management. *European Management Journal*, 15(1).
- Theuerkauf, T. (1991) Reshaping the global organisation, *McKinsey Quarterly*, 3,102-119.
- Toffler, A. & Toffler H. (1997) in *Rethinking the future*. Rowan Gibson (ed.), Nicholas Brealey Publishing, London.
- Turnbull, P, D. Ford and M. Cunningham (1996) Interaction, relationships and networks in business markets: an evolving perspective. *Journal of Business & Industrial Marketing*, 11(3).
- Wills, G. (1994) Networking and its leadership processes. *Leadership & Organisational Development Journal*, 15(7).
- Wills, G. (1993) *The enterprise school of management*. MCB University Press, Bradford.
- Wit, A.D. (1990) Measuring project success: an illusion. *Proceedings of the 18th Annual Seminar/Symposium*, PMI, Montreal.
- Zeffane, R. (1995) the widening scope of inter-organisational networking: economic, sectoral and social dimensions. *Leadership & Organisational Development Journal*, 16(4).
- Zeffane, R. (1994) Inter-organisational alliance and networking dynamics, processes and technology. *Leadership & Organisation Development Journal*, 15(7).