

INFLUENCE OF WORK TEAM EFFECTIVENESS
ON PROJECT DELIVERY

DAYANG NUR FATTHANAH BINTI AMRAN

UNIVERSITI TEKNOLOGI MALAYSIA

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DAYANG NUR FATTHANAH BINTI AMRAN

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*To my beloved mother and father, my husband, my sisters and brothers
Thank you for all supports and never ending love.*

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ABSTRACT

A project is a temporary venture undertaken to create a unique product, service, or result. The temporary nature of projects specifies a definite beginning and end. The end is reached when the project's objectives have been achieved or when the project is terminated because its objectives will not or cannot be made, or when the need for the project no longer exists. Work teams occupy an important function in which has been deemed as a management transformation and reform of corporate. This study is to develop a better understanding and apply the statistical measurement of the work team effectiveness on project delivery. The basic study of this research on factors influencing project delivery was conducted through literature review. In this study, a quantitative method was used to conduct the relationship between work team effectiveness and project delivery and also the influence of work team effectiveness on project delivery. The results show that the analysed statistical result was processed and related to the four research objectives. Work team effectiveness is the important characteristics influencing on project delivery. Since there are needs and goals of any projects awarded different, work team effectiveness characteristics should also be fitted for each project.

ABSTRAK

Projek adalah usaha sementara yang diambil untuk menyediakan produk, perkhidmatan, atau keputusan yang unik. Sifat sementara projek adalah menentukan permulaan dan pengakhiran projek dengan jelas. Projek berakhir apabila objektif projek itu telah dicapai atau apabila projek itu ditamatkan kerana objektif projek tidak akan atau tidak boleh dibuat, atau apabila projek tidak diperlukan lagi. Pasukan kerja memainkan peranan penting dalam tranformasi pengurusan dan pembaharuan korporat. Kajian ini dibuat adalah untuk membina pemahaman yang lebih jelas dan mengaplikasikan penggunaan statistik terhadap keberkesanan pasukan kerja ke atas penyampaian projek. Kajian asas penyelidikan ini ke atas faktor-faktor yang mempengaruhi penyampaian projek telah dijalankan melalui kajian literatur. Dalam kajian ini, kaedah kuantitatif telah digunakan untuk mengendalikan hubungan antara keberkesanan pasukan kerja dan penyampaian projek dan juga pengaruh daripada keberkesanan pasukan kerja ke atas penyampaian projek. Hasil kajian menunjukkan bahawa keputusan statistik yang dianalisa telah diproses dan berhubungkait dengan empat objektif kajian. Keberkesanan pasukan kerja adalah salah satu ciri penting yang mempengaruhi penyampaian projek. Oleh kerana keperluan dan matlamat daripada mana-mana projek yang diberikan adalah berbeza, ciri keberkesanan pasukan kerja juga hendaklah dilengkapi untuk setiap projek.

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Operations are an organizational function performing the ongoing execution of activities that produce the same product or provide a repetitive service. Examples include: production operations, manufacturing operations, and accounting operations. Though temporary in nature, projects can help achieve the organizational goals when they are aligned with the organization's strategy. Organizations sometimes change their operations, products, or systems by creating strategic business initiatives. Projects require project management while operations require business process management or operations management.

Projects can intersect with operations at various points during the product life cycle, such as:

- At each closeout phase;
- When developing a new product, upgrading a product, or expanding outputs;
- Improvement of operations or the product development process; or
- Until the divestment of the operations at the end of the product life cycle.

At each point, deliverables and knowledge are transferred between the project and operations for implementation of the delivered work. This occurs through a transfer of project resources to operations toward the end of the project, or through a transfer of operational resources to the project at the start.

Operations are permanent endeavors that produce repetitive outputs, with resources assigned to do basically the same set of tasks according to the standards institutionalized in a product life cycle. Unlike the ongoing nature of operations, projects are temporary endeavors (PMI, 2008).

Work Team is a critical factor for project success especially to deliver project on time. This will be more effective if the organization have an effective project teams. High team performance can be achieved by using open and effective communication, developing trust among team members, managing conflicts in a constructive manner, and encouraging collaborative problem-solving and decision-making.

Some specialists state that to be effective modern organizations essential to use small teams for boosting variety of jobs. For example, in an article subtitled “The Team as Hero,” Reich (1987) wrote,

If we are to compete in today's world, we must begin to celebrate collective entrepreneurship, endeavors in which the whole of the effort is greater than the sum of individual contributions. We need to honor our teams more, our aggressive leaders and maverick geniuses less. (p. 78)

Work teams occupy an important function in which has been deemed as a management transformation (Walton, 1985), paradigm shift (Ketchum, 1984), and reform of corporate (Kanter, 1983). In this management rebellion, Peters (1988) advised that organizations use “multi-function teams for all development activities” (p. 210) and “organize *every function* into ten- to thirty-person, largely self-managing teams” (p.296). Tornatzky (1986) directed to new technologies that authorize small work groups to take responsibility for entire products. Hackman (1986) predicted that, “organizations in the future will rely heavily on member self-management” (p. 90). Building blocks of such organizations are self-regulating work teams. But far from being revolutionary, work groups are traditional; “the problem before us is not to invent more tools, but to use the ones we have” (Kanter, 1983, p. 64 and Sundstrom, de Meuse, & Futrell, 1990).

1.2 Statement of the Problem

Company S has identified that work team is significant factor for project delivery success. Before and during the project process, work team among the managers, staffs and workers is the major influence in managing the project in the company.

Failure of project delivery arise when the person in charge of the delivery of the product failure to accomplish the targeted time, budgeted cost, designer changes or errors, user changes, weather, late deliveries and specified quality result in various unexpected negative effects on the project processes. Generally, when the products are delivered to site behind the schedule of delivery, they are prolonged and therefore, additional cost will be sustained accordingly. This is affecting many parties at the construction site.

There are numerous factors affecting the failure of project delivery on time. Most common problem is lack of communication among the employees from the beginning of receiving the project till the final of product delivered to the customers. The effective application of teamwork helps to develop many aspect of a team such as co-ordination, innovation, horizontal communication and flexibility, however, it is not a panacea for explaining all coordinating problems and poor application can has many negative significances. It effectiveness lies in its proper application for a given context (Nurmi, 1996). Dickinson and McIntyre (1997) identified and defined seven important components of teamwork which are critical to any improvement exercise: communication; team orientation; team leadership; monitoring; feedback; backup behaviour; and co-ordination. These highlight some important challenges for the construction project team.

Communication is central to the efficient performance of any team especially on construction projects because of the different skill necessities. The challenge is to ensure that the right information gets to the appropriate person at the right time. Other challenges within the construction project team environment include alignment of attitudes which conflict with that of the project team and acceptance slightly than compliance from members to share a common vision with leadership, which is often imposed by the terms of the contract, especially at the early stages of the project (Alshawi and Faraj, 2002; Ankrah et al., 2009; Samuel, 1996) (see Baiden, Bernard K., 2011). Actually, work team is the other important factor to be considered in project delivery on time. If these factors are not in consideration and rehabilitation, it will lead to more serious problems in the future and upcoming construction project in Malaysia.

Hence, this study is important in order to increase the number of success on project delivery. Other than that, Company S can also maintain and improve their project delivery on a long-term basis. The master thesis is based on supplier and/or manufacturers' perspective. The aim is further divided into two research questions as below:

- a) What are the project team members' perceptions on project delivery from supplier and/or manufacturers' perspective?
- b) How to ensure the work team effectiveness on project delivery achieve customers' expectations?

1.3 Aim of the Study

The aim of this study is to develop a better understanding and apply the statistical measurement of the work team effectiveness on project delivery.

1.4 Objectives of the Study

Followings are the specific objectives for this study: -

- (1) To identify the work team effectiveness as perceive by the project team members.
- (2) To identify the project team members' perception on project delivery.
- (3) To examine the relationship between work team effectiveness and project delivery.
- (4) To examine the influence of work team effectiveness on project delivery.

1.5 Significance of the Study

The benefits of this study are to monitor the manufacture of the products in the factory and to ensure that the project delivery is within time frame given by the customers. These include as below:

- (1) Practice - Organization
- (2) Body of Knowledge - Project Management

1.6 Scope of the Study

This study covers sample of group which includes managers and all employees working at steel manufacturing Company S in Kapar, Klang. People involve from the beginning and during the project delivery are consists of Technical Department, Production Department, Human Resources Department, Sale Department, Finance Department and others department (Procurement, Logistic, Engineering Department, Safety and Health, Maintenance, Quality Control).

1.6.1 Applications of Work Teams

Two watershed events called attention to the benefits of applying work teams beyond sports and military settings: the Hawthorne studies (Homans, 1950) and European experiments with autonomous work groups (Kelly, 1982). Enthusiasm has alternated with disenchantment (Bramel & Friend, 1987), but the 1980s have brought a resurgence of interest.

Unfortunately, we have little evidence on how widely work teams are used or whether their use is expanding. Pasmore, Francis, Haldeman, and Shani (1982) reported that introduction of autonomous work groups was the most common intervention in 134 experiments in manufacturing firms. Production teams number among four broad categories of work team applications: (a) advice and involvement, (b) production and service, (c) projects and development, and (d) action and negotiation.

1.6.1.1 Advice and Involvement

Decision-making committees traditional in management now are expanding to first-line employees. Quality control (QC) circles and employee involvement groups have been common in the 1980s, often as vehicles for employee participation (Cole, 1982). Perhaps several hundred thousand U.S. employees belong to QC circles (Ledford, Lawler, & Mohrman, 1988), usually first-line manufacturing employees who meet to identify opportunities for improvement. Some make and carry out proposals, but most have restricted scopes of activity and little working time, perhaps a few hours each month (Thompson, 1982). Employee involvement groups operate similarly, exploring ways to improve customer service (Peterfreund, 1982). QC circles and employee involvement groups at times may have been implemented poorly (Shea, 1986), but they have been used extensively in some companies (Banas, 1988).

1.6.1.2 Production and Service

Teams use technology to generate products or services, as in assembly, maintenance, construction, mining, commercial airlines, sales, and others. These usually consist of first-line employees working together full-time, sometimes over protracted periods, with freedom to decide their division of labor. For example, at Volvo in Kalmar, Sweden, teams of 15 to 20 employees assemble and install components in an unfinished automobile chassis conveyed by motorized carriers (Katz & Kahn, 1978). They elect their own leaders and divide their tasks, but have output quotas. Such teams have been called autonomous (Cummings, 1978), self-managing (Hackman, 1986), or self-regulating (Pearce & Ravlin, 1987) and have been used in

factories at Sherwin-Williams (Poza & Markus, 1980), General Foods (Walton, 1977), and Saab (Katz & Kahn, 1978).

1.6.1.3 Projects and Development

Groups of white-collar professionals such as researchers, engineers, designers, and programmers often collaborate on assigned or original projects. Their cycles of work may be longer than in production and service, and outputs may be complex and unique. They may have a mandate of innovation more than implementation, broad autonomy, and an extended team life span. An example is a team of engineers, programmers, and other specialists who design, program, and test prototype computers (Kidder, 1981). However, their performance may be difficult to assess because the value of their one-of-a-kind outputs, like studies and patents, may only be apparent long after the work is finished.

1.6.1.4 Action and Negotiation

Sports teams, military combat units, flight crews, surgery teams, musical groups, and others are highly skilled specialist teams cooperating in brief performance events that require improvisation in unpredictable circumstances. They often have elaborate, specialized roles for members. Their missions usually call for outcomes such as negotiating a contract or winning a competition, as in military units (Dyer, 1984) or in executing a safe flight, as in flight crews (Foushee, 1984).

Other applications do not easily fit the types mentioned so far. Examples include some management teams (Bushe, 1987), transition teams for corporate mergers, and start-up teams. However, differences among applications can perhaps best be addressed through an analytic framework (Sundstrom, de Meuse, & Futrell, 1990).

1.7 Definition of Term

1.7.1 Work Team

A team refers to a group whose individual efforts result in a performance that is greater than the sum of the individual inputs (Robbins and Judge, 2007) (Example; a team of taekwondo trainees with their trainer before a tournament). Teams exist in many forms; they can either be formal or informal, temporary or permanent, within the same department or across departments within an organization.

‘If the organization is to perform, it must be organized as a team’ (Peter Drucker). According to Robbins and Judge (2007), in pursuit of its goals, a team focuses more collective performance towards achieving its goals. A team tends to generate positive synergy through a coordinated effort. Whereas accountability lies in the individual for the team, members of the team tend to share mutual accountability. Members of a team tend to be selected for the particular skills, hence provide a complementary set of skills for the whole team.

Referring to an example previously, a team of taekwondo trainees with their trainer before a tournament; the goal of the team of taekwondo trainees is to demonstrate collective performance during the tournament especially in the team events. As for synergy, the taekwondo team is positive as they reinforce each other's performance during the tournament. The taekwondo team members hold individual and mutual accountability as their collective performance is dependent on it. As for skills, the team of the taekwondo trainees has complementary skills and they have to demonstrate discipline and order in performing the different formations and maneuvers.

Generally, there are numerous types of teams that originate in organizations. These include problem-solving teams, self-managed work teams, cross-functional teams and virtual teams in Figure 1.1.

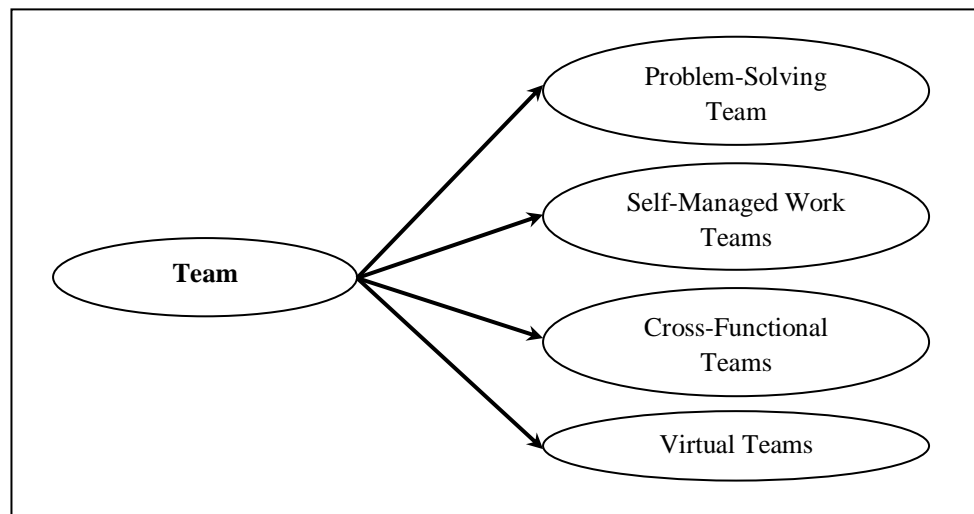


Figure 1.1 : Types of teams

1.7.1.1 Problem-Solving Teams

One prime example of problem-solving teams are the quality control circles which stemmed from Japanese work philosophy as one of the ways to improve the quality of their products, efficiency and their work environments. Through QCCs, a team of 5 to 12 workers from the same department discuss, identify and solve work-related problems by employing some quality tools and/or group decision techniques. There is a sense of achievement amongst QCC participants as they have been given the autonomy and responsibility to help solve the problems at work but the responsibility and approval still rest with their supervisors. As shown 'In The News - 8th Texchem Group QCC Convention' by Ahmad Nasar Johari (Texcorp), QCC can be an organizational-wide initiative and contributes to creativity, quality and productivity in Texchem. At the national level, the National Productivity Corporation (NPC) now known as Malaysian Productivity Corporation (MPC) serves as the National Secretariat. It organizes regional and national QCC conventions which bring together the best teams from the private and public sectors. The winners of the national QCC convention represent Malaysia at the international QCC convention.

1.7.1.2 Self-Managed Work Teams

Whereas problem-solving teams are led by supervisors, many organizations are practicing self-managed work teams and empowering them to solve work-related issues. Self-managed work teams, also known as self-directed work teams (SDWT), are groups consisting 10 to 15 employees who manage their own work and take on the responsibility of their supervisors. Members of SDWTs have a responsibility for managing themselves and their work. They learn multiple tasks that were previously

relegated to supervisors and managers (Steven et al., 1999). Kur (1996) describes SDWTs as teams that consistently satisfy the needs of its customers, employees, investors and others in its area of influence. Therefore, these teams frequently outperform other teams that produce similar products and services under similar conditions and constraints.

1.7.1.3 Cross-Functional Teams

As described earlier, self-managed or self-directed work teams tend to be more of autonomous work groups within the same function or department or production line. Sometimes we need people from different areas in order to solve a particular task problem. A cross-functional team may consist of employees from different work areas or functions working together to accomplish a task. For example, in preparation for the annual convocation at the Universiti Sains Malaysia, there is a Convocation Committee comprising of individuals from a variety of departments involved in the convocation. Representatives from various departments such as the Registrar, Chancellor, Bursary, Graduate School, Admissions and Records, Student Affairs, Development Office, Safety Office, and various other departments come together to plan, schedule and execute the events related to what is now a five-day convocation fair in August. This cross-functional approach is typical not only in the public universities, but in any organizations which undertake activities or products or services. For example, in Research and Development departments, you may find cross-functional teams comprised of R&D engineers working together with others in product and services, training, marketing, operations and finance for new product development.

1.7.1.4 Virtual Teams

The first three teams all operate on face-to-face basis, meaning the members interact with each other during meetings or discussions. Sometimes, people in different locations have to work together, for example, in multinational organizations where the R&D may be at the headquarters in one country but operations and marketing are in other countries and they need to work together on a new product. Hence, the fourth type of teams, virtual teams are appropriate as they use information and computer technology (ICT) to connect geographically dispersed team members in accomplishing a common task. Similar to the other three teams, virtual teams can do the same things such as communicating, sharing information, making decisions and completing tasks. As many companies involve their suppliers and partners, they also can form virtual teams comprising individuals from different organizations using ICT as a medium. Virtual teams use ICT such wide-area network, Internet, video conferencing or e-mail to allow team members to collaborate online regardless whether they are in the same organization or in different locations or countries (Ahmad et al., 2009).

1.7.2 Project

A project can be considered to be any series of activities and tasks that:

- Have a specific objective to be completed within certain specifications
- Have defined start and end dates
- Have funding limits (if applicable)
- Consume human and nonhuman resources (i.e., money, people, equipment)
- Are multifunctional (i.e., cut across several functional lines).

Projects are also time-phased efforts (much shorter than programs) and are the first level of a program. *NASA / Air Force Definition*: A project is within a program as an undertaking that has a scheduled beginning and end, and that normally involves some primary purpose.

Once a group of tasks is selected and considered to be a project, the next step is to define the kinds of project units. There are four categories of projects:

- *Individual projects*: There are short-duration projects normally assigned to a single individual who may be acting as both a project manager and a functional manager.
- *Staff projects*: These are projects that can be accomplished by one organizational unit, say a department. A staff or task force is developed from each section involved. This works best if only one functional unit is involved.
- *Special projects*: Often special projects occur that require certain primary functions and / or authority to be assigned temporarily to other individuals or units. This works best for short-duration projects. Long-term projects can lead to serve conflicts under this arrangement.
- *Matrix or aggregate projects*: These require input from a large number of functional units and usually control vast resources (Kerzner, 2003).

A project is a temporary endeavor undertaken to make a unique product, service, or result. Because projects make something for the first time, there is a fundamental uniqueness to project work that makes it different from the operational work of the organization: the uncertainties of a project, its lack of existing procedures, and the need to make trade-offs among variables necessitate more dedicated planning and a unique body of knowledge, skill, and capability (S. Cooke & Tate, 2011).

A project is the work done by an organization one time to produce a unique outcome. By *one time*, we mean the work has a definite beginning and a definite end, and by unique, we mean the work result is different in one or more ways from anything the organization has produced before. Examples of projects include the following:

- Building a new house
- Developing a new software application
- Performing an assessment of current manufacturing processes
- Creating a new radio commercial (Horine, 2013).

A project is a task that has to get done. It has an identifiable endpoint. Normally, in business, a project refers to a set of interdependent activities, usually involving a group of people working together on a one-time task for a period of one to eighteen months.

For example, designing a new car is a project. A group of people collaborates on design, building, testing, and modification. Once the new car goes into production, the project ends. The responsibility for producing the car is given to an ongoing department or business unit (Duffy, 2006).

1.7.3 Project Delivery

Figure 1.2 is a schema of the Lean Project Delivery System, a prescriptive model for managing projects, in which Project Definition is represented as a process of aligning Ends, Means and Constraints. Alignment is achieved through a conversation that starts with the customer stating:

- what they want to accomplish (have a place to live, capture a market for the goods they produce, provide a school so their children can be educated)
- the constraints (location, cost, time) on the means for achieving their ends.

This does not appear to be common practice. In the author's experience, clients often start by dictating means rather than revealing purpose, and rarely reveal what they are able and willing to spend to get the means for realizing their purposes.

Architects, engineers and constructors (AEC professionals) may be understood by some to have the job of providing the means requested by customers, who may or may not reveal their purposes or values. In this tradition, the AEC professional has no role in specification of customer purpose and value.

At first glance, this appears to be a reasonable practice. Apart from illegal or unethical objectives, the AEC professional has nothing directly to do with customer purpose. The same holds true for the constraints on means for fulfilling customer purpose. However, there can be an indirect impact on purpose and constraints. For example, suppose you want to buy a flat in a ritzy area of town. That desire might change once you understand the cost. Alternatively, if you better understood what was available, you might be willing to spend a bit more than you originally planned.

In the Lean Project Delivery System, it is assumed that the job of the project delivery teams not only to provide what the customer wants, but to first help the customer decide what they want. Consequently, it is necessary to understand customer purpose and constraints expose the customer to alternative means for accomplishing their purposes beyond those they have previously considered, and to help customers understand the consequences of their desires. This process inevitably changes all the variables: ends, means and constraints.

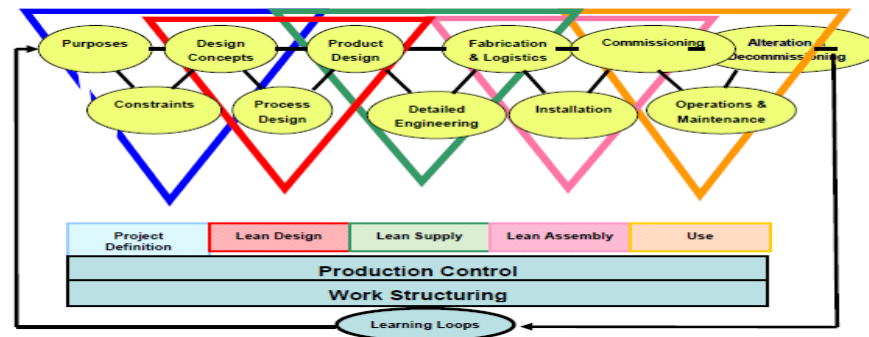


Figure 1.2 : Lean project delivery system (Ballard, 2000 and 2006) (Ballard, 2008)

Despite the complexity of construction projects, requirements and schedules have been continuously tightened (Brady, 2011). This has increased the challenges for the integration and management of the project team members, because more interactive collaboration between them is needed. However, traditional methods (e.g. design-bid-build, D-B-B) have mainly been based on bilateral contracts and the lowest bid, which does not encourage collaboration, because the project stakeholders try to optimize their own operations and risks. In addition, the traditional methods do not encourage the stakeholders to work innovatively and towards the customers' objectives. The aforementioned challenges highlight the problems of the traditional methods, and have forced the industry to seek other methods (Davies et al., 2007; Brady et al., 2006) for better collaboration, such as project alliance and integrated project delivery (IPD).

The American Institute of Architects (AIA, 2007, p. 2) has defined IPD as: [...] a project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses the talents and insights of all participants to optimize project results, increase value to the owner, reduce waste, and maximize efficiency through all phases of design, fabrication, and construction.

Thus, customer value creation is more than developing a competitive set of solutions and details. High customer value is created when solutions support customers' needs and processes (Kauppinen et al., 2009).

IPD has many of the same features as complex products and systems (COPS) (Hobday, 1998) and integrated solutions (Brady et al., 2005). However, the biggest difference in IPD and alliance projects is that the whole project delivery team works as one team under one mutual contract and organization, which allows them to share all of the risks and benefits.

The main difference between IPD and project alliance is the inclusion of lean tools and management approaches but also BIM in the IPD (Lahdenpera ; 2012; Lichtig, 2006). As to team selection, there is a standardized process for selecting the best team (including the key stakeholders) while in IPD projects the team members are typically selected separately (Lahdenpera ; 2012; Lichtig, 2006). Also the integrative and collaborative formal contract, which is compulsory in alliances while in IPD projects it is not, is identified as a difference. In alliance projects there are separate contracts for the development and implementation phase (Ross, 2003). Contracts are mostly used in IPD projects as well, but it considers the whole lifecycle of the project (Lichtig, 2006). Furthermore, the IPD contract allows involving numerous subcontractors on the same contract conditions (Lahdenpera ; 2012), even in the different phases of the project.

Aforementioned differences have an influence on the content and form of the contracts. Alliance contracts are couched in terms of “we” and rest upon the formal incentives and commercial terms (Ross, 2003) while IPD contracts rest more upon soft and flexible values that foster communication, creativity and collaboration but also encourage and reward behavior that increases project value (Ashcraft, 2010; Lichtig, 2006). On the whole, it is more about the technicalities than true differences and thus there may be no actual difference between IPD and alliance (Lahdenpera ; 2012). Basically, the IPD can be regarded as a generic term to illustrate the relational and integrative project delivery methods.

Collaborative project delivery methods allow deeper collaboration and involvement through shared risks, profits, and objectives (Ross, 2003; Olander and Landin, 2005; Lahdenpera ; 2009). Furthermore, such methods encourage participants to make decisions that are best for the project, not for themselves, and work as a team towards mutual objectives (Sakal, 2005). Thus, IPD ultimately leads to a competitive advantage.

Experiences in integrated project deliveries at complex construction projects have usually been encouraging (Bresnen and Marshall, 2000; Ross, 2003). However, IPD is a relatively new way of working, which is why some challenges have come up, and not all of the projects have met the desired performance. In some cases, the project team members tried to find the right team formation and design procedures through trial and error (Cohen, 2010), which is inefficient (Aapaoja, Herrala, Pekuri, & Haapasalo, 2013).

1.7.4 Project Failure

Designing a good product is not easy. With short time-to-market, fierce competition in an already crowded marketplace, and ever-more demanding consumers, organizations must continually make trade-offs in identifying project priorities and allocating resources. Cooper (2000) estimated that 46 percent of the resources that companies devote to the design, development, and launch of new products go into projects that don't succeed in the marketplace or perhaps never even make it to market. Though product development is only part of a product life-cycle, the importance of the design process is that the decisions made during have greatest effect on the cost of a product even though it requires the least investment.

A number of studies have tried to identify key elements of both successful and failed products and projects. Many of them pinpoint failures in product definition and management as major causes. Pinto and Kharbanda (1996) identified major causes of project failures, including ignoring the project environment and stakeholders, not understanding project trade-offs, and blaming the most visible when problems occur. Up-front homework really does pay off, not only in terms of high profitabilities and success rates, but also saves time. Gupta and Wileman (1990) surveyed large technology-based firms and found poor product definition was the most frequently cited reasons for product development delays, shown in Figure 1.3.

Tipton (2000) attributed project failures, including the duplication of effort and extra costs, on a lack of constantly applied project management methodology. For this reason, many believe the key to project success and error-proofing design (Chao et al., 2001) is by clarifying product definition through key design for manufacturability (DFM) tools.

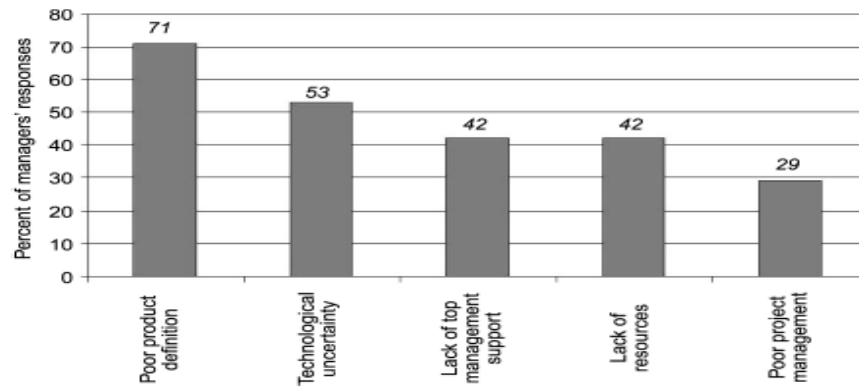


Figure 1.3 : Typical reasons for product development delays (Chao & Ishii, 2004)

There are a number of different reasons where leadership is not at fault for an adverse outcome. However, it should be noted that “the concept of project failure is nebulous,” (Pinto and Mantel, 1990, p. 269), thus truly making a single, unified definition of “project failure” quite unattainable. But as Pinto and Mantel (1990, p.270) indicate, there are “some common aspects that suggest certain characteristics are strongly related to perceived project failure.” These common aspects are classified as internal and external processes. The internal processes constitute the implementation of the project itself (i.e. team performance, meeting budgets and deadlines, etc), and the external processes are measures of effectiveness made by the client and/or miscellaneous external pressures. Early termination of a project can be perceived as a failed project. The factors contributing to this theoretically failed project can include legal, political, environmental, or social setbacks, which are examples of external pressures. In addition, sick employees and other internal “emergencies” could have added to a deteriorated relationship with the client through additional project delays; these are examples of internal pressures. As any project manager will agree, there are almost always some unpredicted factors that can alter the efficiency of a project. Some of these internal and external factors bear more burden than others, and certain combinations of these lead to bigger problems, contributing to a resulting “failed” project (Nixon, Harrington, & Parker, 2011).

1.8 Research Hypothesis

Based on the problem statement, the following are the hypothesis in this study :

- H₁ : There is relationship between the overall work team effectiveness and overall project delivery
- H₂ : There is relationship between the overall work team effectiveness and each variable of project delivery
- H₃ : There is relationship between each variable of work team effectiveness and the overall project delivery
- H₄ : There is an influence between work team effectiveness and project delivery

1.9 Limitation of the Study

Due to limitation of time and resource, more reliable and informative method such as assessment of organizations interview was not used. Therefore, more time needed and also effort to ensure each respondent understand to answer each question given in the questionnaire. Other than that, it was compulsory to prepare a letter to apply for authorization to obtain information so that can proceed for questionnaire distribution and data collection.

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