

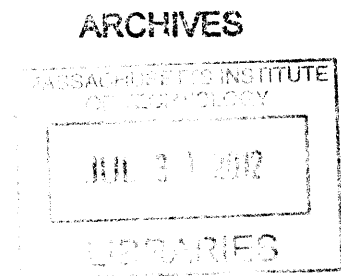
Multisourcing Conflicts: What Does a Manager Focus On?

A System Dynamics Based Analysis

by

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B.Tech., Electrical Engineering
PGDBM – Marketing



SUBMITTED TO THE SYSTEM DESIGN AND MANAGEMENT PROGRAM
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Dedicated to myself for surviving through
multiple arguments and discussions
over the thesis with my wife

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Submitted to the System Design and Management Program
On January 20, 2012 in Partial Fulfillment of the
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ABSTRACT

Multisourcing has its own set of challenges. With more people from different organizations on board, conflicts are bound to arise. The complex nature of these conflicts calls for specialized resolution strategies, which means more effort for the client managers.

in order to look at the key conflicts and their resolution strategies in information technology projects, a case study approach for a single company making extensive use of multisourcing was adopted. After studying the previous literature on this subject and conducting extensive research through interviews of managers, the key conflict factors identified were power struggles, working in silos, knowledge and understanding gaps, withholding information and finger pointing. The resolution techniques adopted by managers were client moderated knowledge transfer sessions, client escalation, developing team motivation, effective communication and building personal rapport. The factors were found to be in line with the ones identified in the literature research.

Once these factors were rated in terms of their significance and occurrence (by means of surveys), system dynamics was chosen as a modeling tool to capture the causal relationships that the conflict and resolution factors have with the system. System dynamics was chosen as it explicitly defines the cause effect relationships, interdependencies and feedback mechanisms. Based on this, simulation runs were done and sensitivity analyses for the individual impact of all the conflict and resolution factors were carried out.

It was found that the descending order of criticality for the conflicts in the case of the company was knowledge gaps, withholding information, finger pointing, working in silos and power struggle. The descending order of the available resolution options was effective communication, personal rapport, client moderated knowledge transfers, motivation and client escalations. This sequencing can help the managers at the company to address the key conflicts in order of priority. They can then devise their strategy by combining multiple resolution options and gauging the impact of their strategy (vide the system dynamics model constructed in this thesis) as is pertinent to their organization.

Thesis Supervisor: Prof. Jeanne W. Ross

Title: Director and Principal Research Scientist, CISR, Sloan School of Management

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In an attempt to incorporate my learning from the System Dynamics course that I took as part of my program, I used SD modeling for studying conflicts. I am extremely thankful to Prof. James Lyneis for providing me constructive feedback on the same, which helped me make the model more sound and robust.

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1. Introduction

1.1 Motivation

Having been a part of a vendor team in a multisourcing scenario, I have experienced conflicts between different vendors, and the client and vendors firsthand. The ultimate objectives of meeting the client's requirements are almost always fulfilled, but that happens with its share of friction and ripples which affect the motivation of the team members and productivity, quality and the speed of the output.

Thus, the intention of this thesis is to study the causal relationships that these conflict parameters have and how they can be mitigated to the best extent possible, by means of establishing a system dynamics framework around the conflicts and their associated challenges. Arriving at recommendations like some go-to strategies in cases where conflicts overpower the harmony of a multisourced team would be really beneficial for both the managers and the team members working in such teams.

1.2 Problem Statement

Almost all corporations are heavily dependent on information technology today. The organizations that make the best use of technology like Enterprise Resource Planning (ERP), cloud computing and data management almost always rely on multiple outsourced vendors to handle the information technology challenges and execution, under the supervision of the company's information technology department.

Under such circumstances, conflicts are bound to occur, especially when the team members are from different organizations, with different ultimate objectives. In such cases, managers resort to their personal styles of reacting to the situation (in order to manage these situations) as the solutions as per the governance policies may seem too rigid to implement during these times. Efforts are seldom made by

managers to understand the causal effects of these conflicts and to address these factors from the roots.

Therefore, the problem this thesis addresses is the cause and effect relationships of the conflicts between multisourcing vendors in an information technology project. I will study this issue with an exploratory study of the conflict parameters specific to multisourcing and formulate a strategy to efficiently manage the key conflict parameters in such cases. System Dynamics would be the key tool used to create and study the dynamics of this situation.

1.3 Thesis Goal

The key objective of this thesis is to identify and prioritize various points of conflicts in the modern day information technology departments of companies, in order to aid managers with decision-making. A growing number of companies are outsourcing their information technology processes and they rely heavily on multiple vendors for this today. Outsourcing has its own set of challenges, managing multiple vendors is even more challenging. This research is specific to companies that rely on multisourcing strategies to form their information technology teams. Having different vendors on board to achieve common objectives of the company, in addition to fulfilling their own interests of business expansion makes multisourcing a very vibrant field to study.

The additional objective of this thesis is to study how multisourcing conflicts affect the productivity and outputs of the information technology team's projects and productivity. I will also analyze the different strategies managers use to mitigate the ripples created by these conflicts.

To achieve these objectives, I will develop a system dynamics model to track the cause and effect relationships between the various conflict factors and the variables in a project. I will also factor the mitigation strategies into this model. Thereafter, I

will run the model with a hypothetical set of numeric parameters (for the variables in the model) and do a sensitivity analysis to study how these conflicts affect the project outcomes. Based on this, I will make recommendations regarding which conflict factors should be the key focus areas for information technology project managers in a multisourcing environment and which mitigation strategy(ies) work(s) best.

1.4 Thesis Outline

This chapter (Chapter 1) provides information on the motivation, problem statement and the goal associated with this thesis. The remaining chapters are as follows:

Chapter 2 will provide an overview on the shift from single-sourcing to multisourcing and some features of multisourcing.

Chapter 3 will cover the area of multisourcing conflicts and resolution based on the research done by scholars so far.

Chapter 4 will discuss the research methodology employed in this thesis.

Chapter 5 will cover the case description of the company on which the research of this thesis is based.

Chapter 6 will analyze the interviews and provide a discussion on the same. The interviews were conducted for the client side managers and vendors for the company mentioned in Chapter 5.

Chapter 7 will provide the details of the system dynamics modeling of the multisourcing conflicts and resolution scenarios.

Chapter 8 will cover the conclusions and recommendations based on the results of system dynamics simulation.

Chapter 9 will discuss the limitations and further scope associated with this research.

Chapter 10 will display the appendices.

This will be followed up by references and bibliography.

2. From Outsourcing to Multi-sourcing: The Progression

In the first part of this chapter, I will look at the evolution of outsourcing, its challenges and the factors that eventually led to the evolution of multi-sourcing. Thereafter, in the next section of this chapter, I will cover the development of multi-sourcing, its strategies and best practices, looking at the literature research done in this field so far. This will take us a step closer to our area of interest, i.e. conflicts in multi-sourcing.

2.1 Outsourcing: Evolution, Definition and the Current Market Scenario

With the advent of a global scale of operations, information technology serves as the backbone of an organization's systems. However, there is a constant pressure of high performance, round the clock availability, minimum maintenance, easy integration etc. on the IT systems. Thus, outsourcing is the best options for firms as it enables them to choose the best people to handle their IT systems¹.

The concept of focusing on core competencies, which was first, publicized by Hamel and Prahalad in the early 1990s gave further strength to the idea of outsourcing. Organizations that understand their core competencies can outsource other activities that are essential, but not unique (or core) to their value proposition. As companies tried to understand the strategic importance of IT, outsourcing became a topic of great interest and debate in the world of information technology.

According to Dibbern et al. (2004), IT outsourcing stepped into the limelight in 1989 when Eastman Kodak engaged in a strategic alliance with IBM, Digital Equipment Corporation and Businessland². There have been many outsourcing evolution models

¹ Information Technology Outsourcing - The Canadian Institute of Chartered Accountants, Information Technology Advisory Committee, 2003

² Prof. Dr. Michael Amberg, Florian Fischl, Martin Wiener: Background of it outsourcing, Working paper no. 03/2005

like the ones proposed by Varanasi (2007), but the most comprehensive one is provided by Hätönen and Paju (2009). They identify three distinct eras in the development of outsourcing as a phenomenon as shown in the figure below: the era of the Big Bang (outsourcing of non core business processes, 1980s to early 1990s), the era of the Bandwagon (emergence of core competence thinking in the 1990s), and the era of Barrierless Organizations (transformational outsourcing from early 2000 onwards)³.

Outsourcing has been defined in a lot of ways, of which, the most comprehensive definition is provided by Kern, which says that “*Outsourcing is a decision taken by an organization to contract-out or sell the organization’s IT assets, people and/or activities to a third party vendor, who in exchange provides and manages assets and services for monetary returns over an agreed time period.*” (Kern, 1997, p. 37)⁴.

Varanasi (2006) captures the essence of outsourcing relationships by stating that outsourcing is a long-term, results-oriented partnership between a buyer and a provider of services, usually applied to a business function, but may also encompass a single activity or a portfolio of services. Long Term doesn’t apply to longevity of contractual relationship, rather it refers to an organization’s ability to “divest” itself from performing the activity(ies) itself. Results-Oriented clearly indicates responsibility and accountability allocation to the provider, at times including business risk and ownership as well⁵. The key factor in outsourcing is that even though there is a transfer of the delivery of services, accountability is held by the client company. This factor is the single guiding point for all outsourcing relationships.

³ Anna Kyrki, OFFSHORE SOURCING IN SOFTWARE DEVELOPMENT: Case Studies of Finnish-Russian Cooperation

⁴ Shawn Alborz a, Peter B. Seddon b and Rens Scheepers, A Model for Studying IT Outsourcing Relationships: 7th Pacific Asia Conference on Information Systems, 10-13 July 2003, Adelaide, South Australia

⁵ Bobby Varanasi, Matryzel Consulting – Multisourcing A comparative to Outsourcing, September 2006, Vol. I, Issue 2

To get an idea of how fast the IT sourcing market has grown, it would help to know that the global outsourcing industry had \$50 billion revenues in 1994, US \$152 billion in 2000, and as per most forecasts, is predicted to go over US \$340 billion by 2014⁶. With an industry size this big and involving so many parties affecting the business/project outcomes, outsourcing posed its own set of challenges, which I have explored in the next section.

2.2 Challenges and Risks of IT Outsourcing

Several studies on IT outsourcing challenges reveal the precarious nature of the outsourcing business (DiRomualdo & Gurbaxani, 1996; Gallivan & Oh, 1991; Keil, Cule, Lyytinen, & Schmidt, 1998; Lacity & Hirschheim, 1993; McCue 2005; Petrie, 2000a, 2000b; Project Management Institute, 2005; Power, Bonifazi & De Souza 2004; Tafti2005).

Amongst all the extensive research done in the field of IT outsourcing risks and challenges, the most comprehensive list has been provided by Sharma, Apoorva, Madireddy and Jain (2008)⁷ as follows:

- High costs, occasional inefficiencies, potential source of morale problems, hidden expenses
- Shirking – a vendor deliberately underperforms while claiming full payment
- Poaching – a vendor using strategies and applications developed for one client for another client

⁶ Leslie Willcocks - Machiavelli, management and outsourcing: still on the learning curve. *Strategic Outsourcing: An International Journal* Vol. 4 No. 1, 2011 pp. 5-12

⁷Ravi Sharma, SR Apoorva, Venkata Madireddy, and Varun Jain, Best Practices for Communication between Client and Vendor in IT Outsourcing Projects, *Journal of Information, Information Technology, and Organizations* Volume 3, 2008

- Re-pricing – the vendor changes the financial terms at some point in a long-term contract or overcharges for enhancements or extensions
- Technology evolution – because IT evolves rapidly, signing long-term contracts is risky
- Cost of switching to another vendor is often high
- Loss of control – outsourced vendor may not be as responsive to service levels as in-house employees, inability to control the vendor’s costs, schedule, and technical quality
- Loss of morale due to layoffs or transfer of existing staff
- Less flexibility due to the need to use the vendor’s computing platforms
- Being locked in to vendors’ proprietary software and hardware
- Misalignment between the company and the outsource vendor
- Micromanagement by the client with all the associated costs and implications
- Loss of control over critical strategic resources

2.3 The Changing Scenario of Outsourcing

Although outsourcing introduced a new way of carrying on a company’s IT operations, the risks and challenges of outsourcing mentioned above, forced the management teams to question the long term sustainability of having a single vendor outsourcing. As a result, organizations looked at the option of bringing multiple vendors on board. They categorized vendors in terms of the different technologies they mastered and also in terms of price. Often, a company would consider outsourcing the same/single function/technology to different vendors.

This multisourcing solution solved the technology and the cost problems for the client organizations. Vendors now faced a possible threat of losing business opportunities to the competing vendors and hence, had to keep themselves technologically advanced. On the other hand, they could not increase their prices

(without the competing vendors also doing so). This solved the issues of increasing costs, dependency risks and technological obsolescence.

2.4 Multisourcing

There have been numerous ways in which multisourcing has been defined. Gartner first introduced the term in 2005. The best definition, by far, has been provided by Cohen and Young(2006) as “the disciplined provisioning and blending of business services (often IT related) in order to find the optimal set of both internal and external service providers”⁸.

Generic outsourcing and the initial days of multisourcing were relatively simple. The complications started emerging when the dimension of offshoring added geographic diversity to the multisourcing dynamics.

Therefore, companies no longer faced a simple vendor A versus vendor B versus vendor C or an Ireland versus India decision. Instead they faced a decision between several vendors with operations in offshore, nearshore and onsite locations. Thus, a large and complex multinational organization could now choose a combination of vendors with different capabilities to onsite sensitive IT work for IP reasons, nearshore business processes requiring Spanish language skills or open source IT work to Latin America, nearshore analytics or complex financial modeling work to Eastern Europe and offshore general IT helpdesk work to India. In essence, multi-sourcing now offers a large and complex organization, a full global outsourcing delivery model⁸.

⁸ <http://outsourcportfolio.com/multisourcing-global-outsourcing-delivery-model>, June 2009

This complexity of the sourcing models led to the emergence of ‘best-of-breed’ multi-sourcing solutions. This area has been covered extensively by Banerjee and Williams (2007)⁹. They have structured the key differentiators between take-it –all outsourcing and best-of-breed solutions in terms of Structure, Pricing, Scalability, Sourcing Options and Effectiveness of the retained organization. These best of breed solutions would eventually converge to form virtual corporations (overcoming the geographic barriers) with modular operations. Thus, it is amply evident that multisourcing has gained momentum over the past decade.

2.5 Key drivers and Best Practices

To identify the reason behind this momentum, it is important to understand the key drivers of multi-sourcing. The most important factors luring companies towards multisourcing have been identified as the ones that give them ability to leverage discrete competencies, protect loss of business knowledge, access new markets and have contractual flexibilities (Varanasi, 2007). Varanasi also emphasized on some of the multi-sourcing best practices for companies as aligning sourcing strategies, enforcing contractual clauses flexibly, managing provider relationships strategically, preparing for conflicts, developing master contracts to include statement of works, and, developing specific measurement criteria¹⁰.

⁹Abhijit Banerjee, Rohini Williams – Sourcing in a flattening world : A ‘Best-of-Breed’ approach, Infosys White paper, June 2007

¹⁰ Bobby Varanasi, Matryzel Consulting – Multisourcing A comparative to Outsourcing, September 2006, Vol. I, Issue 2

2.6 Discussion

It is imperative to note here that Preparing for conflicts has been identified in several research studies as one of the best practices that the companies must adopt to have a successful multi-sourcing experience. To prepare for conflicts, it is essential that the companies have an understanding of the kinds of conflicts they may encounter during the process and have proper mitigation strategies in place beforehand as well as during the multi-sourcing process. This pre-emptive approach will not only reduce the instances of conflicts but will also lead to better, more collaborative relationships amongst the different parties involved. This will increase the chances of better project outcomes. In order to achieve this, we will analyze the role of conflicts in greater detail in the next chapter.

3. Multi-Sourcing Conflicts and Resolution Styles

Having looked at the evolution and development of IT outsourcing and multi-sourcing in the previous chapters and established the background, this chapter focuses on the conflicts in multi-sourcing process, resolution styles for the same and the impact of these on the success/ failure of projects.

3.1 Multi-sourcing challenges and Conflicts

In the words of Mark Kobayashi-Hillary, head of research for global sourcing at Indian outsourcer TCS, *“Multisourcing is a complex beast. [It] creates enormous coordination complexity for the client and for the vendors themselves. How do you get multiple vendors to deliver a seamless integrated service? How easy is it to switch to another vendor ___? Who is ultimately accountable?”*¹¹

The more the number of parties involved in multi-sourcing process, the more the potential for conflict. As illustrated through the following models, it can be seen that how the complexity gets compounded just by moving from single vendor to two vendors. In today’s times the large corporations have more than two vendors working on some projects. In the single vendor outsourcing scenario, the biggest possible conflict points were between the client and vendor and between the offshore and onsite teams of the vendor. Although critical to a project’s success, these conflicts were comparatively easier to track and resolve. These conflict channels are shown in the figure below (the arrows depict the conflict channels):

¹¹ Ravi Bapna, Anitesh Barua, Deepa Mani, Amit Mehra, Research Commentary Cooperation, Coordination, and Governance in Multisourcing: An Agenda for Analytical and Empirical Research. Information Systems Research, Vol. 21, No. 4, December 2010, pp. 785–795



Figure 1: The key conflict channels in outsourcing

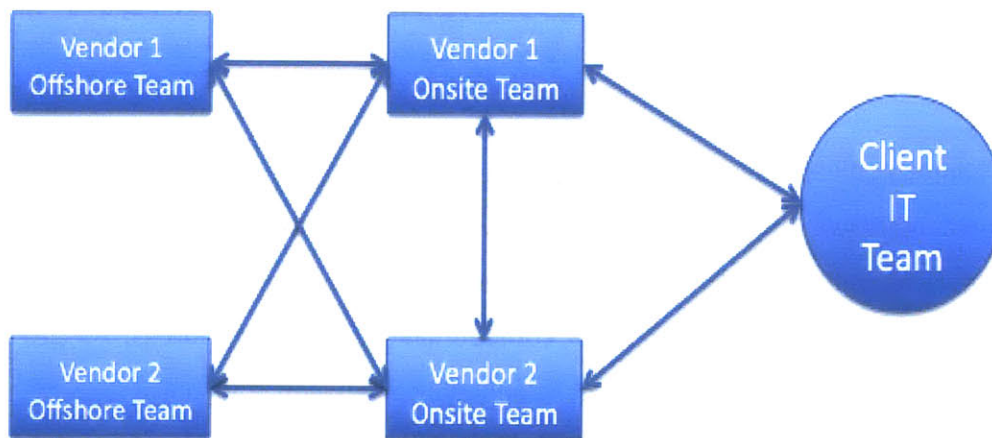


Figure 2: The key conflict channels in multisourcing

The situation however, becomes a lot more complex when multiple vendors are roped in. In a multi-sourcing scenario, in addition to the geographic diversity of the vendors' onsite and offshore teams being a huge challenge, the cultural differences (which were not as high in the case of a single sourcing scenario) make room for far more potential conflicts. In order to appreciate the increase of conflicts, the figure above shows the conflict channels in a multi-sourcing environment where there are just two sourcing vendors (the arrows depict the conflict channels). Thus, it is not difficult to imagine the complexity when there are multiple vendors (of the order of 3 or 4) on board, involved in multiple projects from multiple geographic locations and time zones, working with multiple client teams simultaneously.

Thus, multisourcing necessitates individual and collaborative effort of multiple vendors at the back end to come together to create a seamless, integrated service at the front end for the client. Given that the tasks performed by multiple vendors are

not independent, there are significant challenges to motivate vendors not only to put in best effort in their primary tasks but also to cooperate with and help other vendors perform their tasks in the best interest of the client¹².

3.2 Defining Conflict and its Causes

Conflict is a phenomenon that has been observed in a wide range of organizational processes and outcomes. It's role and importance has been studied in different fields like Psychology, Communication, Organizational Behavior, Politics, Marketing and Information Systems.

As per Pantelia and Sockalingam, conflict is defined as “an expressed struggle between at least two inter-dependent parties who perceive incompatible goals, scarce rewards, and interference from the other party in achieving their goals” . Its source can vary from power differentials, competition over scarce resources, tendencies to differentiate, negative inter-dependence between work units, ambiguity over responsibility or jurisdiction, to denial of one's self-image or characteristic identifications including values and sensitivities”¹³.

Researchers have taken a lot of interest, especially in the study of organizational conflict over the last decade and have made significant development in unraveling the complexities of organizational conflict phenomena. What has set these studies apart from earlier studies is: (1) the ethos that conflict is a phenomenon omnipresent in organizational life and simply inevitable; it is the nature of complex organizations and central to what an organization is, and (2) the underlying notion that conflict is a twin edged sword with the potential to be both functional and dysfunctional. Thus, the emergent view of conflict is that it is both an enemy and a friend on the perpetual expedition to organizational efficiency and effectiveness¹³.

¹² Ravi Bapna, Anitesh Barua, Deepa Mani, Amit Mehra, Research Commentary Cooperation, Coordination, and Governance in Multisourcing: An Agenda for Analytical and Empirical Research. Information Systems Research, Vol. 21, No. 4, December 2010, pp. 785–795

¹³ Niki Pantelia, Siva Sockalingam, Trust and conflict within virtual inter-organizational alliances: a framework for facilitating knowledge sharing. Decision Support Systems 39 (2005) 599– 617

According to Wastell (1999), many issues in the information technology teams stem from anxiety and stress that are inherent to IT projects. Smith and McKeen (1992) suggest several other reasons why conflict is prevalent is ISD specifically between IS and business management. These reasons include¹⁴:

- Communication gaps
- Misalignment of goals
- Credibility problems
- Poor system design

Whenever there is an interaction involving humans, there are bound to be conflicts of interests, viewpoints and objectives. The same is true for multisourcing as well (DeBrabander and Thiers 1984; Robey et al. 1989; Smith and McKeen 1992). Another observation is that when multiple parties work together with their selfish interests as the sole objectives, factors like politics and finger pointing are bound to arise, that hamper the regular working relations in the information technology teams. There has been a lot of research conducted by Robey et al. (1989), Newman and Sabherwal (1989), Markus (1983), Hirschheim and Newman (1991), Franz and Robey (1984), Glasser (1981) and Smith and McKeen (1992)¹⁵.

In another study conducted by Unisys (2009)¹⁶, it was seen that there are some situations in a multi-sourcing environment that often create tension. These situations are transition, competition between providers, introduction of a new provider or an internal team, financial difficulties or commercial changes and, personnel changes.

¹⁴ John Lamp, Graeme Altmann & Timothy Hetherington, Functional Group Conflict in Information Systems Development; 14th Australian Conference on Information Systems, November 2003

¹⁵ Henri Barki, Jon Hartwick, Interpersonal conflict and its Management in information system Development; MIS Quarterly Vol. 25 No. 2, pp. 195-228/June 2001

¹⁶ Building an effective culture in a multisourced IT environment, Unisys Corporation 2009

3.3 Forms of Conflict

Several organizational conflict literatures have categorized the conflicts in an organization into three buckets¹⁷:

- *Relationship Conflict* tends to be emotional and focused on inter-personal incompatibilities or disputes and typically provokes hostility, distrust, cynicism, apathy and other negative emotions.
- *Task Conflict* is generally task oriented and is focused on judgmental differences on the best solution to achieve organizational objectives .It is a condition in which individuals disagree about task issues including goals, key decision areas, and the appropriate choice for action.
- *Process Conflict* concerns an “awareness of controversies about aspects of how task accomplishment will proceed”. This form of conflict arises from differences of opinion regarding roles, responsibilities, time schedules and resource requirements.

Literature suggests that there is a strong relationship between these three types of conflicts, and often, one may lead to the other. Although task conflict might have a positive impact in the beginning, but it may eventually lead to the other two forms of conflicts, which may have a detrimental impact.

3.4 Conflicts and the Role of Social Identification Theory

It has been observed that often conflicts amongst vendor teams arise because of members of vendor teams not willing to cooperate with each other, as they feel a sense of differentiation towards an employee of another vendor. This behavior can be traced to the social identity theory. As per social identification theory, humans may feel a sense of affinity towards other humans, with whom they share a common ground (nationality, organization, profession etc.). They may distinguish themselves from each other based on these factors as well. This can also be true for

¹⁷ Niki Pantelia, Siva Sockalingam, Trust and conflict within virtual inter-organizational alliances: a framework for facilitating knowledge sharing. *Decision Support Systems* 39 (2005) 599– 617

multivendors working for the same client. While working for the client might be a unifying factor for people from different vendor organizations, their employers (vendor organizations) may be the biggest differentiating factor. This can be the origin of several conflict points¹⁸.

3.5 Interpersonal Conflicts

Although deemed critical to project success, few research studies in the past have actually concentrated on the role of interpersonal conflict (amongst other types of conflicts), its management or the impact it may have on the outcome of a project. (eg. Barki and Hartwick 1994b; Robey et al. 1989, 1993)

Interpersonal conflict is a term used to describe the ways in which people interact in terms of affiliation, agreement or difference of opinion (Rahim, 2001)¹⁹. There are many definitions for interpersonal conflicts by Thomas (1992a), Wall and Callister (1995), Putnam and Wilson (1982) and Hocker and Wilmot (1985)¹⁹.

To bring together the various definitions and concepts of conflict, Putnam and Poole (1987) and Thomas (1992a, 1992b) identified three general themes or properties: interdependence, disagreement, and interference²⁰:

Interdependence exists when each party's attainment of their goals depends, at least in part, on the actions of the other party. In essence, interdependence represents a key structural pre-condition of any conflict situation, providing an interpersonal context in which conflicts may arise.

Disagreement exists when parties think that a divergence of values, needs, interests, opinions, goals, or objectives exists. As such, disagreement represents the key cognitive component of interpersonal conflict.

Interference exists when one or more of the parties interferes with or opposes the other party's attainment of its interests, objectives, or goals. Interference thus

¹⁸ Vogt, Katharina, Beck, Roman, Gregory, Robert Wayne, Conflict as manifestation of culture in global is outsourcing relationships. 18th European Conference on Information Systems, 2010.

¹⁹ Marcus Henning, Evaluation of the Conflict Resolution Questionnaire. Auckland University of Technology, 2003.

²⁰ Henri Barki, Jon Hartwick, Interpersonal conflict and its Management in information system Development; MIS Quarterly Vol. 25 No. 2, pp. 195-228/June 2001

represents the central behavioral characteristic of any conflict.

In addition to the above, a fourth property, *negative emotion*, can also be added, which has been identified in several researches as a very critical factor (Amason 1996; Jehn 1995; Pinkley 1990; Pondy 1967; Thomas 1992a, 1992b).

Thus interpersonal conflict can be defined as “*a phenomenon that occurs between interdependent parties as they experience negative emotional reactions to perceived disagreements and interference with the attainment of their goals.*”

Together, these perceptions span situational (interdependence), cognitive (disagreement), behavioral (interference), and affective (negative emotion) elements of conflict situations. Barki and Hartwick note that all four properties are frequently present in information technology teams.

With this understanding of interpersonal conflict and its components, the next section relates to the role of interpersonal conflicts specifically in IT sourcing decisions.

3.6 Interpersonal Conflicts and IT Sourcing decisions

One of the most relevant work in this arena has been done by Ulbrich (2009) wherein, in his research titled ‘How interpersonal conflicts influence IS-Sourcing decisions’, he has attempted to establish whether interpersonal conflicts have a determining influence on an organization’s IS-Sourcing decisions²¹.

He states that, organizations believe that they make the best possible decisions guided by frameworks based on rational choice theory. However, interpersonal conflicts are usually overlooked or grouped together with other business factors. In his study, he found that interpersonal conflicts were expressed through four means:

²¹ Frank Ulbrich, How interpersonal conflicts influence IS-sourcing decisions; Strategic Outsourcing: An International Journal, Vol. 2 No. 3, 2009

- tensions between the personnel in the IS department and users' departments;
- lack of capabilities on a personal level;
- power in and between departments; and
- face-saving in the corporate group

Based on these findings, Ulbrich(2009) developed a generic model to illustrate how interpersonal conflicts enmesh with economic, business and technical factors, and influence IS sourcing decisions. There is also research that suggests that the negative outcomes of conflicts far outweigh the positive ones that have been identified in the past, in many research studies. Thus it is extremely important for an organization to pay special attention to the negative impacts caused by conflicts.

3.7 Conflict Resolution Styles

As mentioned by Green, 1989, conflicts within the Information System Development (ISD) project teams may have costly impact such as poorly developed systems, behavioral dysfunctions, negative user satisfaction, and failure to meet project timeline and budget²². Amongst the vast research done on conflicts, a lot of effort has been put to identify the conflicts, their management and resolution strategies employed by organizations. Some of the research done in this area is : conflict management styles and their role in achieving satisfactory outcomes (cf., Blake and Mouton 1964; Pruitt and Rubin 1986; Putnam and Poole 1987; Thomas 1976, 1992b; Wall and Callister 1995). Several studies have also been conducted on assessing conflict management styles. Examples are Kilmann and Thomas (1977), Putnam and Wilson (1982) and Rahim (1983). Many researchers have established five different styles of conflict resolution. They are: asserting, accommodating, compromising, problem solving, and avoiding. These resolution strategies are general strategies that individuals often resort to while dealing with conflicts²³.

²² Chang, Artemis, Chu, Chih-Chung, Chi, Shu-Cheng, & Lo, Hsin-Hsin, Understanding prejudice in information systems development project teams. In: Academy of Management Annual Meeting Proceedings 2010, Montreal, Canada.

²³ Henri Barki, Jon Hartwick, Interpersonal conflict and its Management in information system Development; MIS Quarterly Vol. 25 No. 2, pp. 195-228/June 2001

In a study by Unisys (2009), the resolution styles mentioned above and their application in a client-vendor multisourced setting has been elaborated. It states that, should a cultural tension point arise, or other provider problems need resolution, quick action is necessary to prevent long-term ramifications. The party responsible for resolving the issue or playing the mediator role may differ depending on the management model in the multisourced environment. Where the client maintains central management of the multiple providers, it may act as mediator between different parties or take direct action to resolve the situation. If the client has a prime vendor or multisourcing service integrator model in place, one provider may be tasked with resolving the issues on the client's behalf. If all parties are aligned to the common culture, and understand the roles and responsibilities, then it may be preferable for the client to allow the conflicting parties to resolve the issues between themselves and only become involved if they cannot come to a resolution²⁴.

In the discussion above, we have seen the complexities of a multisourcing setup and how conflicts affect the outcomes and decisions in a multisourced scenario. This provides me with a sound subject knowledge to proceed further on this thesis. As the next step, I will adopt a case based methodology to study a company which amply uses multisourcing and interview a few key stakeholders, both at the client and vendor ends for their perspective on conflict and resolution dynamics. Thereafter, I will utilize system dynamics modeling to analyze the impact of the key conflict and resolution factors identified in the interviews on the project outcome.

²⁴ Building an effective culture in a multisourced IT environment, Unisys Corporation 2009

4. Research Methodology

This research is an attempt to bring forth conflict factors in an organization. Since this is a subjective topic and situations are interpretive in nature, I have attempted to follow an open approach rather than going forth with a set of hypotheses. Thus, I selected to go with a set of structured interviews in order to take the research further. A case based approach of a single company was chosen for the same reason. The wide spectrum of multivendors that this organization employs, makes it a good choice for my analysis.

Conflicts by themselves are a very qualitative subject. I have attempted to provide a quantitative aspect to this by means of building a system dynamics based model for conflicts in a multisourced team. This would provide some rational guiding factors to managers and aid decision-making and conflict management.

4.1 Interviews

In the first phase, 13 intensive interviews were conducted based on open ended questionnaires. These questionnaires were kept open ended in order to derive maximum information and viewpoints from my interviewees. The interviewee set consisted of client end managers, vendor end client facing managers and vendors working on the information technology projects. These interviewees were from Americas and Asia Pacific Regions and worked on similar projects. The intent behind this was to capture geographic and cultural differences, if any, in addition to building a common ground to base my research on. The detailed client and vendor questionnaires can be found in Appendix I and Appendix II. Each interview lasted from 45 to 60 minutes.

The following table summarizes the interviewee set:

Client/Vendor	AMR Roles	No. of Persons
Client	SAP Project Manager	1
Vendor	SAP SD Senior Consultant	1
Vendor	SAP MM/PP Consultant	1
Client/Vendor	APAC Roles	No. of Persons

Client	SAP Project Managers	3
Client	Online Store Support Lead	1
Vendor	SAP SD Leads	2
Vendor	GCRM Consultants	2
Vendor	SAP Account Manager	1
Vendor	SAP MM Consultant	1
	Total	13

Table 1: The interviewee Set

4.2 Survey

As an outcome of these interviews, two key sets of parameters were identified - the key conflict parameters and the key resolution strategies adopted by the team members and managers for these conflicts. Thereafter, a survey was sent out to all the interviewees with all the conflict and resolution parameters that were identified in the interviews. This was done to factor in the quantitative aspect in the model. The respondents had to rate each parameter on two scales – Significance and Occurrence.

Significance is the importance of the factor, and is measured on a scale of 1 to 5, 1 being the least and 5 being the most significant.

Occurrence is the probability of the factor actually happening in the respondent's project(s). This is measured in terms of percentage, on a scale of 0 to 100.

The average of these responses were used as inputs to the system dynamics model.

4.3 System Dynamics Modeling

In the analysis phase, a system dynamics model was constructed in order to track the execution of project tasks. The conflicts and resolution strategies were built into this model. This was done with the help of a software called Vensim²⁵ (Vensim PLE for Macintosh, v5.10d). Then, this model was executed with a hypothetical set of

data and a sensitivity analysis was carried out to observe the extent of impact of the conflict points on the task completion and productivity of team members in the project. The impact of resolution strategies on these parameters was also built in. Based on this analysis a strategy was formulated which is helpful to both the clients and vendors, in order to smooth the execution of projects, whilst minimizing the effect of conflicts.

²⁵ For more details, please refer <http://www.vensim.com/>

5. Case Description

5.1 About the company

The company on which the case study is conducted was incorporated more than three decades ago. Today it is one of the major consumer electronics manufacturers in the world. It uses business-to-business, business-to-customer and online retail models to sell products and services. In order to maintain confidentiality, the company will be referred to as XYZ Inc. hereafter.

Its operations span the Americas, EMEA (Europe, Middle East and Africa) and the entire Asia Pacific with offices in almost every major country of all three geographies. This vast scale of operations motivated the company to look at outsourcing (at first) and multisourcing (thereafter) in order to manage and implements its information technology tools and ERP (Enterprise Resource Planning) package. The company uses SAP as its ERP backbone.

In this thesis, some key managers and team members in three different information technology projects were interviewed for their views on conflicts and resolutions in multisourced teams.

5.2 Background of Multisourcing in XYZ Inc.

Multisourcing started in the company around seven years ago. The company realized that the dependency on a single vendor had increased a lot and something needed to be done about this, in order to derive the benefits that had motivated outsourcing in the first place. Besides, the company also decided to outsource more information technology functions like electronic data interchange, extended technologies etc. (in addition to SAP) to different vendors with core competencies in those areas. This led the company to bring multiple vendors on board to handle different parts of the information technology pie.

5.3 The Current Multisourcing Partners for XYZ Inc.

Currently, XYZ Inc. utilizes the services of four key information technology service providers. In order to maintain confidentiality, the vendors would be referred to as A, B, C and D. The details of the services handled by each of these vendors and their association with XYZ Inc. are as follows:

Vendor A: They have the longest standing relationship with XYZ Inc. and are the most trusted partners. They handle the areas of online store and SAP Consultancy for XYZ Inc. This association started more than a decade ago and the scope of services provided by them has been growing ever since. However, they were the only outsourcing partners for XYZ Inc. and the increase in different technologies and the dependency factor (mentioned previously in Section 5.2) motivated XYZ Inc. to bring in more partners.

Vendor B: They have been providing services to XYZ Inc. for the past seven years. They handle the areas of SAP Consultancy and Electronic Data Interchange. The latter is their core competency but they have also been growing and performing well in the field of SAP Consultancy.

Vendor C: They have been associated with XYZ Inc. for close to five years now. They provide services in the areas of Global Customer Relationship Management (referred to as GCRM hereafter) and Extended Technologies.

Vendor D: They are the newest vendors for XYZ Inc. and they handle the area of Business Intelligence only.

XYZ Inc. signs annual contracts with each of these vendors wherein the billing rates, requirements, scope of service and other related terms are fixed for the year. The number of people from each vendor company is fixed to start with. In case there are additional requirements during the scope of different projects, XYZ Inc. encourages

the vendors to provide additional resources, who are screened by project managers at XYZ before they are placed on a project. In situations where the vendors are unable to provide resources for the technologies they handle, XYZ Inc. looks at independent contractors for the specific requirements.

5.4 The Key Stakeholders

The following figure denotes the key stakeholders and their interactions in the case of information technology services for XYZ Inc.:

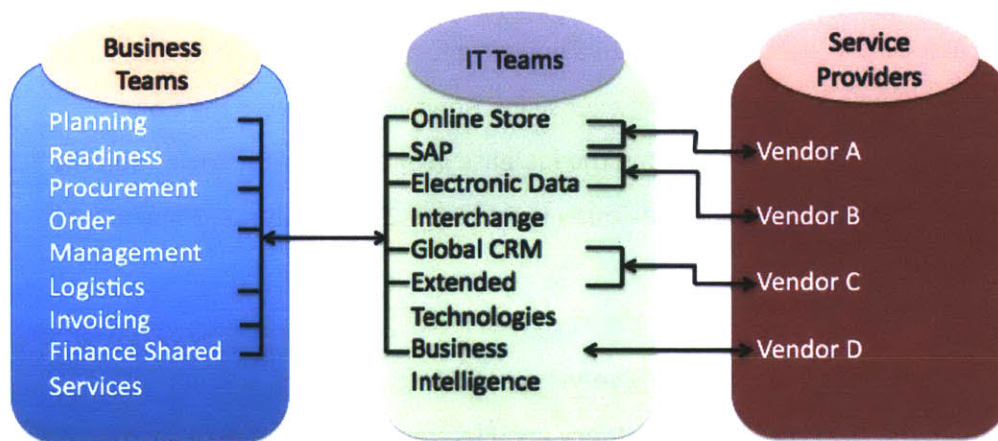


Figure3: The Information Technology Stakeholders at XYZ Inc.

The business teams are the key users of the information technology products and services at XYZ Inc.

The *Planning* team is involved in forecasting and other related activities and depends heavily on SAP and Business Intelligence for day to day functioning.

The *Readiness* team is an extension of the planning team that does due diligence before procurement takes over, both in regular functioning and product launches. They depend on SAP and Business Intelligence as well.

The *Procurement* team is responsible for placing the orders with the vendors and original equipment manufacturers. They are also responsible for ensuring supply of

products and services as outlined by the planning and readiness teams. They depend on SAP, Business Intelligence and Electronic Data Interchange for their smooth functioning.

The *Order Management* team is responsible for ensuring that payment of all the orders that have been placed, are validated. They also ensure that the deliveries for those orders are created timely and communicated to the manufacturers and third party logistics providers, for timely fulfillment. They depend heavily on Online Store, SAP, Electronic Data Interchange and GCRM.

The *Logistics* team is responsible for ensuring that all the orders are shipped and delivered on time, as committed to the customers. They work in close conjunction with the OEMs and the third party logistics providers. They rely on SAP, Electronic Data Interchange and Extended Technologies for their daily functioning.

The *Invoicing* team ensures the invoicing and payment realization of all the orders post delivery. They rely mostly on SAP and on Business Intelligence to some extent.

The *Finance Shared Services* department handles all of financial reconciliation, posting and closures. They depend on SAP and Business Intelligence too.

As is evident from the roles of various business units listed above, SAP forms the core information technology backbone for XYZ Inc. The business users communicate directly with the Information Technology (hereafter referred to as IT). To the business users, the IT service providing vendors are a part of the IT team and any communication between the business users and the multisourcing vendors happens through the IT team.

Following are brief insights to the responsibilities of the different IT teams:

The *Online Store* Team is responsible for smooth functioning, maintenance and upkeep of the online store website, online payment verification and information flow to and from the SAP system to the online store.

The *SAP* team is responsible for running, maintenance and creation of new processes and systems that help support every aspect of XYZ Inc.'s business operations. There is an extensive usage of almost all modules of SAP and any change or introduction of a new product or process has a very high dependency on SAP. This makes the SAP team the biggest one with XYZ Inc.'s IT teams.

The *Electronic Data Interchange* (Hereafter referred to as EDI) team is primarily responsible for sooth information flow between the different IT systems used at XYZ and the SAP system.

The *GCRM* team is responsible for all customer relationship management initiatives and uses its own CRM package.

The *Extended Technologies* team ensures smooth flow of data and information between XYZ Inc.'s systems (i.e. SAP and other legacy systems) and the legacy systems at the OEM and third party logistics provider ends.

The Business Intelligence team is primarily responsible for providing information based on the data in various IT systems to the business teams in order to help them with decision-making. This entails creating customized reports and graphics supporting the business required data sets.

An XYZ INC. employee heads each of the IT teams. It is his or her responsibility to compose and manage teams comprised of members from the relevant multisourcing vendors as outlined in Section 7.3. For vendor selection at the project staffing level, pricing is generally not a point of concern as the same is fixed annually. The selection is done on the basis of merit and competency of the applicant, by means of an interview.

The communication between the business teams, Information Technology Teams and vendor teams is pretty well defined. The business team views the IT team as one and does not differentiate between vendors and XYZ Inc.'s employees. At the same time, the IT teams act as the point of contact for business teams and help in facilitating communication with the vendors too.. Thus, in a nutshell, the managers in the IT teams of XYZ Inc. play a very pivotal role in ensuring that business expectations are met, while managing multisourced vendors at the same time.

6. Interview Analysis and Discussion

In this chapter, I will present the key points that were identified in the client and vendor interviews. The interview questionnaires can be found in Appendices I and II. The interview transcripts are detailed in Appendices III and IV. Next, I will present a discussion based on the points identified, in order to build the basis of my System Dynamics model. Thereafter, the survey inputs are used in the System Dynamics Model and the Survey Details can be found in Appendices V and VI.

6.1 Clients' Response to Questionnaire

6.1.1 Client Roles and Vendor Interaction

Out of all the client end interviewees, the project managers had a high degree of interaction with multiple vendors (on the order of 75 to 80 percent) but one interviewee who was a team lead reported his interaction with multiple vendors to be on the order of 50%. Hence, I can draw the inference that all the IT teams from the XYZ Inc.'s end had a high degree of interaction with multiple vendors.

6.1.2 The Shift from Outsourcing to Multisourcing

The following factors came out as the reasons that triggered the shift to multisourcing, as felt by the XYZ Inc.'s IST personnel:

- The original outsourcing vendor was taking things for granted.
- There were performance concerns with a single vendor.
- It is a good de-risking strategy.
- It reduces dependency on a single vendor.
- It facilitates getting multiple talents on board.
- There are financial advantages associated with multisourcing.

6.1.3 Advantages and Disadvantages of Multisourcing – The Clients' Viewpoint

The clients identified the following advantages:

- Pricing advantages due to competition amongst vendors.
- Access to a bigger pool of resources.
- Better resource availability, even at a short notice.
- Multiple solutions are offered to an issue, diverse perspectives are gained.

The disadvantages identified are as follows:

- There are issues with documentation and knowledge transfer, while transitioning out a vendor.
- More effort is required at the client's end to manage multivendor teams.
- Clients are not sure of the neutrality of some vendors. The vendors might be biased towards certain people or companies or client members, thereby making it difficult for the clients to manage the vendors.
- Inconsistent pre-training and skill sets are more prevalent.
- The contracts may not be designed to utilize each vendor's core strengths to the best extent possible.

6.1.4 Conflicts as seen by clients and their resolution

The conflicts / factors leading to conflicts identified by the clients are summarized below.

Between Vendors:

- Influencing the client's perception, trying to build a bias against other vendors.
- Inadequate knowledge sharing.
- Power struggle when it comes to roles and responsibilities.

Between vendor and IST (Information Systems Technology group):

- Improper documentation of project work during transitioning
- Lack of resources to meet the client's project demands.
- Lack of adequate pre-training and communication skills.

Between Vendor and Business Teams:

- Communication to business teams on the ability to deliver as per the scope is not proper at times.
- Business teams tend to favor certain vendors that go out of the way to do things outside the scope.

The client said that they resort to the following options to reduce these conflicts:

- Staying aware of team dynamics.
- Laying down strict documentation guidelines.
- Facilitating communication between business and IT vendors.
- Organizing and moderating face-to-face meetings between vendors, to iron out differences.
- Moderating knowledge transfer sessions.
- Focusing on language, culture and communication.

6.1.5 Categorization of Vendors by the Client

Through my interviews with the clients from XYZ Inc., I found that although there is a vendor management team (that functions separately), there were no standard organization-wide vendor categories (what do you mean by categories? Why does it matter? What happened to different categories?) outlined for the project teams. However, the managers of the project teams did categorize the vendors within their teams in following different ways:

- Based on the billing rate – Higher paid vendors do more strategic work.
- Trying to bring all vendors on a similar platform – Moving towards equality.
- Encouraging vendors to take on more strategic responsibilities.
- Categorization based on the tenure of association and mutual trust.
- Categorization based on merit and competency of the vendor.

6.1.6 The Client's Staffing Strategies

Three key staffing methods are popular amongst the interviewed client managers and leads:

- Technical requirements based hiring.
- Resume short-listing and interviews.
- Selection based on past experience with vendors.

Individual managers at XYZ Inc. also pointed out that they preferred that the vendor does its own short-listing of resumes at its end, prior to sending over the same to the client for interviews.

6.1.7 Aligning Business and Vendor Expectations

The following points summarize the effort put in by the IT team at XYZ Inc. to manage the expectations of the vendors and the business teams: (if you have time to add a little detail to each of the following items, it would be really good—this are all important strategies/tactics)

- Facilitating and communicating expectations of both parties.
- Giving feedback to vendors based on milestones and carrying out post mortems.
- Managing escalations.
- Trying to align vendors with business teams' objectives.
- Saying 'no' to business teams when a demand is not justified or feasible.
- Setting up clear key performance indicators to manage service level agreements.

6.2 Vendors' Response to Questionnaire

6.2.1 Vendors Roles and Inter-Vendor Interaction

I have interviewed eight consultants from the vendor firms, from SAP and CRM consulting teams (from different vendor organizations) and all of them have reported a high degree of interaction with vendors from other organizations. The extent of interaction ranges from 50% to 80%, both qualitatively and quantitatively.

6.2.2 Advantages and Disadvantages of Working with Other Vendors

The vendors identified the following advantages of multisourcing:

- They felt like a part of the client's organization. (this doesn't seem unique to multisourcing)
- Healthy competition fostered good results.
- They got opportunities to gel together and build personal rapport.(with other vendors?)
- The projects benefit from diverse experiences brought about by multiple vendors on board.
- There is more professionalism and things are not taken for granted.
- The client's knowledge repository increases.

The disadvantages were pointed out as follows:

- Data sharing is not an easy task. Many vendors withhold information, thereby increasing knowledge gaps.
- People tend to work in silos.
- There is a power struggle for key positions of responsibility.
- It's a loss to the vendor from an account point of view.
- It takes a good amount of time to build rapport.
- Everyone tries to save their skin and hence the tendency to pass the buck increases.
- Miscommunications and communication delays happen a lot.

6.2.3 Conflicts and Resolutions as identified by Vendors

The following key conflict factors surfaced as a result of the vendor interviews:

- Withholding information.
- Improper or low quality knowledge transfers.
- Power struggle amongst key vendor-side managers.
- Knowledge gaps between different vendors working on the same project.
- Finger pointing and playing the blame game to save one's skin.
- Prioritization of work.

The vendors stated the following resolution techniques to be the most effective for the previously mentioned conflicts:

- Client moderated knowledge transfer sessions.
- Building personal rapport with other vendors as well as with clients.
- Client level escalation of critical issues.
- Face-to-Face meetings organized by the client.

6.2.4 Ensuring Vendors' Organizational / Business Development Interests

In a multisourced setup, all the vendors try to showcase themselves to be the best and work at their best potential, in order to secure their organization's business development interests with the client. In the face of cut-throat competition, where all the vendors are at their best in front of the client, I asked them about what they would do differently to have an edge over their competitors. Here are some of the key responses to that question:

- Offer innovative and fresh solutions to the client to create a 'wow' effect.
- Maintain crystal clear communication with the project managers.
- Build rapport with business teams.
- Screen candidates before referring them to the client for openings in the client's projects.

- Keep track of their achievements on the client's projects and showcase them to the clients regularly, in order to build a brand image.

6.3 Discussion on the Interview Findings

After conducting the interviews, I infer that the clients at XYZ Inc. definitely prefer multisourcing over single sourcing, even though it means extra effort at their end to manage multiple vendors. For the clients, the benefits outweigh the disadvantages. Some key issues like withholding information, information sharing & knowledge gaps during transitioning, non-availability of resources on demand and the less than expected competency levels of the vendors, keep the clients engaged in continuous improvement activities.

On the other hand, the vendors feel that multisourcing has more benefits to the client than it has to them as vendors. Although they identified some positive factors like healthy competition and professionalism that come out of multisourcing, from a vendor standpoint the conflict factors outweigh those benefits.

For the purpose of the system dynamics model, the conflict points identified above, have been grouped together based on their similarity, in order to avoid redundancy in the model. Overall, I would hereby focus on the following key conflict points in my System Dynamics model in the next chapter:

- Knowledge Gaps (includes improper documentation and transitioning, lack of adequate pre training, and improper knowledge transfers)
- Competition, leading to vendors withholding information. This factor will be called withholding information in the model henceforth.
- Working in Silos.
- Power Struggle (includes influencing client perception)
- Finger Pointing (includes face saving tactics)

I would also focus on the following important resolution styles:

- Client moderated knowledge transfer sessions.

- Effective communication (includes face to face meetings)
- Personal Rapport.
- Client Escalation.
- Increasing Team Motivation

7. System Dynamics Modeling

I identified the key conflict and resolution styles in the previous chapter. In this chapter, I will include these parameters in a project execution system dynamics model on Vensim in order to study how these parameters affect the project outcome. The sensitivity analysis of these parameters will help gauge the variation in the project outcome, corresponding to the variation in the values of these parameters. Based on this analysis, I will draw the conclusions and recommendations in the next chapter.

7.1 Key Assumptions in the System Dynamics Model

Following are the key assumptions of the system dynamics model:

- The basis of this model is a project that I have been a part of, during my previous work experience. Values of variables like Resources Required, Project Tasks etc. have been assumed based on experience. Any set of assumed values would serve the purpose of my analysis, as it is not the absolute values, but the relative outcomes (when the conflict parameters vary) that would be of key concern.
- The conflict factors and resolution styles are assumed to be dimensionless quantities that affect the productivity and the error generation in a project. The details of these will be discussed in the subsequent section.
- The conflict factors have been measured in terms of their importance/severity (on a scale of 1 to 5, one being the least severe) and their probability (in percentage terms) of occurrence. Only 9 out of the 13 interviewees were able to provide these data. Thus, the average of these data from the 9 respondents have been included in the system dynamics model inputs.

- The conflict and resolution factors are assumed to be arising from people and their interactions. Thus these variables are exogenous to the project in terms of their origin. However, they affect the project outcomes, thereby making them a part of the model. This approach has been adopted due to the limited scope and limited availability of data.

7.2 The System Dynamics Model

The following figure shows the system dynamic model developed for this thesis in a single frame:

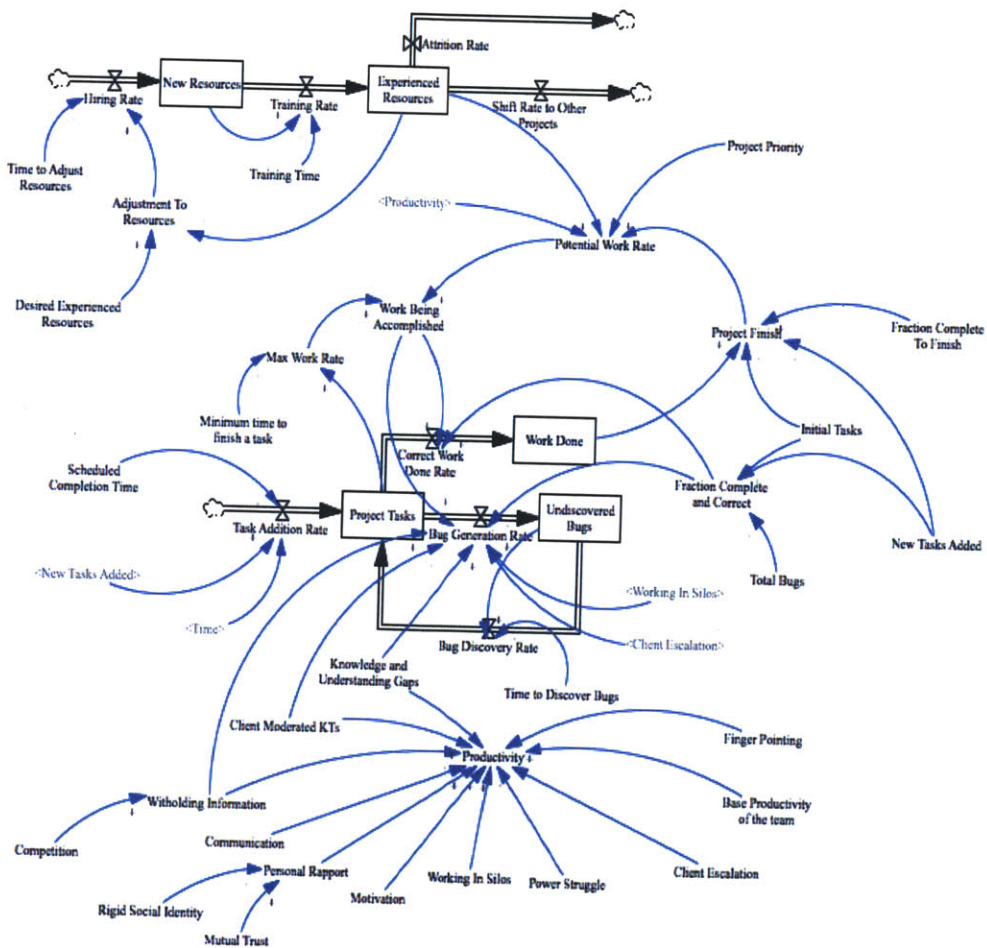


Figure4: The System Dynamics Model showing the impact of conflicts and resolution styles on project outcomes.

The subsequent figures show the parts of the model for more clarity:

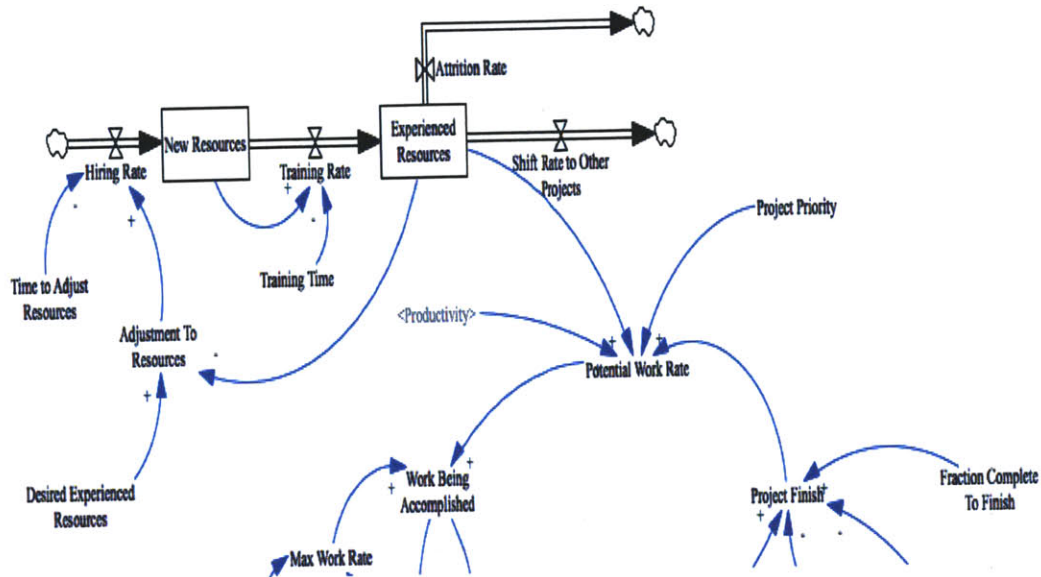


Figure 5: The Project Staffing Section

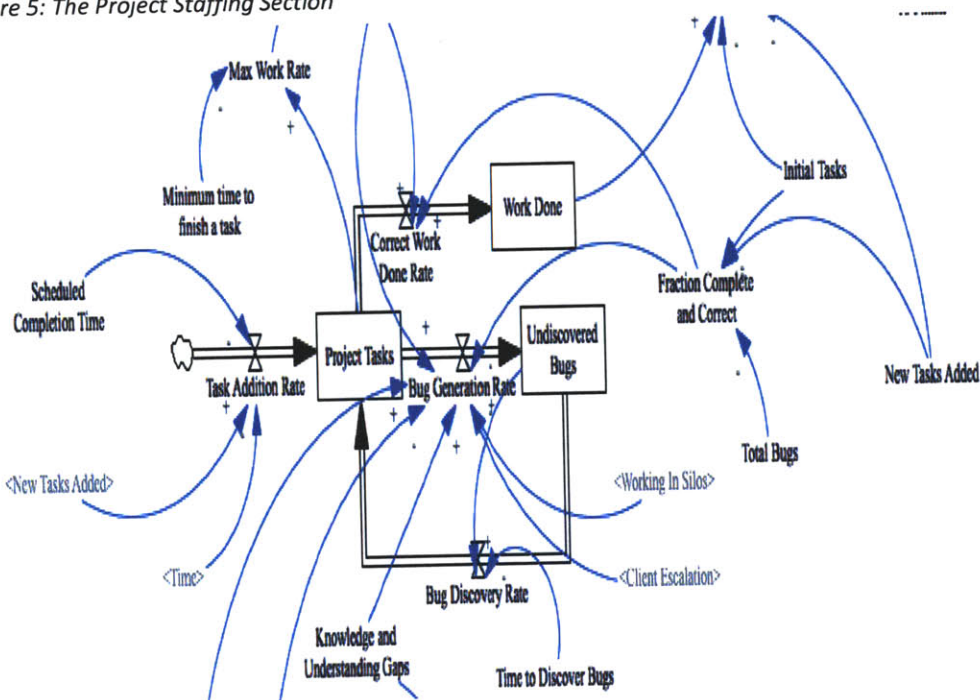


Figure 6: The Project Execution Section

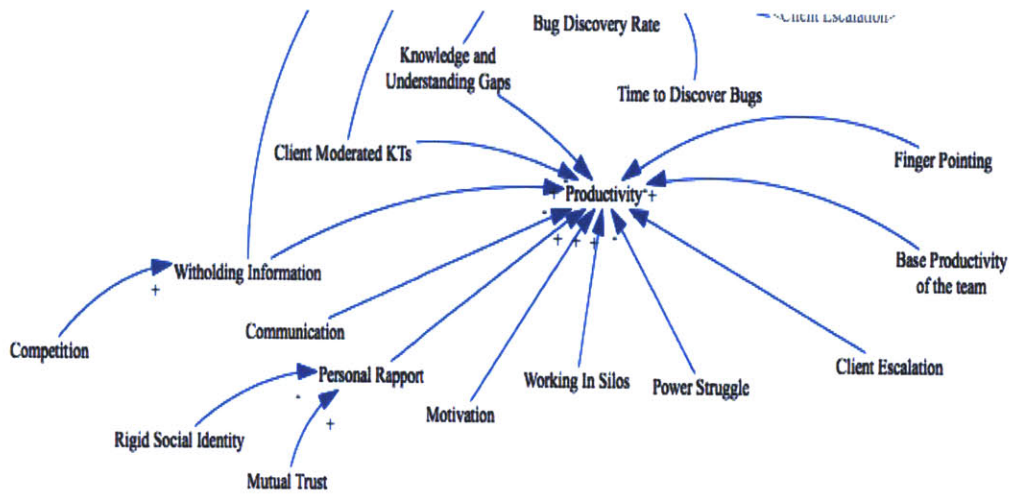


Figure 7: The impact of conflicts section

7.3 The Variables Involved

A detailed account of all the variables involved, along with their rationale is as follows:

Time To Adjust Resources – This is the time taken by the hiring team to arrange for the right resources. By means of experience, I have taken this value as 1 week.

Desired Experienced Resources - This is the total number of resources that are expected to work on a project. In the case of my project model, I have taken this as 35 persons based on the project resources I have had in my team.

Adjustment to Resources – Whenever there is attrition, the team strength falls below the desired number. This variable reflects the gap between the desired strength and the existing strength of the project. Whenever this number becomes greater than zero, the hiring team starts looking out to recruit resources.

Hiring Rate – It is the speed at which the hiring team can fulfill the resource requirement generated in the project.

New Resources – This is the number of persons that have been freshly recruited to work on the project.

Training Time – This is the time required to bring a fresh resource up to speed for working on the project. Based on my experience, I have taken this value as 4 weeks (3 weeks of training plus 1 week of handholding/transitioning on the project).

Training Rate – This is the speed with which resources are trained to start working on the project.

Experienced Resources – This is the number of people currently working on the project, less the people who have quit or shifted to other projects.

Attrition Rate – This is the rate at which people quit their jobs. In the case of my project, 4 resources left in a span of 23 weeks and hence the attrition rate of 4/23 person/week.

Shift Rate to Other Projects – This is the rate at which the resources of the current project move over to other projects within the organization. In the current case, 2 resources moved out to other projects over a span of 23 weeks.

Project Priority – This is the priority assigned to the project by the management and the drivers of the project. In the current model's case, I have taken it as 85% based on experience.

Initial Tasks – This is the total number of defined tasks that the project had at the beginning. In the case of my project, there were 120 tasks that were defined, and that is reflected in the model.

New Tasks Added – This is the total number of additional tasks that get added on to the project. This does not include the additional tasks due to bugs or errors, but

factors like scope creep etc. This is estimated at 10% of the initial tasks based on experience, and hence 12 tasks were included.

Total Bugs – These are the total number of errors that are reported and require rework. In the case of the considered project, this was 24 tasks (20% of the initial tasks).

Fraction Complete and Correct – As the name suggests, this is the ratio of the project tasks, which are not just complete, but are error free and correct too. This takes into account the bug generation and discovery as well.

Scheduled Completion Time – This is the first estimated time for project completion as calculated by the project management team. In the case of the project under consideration, this was 23 weeks. The system dynamics model has been simulated for a time frame of 100 weeks in order to keep the comparisons simple.

Time – This is an internal variable in Vensim, used to calculate the task addition rate.

Task Addition Rate – This is the rate at which the new tasks that are generated join the project's to do list.

Project Tasks – This is the total number of tasks the project has at any given point of time. It starts off with 120 tasks (initial tasks) but increases thereafter due to bug generation and addition of new tasks.

Correct Work Done Rate – This is the speed with which the work is done accurately. The fraction correct and complete helps in determining this.

Work Done – This variable indicated the amount of tasks done correctly.

Project Finish – This variable indicates the amount of project that has been completed against the time elapsed.

Minimum Time to Finish a Task – This is the shortest amount of time in which a task can be completed. In my project, it was 1 week.

Maximum Work Rate – This is the fastest rate at which tasks can be completed in the project.

Work Being Accomplished – This is the actual rate at which the work is completed in the project.

Potential Work Rate – This is the actual speed with which tasks could be completed, based on the number of resources in the team, their productivity, priority assigned to the project and the amount of the project that has been completed.

Bug Generation Rate – This is the speed with which bugs are generated in the project.

Undiscovered Bugs – These are the error tasks that have been generated but have not been discovered yet.

Time to Discover Bugs – This is the time taken to discover an error. This was typically 1 week in my project.

Bug Discovery Rate – This is the speed with which bugs are discovered and queued up in the project tasks list.

Competition – This is the factor that inspires vendors to withhold strategic information in order to gain an edge and have a good rapport with the client. This factor is maintained at 100% in the model (i.e. its value is 1)

Withholding Information – This factor is a result of competition between vendors. Its value is the product of competition and its occurrence probability (which is 0.64 as

identified in my surveys). This affects the productivity as well as the bug generation rate.

Client Moderated KTs – This is done by the clients in order to keep the understanding levels of all the team members at the same level. This impacts productivity positively and brings down the error rate too. Its occurrence rate is 60.97% as identified by in my survey responses.

Knowledge and Understanding Gaps – This factor arises in the case of transition or when the teams are dispersed geographically. This hampers productivity and increases the error rate. As identified in my surveys, the occurrence of this factor is 71.96%.

Communication - This variable plays a very crucial role in maintaining the understanding levels of all parties involved. This impacts productivity positively. As identified in the surveys, its average value is 78.79%.

Mutual Trust and Rigid Social Identity - These two factors impact how the personal rapport is developed amongst vendors which goes a long way to foster productivity.

Personal Rapport – This is a crucial factor which ensures smooth information flow and project team members helping out each other in times of need, even if they represent different vendors. The occurrence rate of this factor is 67.34% as identified in the surveys.

Motivation – This is another factor that impacts productivity positively. Maintaining a high value of this factor is every client's area of interest. In my case, the occurrence of this factor was identified by the surveys as 62.895%

Working in Silos – This factor shows up when there are too many senior members or subject matter experts in the team or when the team members become very

secretive. The occurrence rate of this factor was identified in the survey responses as 58.59%.

Power Struggle – This happens when some senior vendor team members are a part of the project and they try to tilt the client’s preferences to their side. This hampers productivity in a big way. The occurrence rate of this variable was identified in the surveys as 55%.

Client Escalation – This is what vendors resort to when they are unable to sort out differences on their own. As a result the client intervenes and builds processes around the misunderstandings, in order to avoid them in the future. This, in turn, tends to improve productivity. The occurrence rate of this factor was identified as 49.37% in the surveys.

Base Productivity – This is the basic productivity level that the team is supposed to perform at, given everything else is fine. In theory, this is the 100% productivity level. Since it is expressed in tasks per person per week, it is calculated by dividing the total initial tasks (120) by the initial resources (35) and further dividing the result by the initial planned time of 23 weeks and hence reported as 0.149 tasks/person/week.

Finger Pointing – This is another factor, which occurs when vendors start passing the blame in order to portray a clean image. The occurrence rate for this factor is 63.67% as identified in the surveys.

Productivity – This is a key factor that impacts the project performance. It is computed as the product of the based productivity and the net result of the sum of conflict and resolution factors. These factors are multiplied by their average severity rates as identified by the interviewees. Hence, the net formula for productivity is calculated as : Base Productivity of the team*(3.33*Client Escalation + 4.22*Communication - 3.56*Finger Pointing – 4.22*Knowledge and Understanding

Gaps + 3.56**Motivation* + 3.89**Personal Rapport* – 3.11**Power Struggle* –
 4.11**Withholding Information* - 3.22**Working In Silos* + 3.89**Client Moderated KT*s)

The values, dimensions and equations of these variables are summarized in the table below:

S.No.	Variable	Unit	Value	Formula
1	Time to Adjust Resources	Week	1	
2	Desired Experienced Resources	Person	35	
3	Adjustment To Resources	Person		MAX(Desired Experienced Resources- Experienced Resources , 0)
4	Hiring Rate	Person/Week		Adjustment To Resources/Time to Adjust Resources
5	New Resources	Person		Integ (Hiring Rate-Training Rate)+0
6	Training Rate	Person/Week		New Resources/Training Time
7	Training Time	Week	4	
8	Experienced Resources	Person		Integ (Training Rate- Attrition Rate-Shift Rate to Other Projects)+35
9	Attrition Rate	Person/Week		4/23 (4 ppl left in 23 weeks, attrition rate = 11.4%)
10	Shift Rate to Other Projects	Person/Week		0.175 (5% of 35 ppl work on other projects)
11	Project Priority	Dimensionless	0.85	
12	Potential Work Rate	Task/Week		Experienced Resources*Productivity*Project Finish*Project Priority
13	Project Finish	Dimensionless		IF THEN ELSE(Work Done>Fraction Complete To Finish*(Initial Tasks+New Tasks Added) , 0 , 1)
14	Fraction Complete To Finish	Dimensionless	0.99	

15	Initial Tasks	Task	120	
16	New Tasks Added	Task	15	
17	Total Bugs	Task	24	
18	Fraction Complete and Correct	Dimensionless		$1 - (\text{Total Bugs} / (\text{Initial Tasks} + \text{New Tasks Added}))$
19	Work Being Accomplished	Task/Week		$\text{MIN}(\text{Potential Work Rate}, \text{Max Work Rate})$
20	Minimum time to finish a task	Week	1	
21	Max Work Rate	Task/Week		Project Tasks/Minimum time to finish a task
22	Scheduled Completion Time	Week	23	
23	Time	Week		Internally defined parameter for if then else condition
24	Task Addition Rate	Task/Week		$\text{IF THEN ELSE}(\text{Time} < \text{Scheduled Completion Time}, \text{New Tasks Added} / \text{Scheduled Completion Time}, 0)$
25	Project Tasks	Task		$\text{Integ}(\text{Bug Discovery Rate} + \text{Task Addition Rate} - \text{Bug Generation Rate} - \text{Correct Work Done Rate}) + \text{Initial Tasks}$
26	Correct Work Done Rate	Task/Week		$\text{Work Being Accomplished} * \text{Fraction Complete and Correct}$
27	Work Done	Task		$\text{Integ}(\text{Correct Work Done Rate}) + 0$
28	Bug Generation Rate	Task/Week		$(1 - \text{Fraction Complete and Correct}) * \text{Work Being Accomplished} * (4.22 * \text{Knowledge and Understanding Gaps} + 4.11 * \text{Withholding Information} - 3.89 * \text{Client Moderated KTs} + 3.22 * \text{Working In Silos} - 3.33 * \text{Client Escalation})$
29	Undiscovered Bugs	Task		$\text{Integ}(\text{Bug Generation Rate} - \text{Bug Discovery Rate})$

				Rate)+0
30	Bug Discovery Rate	Task/Week		Undiscovered Bugs/Time to Discover Bugs
31	Client Moderated KT's	Dimensionless	.6097	
32	Knowledge and Understanding Gaps	Dimensionless	.7196	
33	Competition	Dimensionless	1	
34	Withholding Information	Dimensionless		0.6406*Competition
35	Communication	Dimensionless	.7879	
36	Rigid Social Identity	Dimensionless	1	
37	Mutual Trust	Dimensionless	.6734	
38	Personal Rapport	Dimensionless		Mutual Trust*Rigid Social Identity
39	Motivation	Dimensionless	.6289	
40	Working In Silos	Dimensionless	.5859	
41	Power Struggle	Dimensionless	0.55	
42	Client Escalation	Dimensionless	.4937	
43	Base Productivity of the team	Task/Person/Week	0.149	
44	Finger Pointing	Dimensionless	.6367	
45	Productivity	Task/Person/Week		Base Productivity of the team*(3.33*Client Escalation+4.22*Communication-3.56*Finger Pointing-4.22*Knowledge and Understanding Gaps+3.56*Motivation+3.89*Personal Rapport-3.11*Power Struggle-4.11*Withholding Information-3.22*Working In Silos+3.89*Client Moderated KT's)

Table 2: The System Dynamics Variables

7.4 The Ideal World Scenario

In this section, I will set all the conflict and their resolution factors to 0 in order to view the outcome (described in the next few lines) as generated by the system dynamics model. This will serve as a good baseline to understand the impact of the conflict and the resolution parameters. Throughout this simulation (and all the simulations henceforth), we will look at two key output variables – the actual time taken to complete the project and the actual number of tasks that are needed to be done. I have considered these two parameters (out of all the variables mentioned in section 7.3) as they help the reader visualize the impact more realistically.

The following graphs show the output in an ideal world situation:

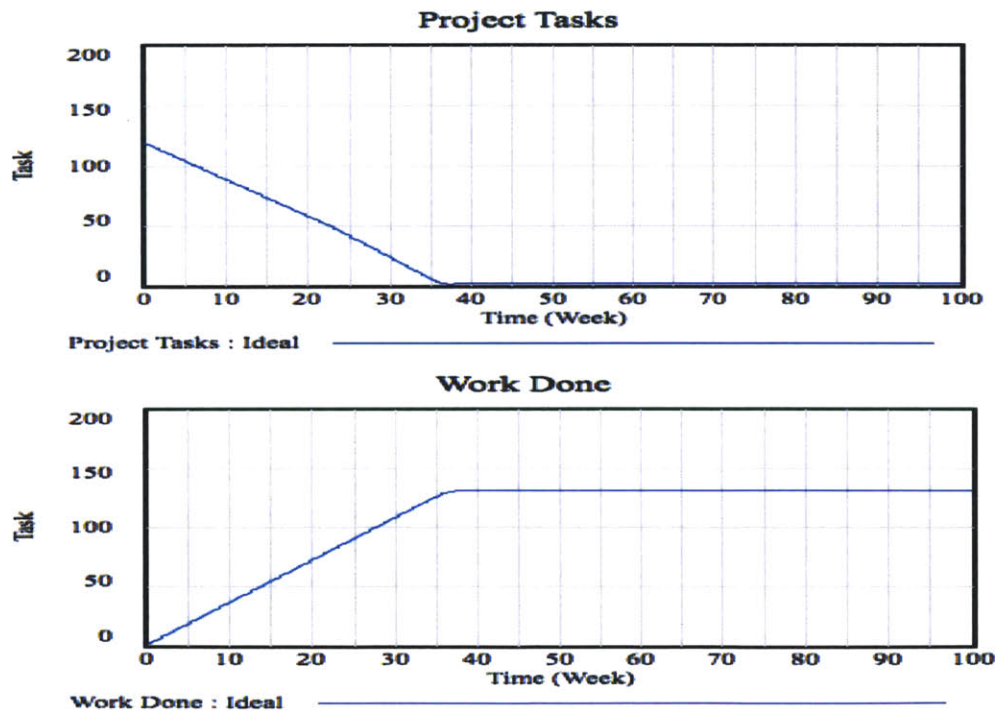


Figure 8: Project Outputs in the ideal situation

We see that the project would have completed in 36 weeks (instead of the planned 23 weeks) with a total of 132 tasks (instead of 120). This shift in plans is primarily attributable to the attrition/staffing in the project and the new tasks that are added. My 'system boundary' of the ideal scenario includes these two factors:

7.5 The Real World Scenario

In this section I will include all the previously mentioned conflict and resolution factors in order to give the reader a view of how these factors play together in defining the final outcome of the project parameters (i.e. the actual time taken to complete the project and the actual number of tasks that are needed to be done). This, when compared to the previous section, will help the reader appreciate the impact of the conflicts and resolution attempts better. The following graphs show the outputs in a real world situation:

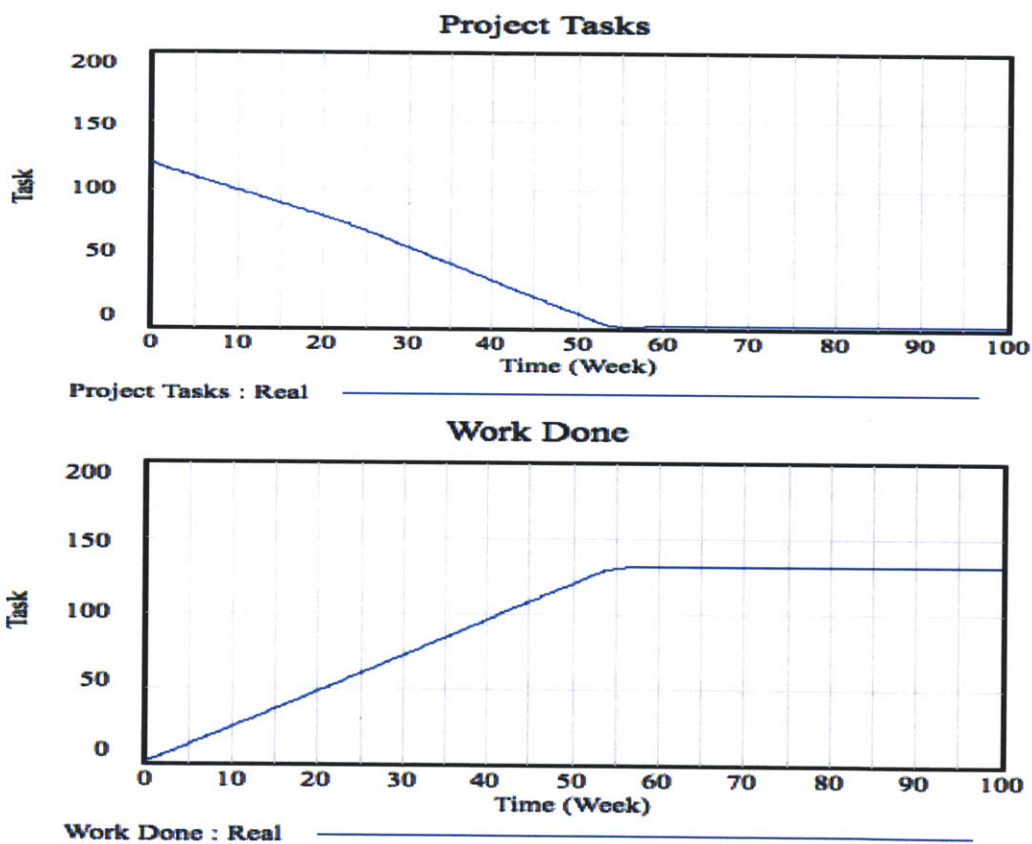


Figure 9: Project Outputs in the real situation

We can clearly see that the project takes 55 weeks to complete this time around (a 52.7% deviation from the ideal situation). The number of tasks remains constant at 132. Thus, clearly a lot of effort is wasted in achieving the same objectives due to these conflicts. In addition to affecting the quality of work, this affects the project financially as well because of the excess hours billed and the additional effort that

goes towards the resolution (which is not measured in the tasks). The comparison of the ideal world and real world in a single frame is presented below:

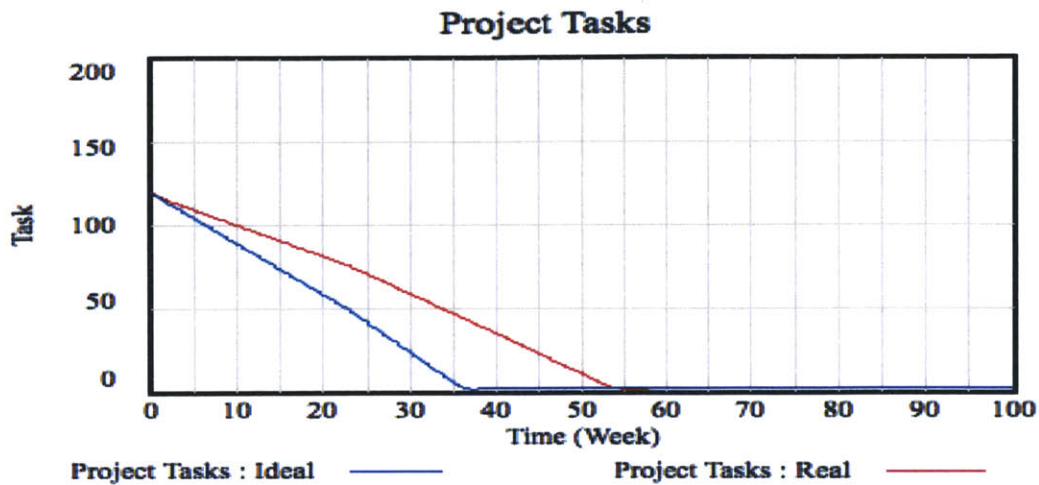


Figure 10: The ideal vs. real world

7.6 Sensitivity Analysis

In this section, I will increase and decrease each of the conflict parameters and the resolution parameters by 25% of their occurrence value to analyze the impact on the project execution timelines and the project tasks.

7.6.1 Phase I – Sensitivity Analysis of Conflict Factors

7.7.1.1 Knowledge and Understanding Gaps

The following graph shows the impact of increasing and decreasing the occurrence probability of knowledge and understanding gaps by 25% (from 0.7196 to 0.8995 and from 0.7196 to 0.5397):

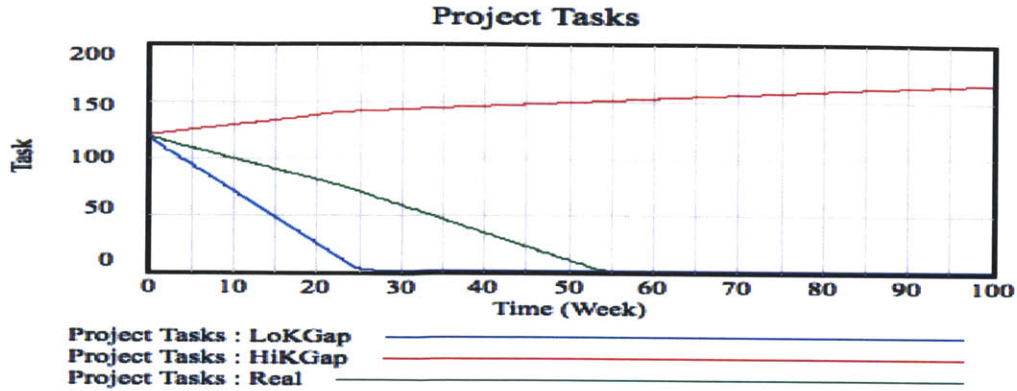


Figure 11: The Impact of knowledge gaps on project tasks

Clearly, on increasing the knowledge gaps by 25%, more rework is generated, causing the task backlog to increase continuously (see Appendix VII) and the project is nowhere near completion, even in a 100 weeks, signifying absolutely no progress. On the other hand, reducing the knowledge gaps by 25% reduces the execution time by 54.55% (to 25 weeks), keeping the number of tasks constant at 132.

7.7.1.2 Withholding Information

The following graph shows the impact of increasing and decreasing the occurrence probability of withholding information gaps by 25% (from 0.6406 to 0.800075 and from 0.6406 to 0.5397):

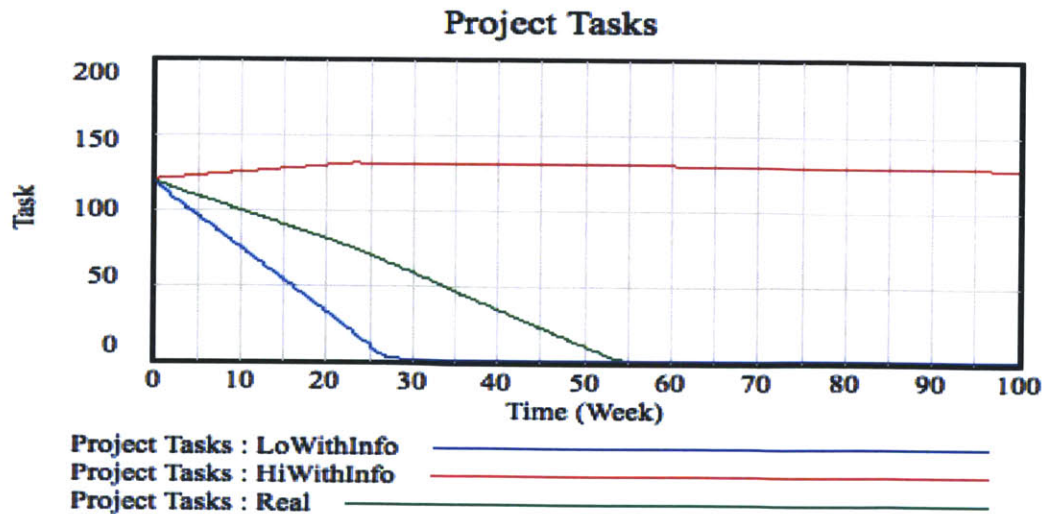


Figure 12: The Impact of withholding information on project tasks

We see that if withholding information increases by 25%, the project does not get completed in even 100 weeks and absolutely no tasks are accomplished (see Appendix VII). On the other hand, reducing the occurrence of withholding information by 25% brings down the project execution time by 49.09% (to 28 weeks) with 132 tasks.

7.7.1.3 Working in Silos

The following graph shows the impact of increasing and decreasing the occurrence probability of working in silos by 25% (from 0.5859 to 0.7323 and from 0.5859 to 0.4394):

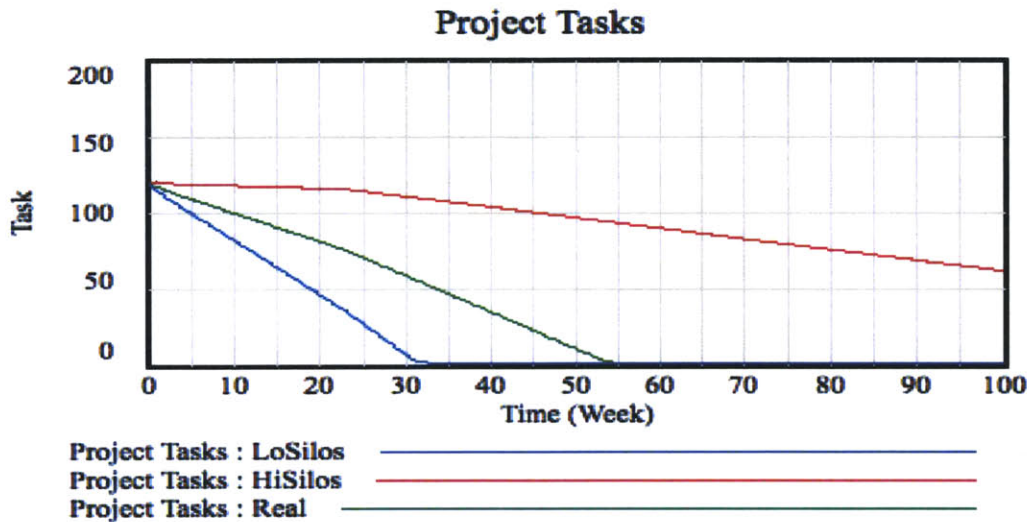


Figure 13: The Impact of working in silos on project tasks

It is observed that if working in silos increases by 25%, the project does not get completed in even 100 weeks and only 70 tasks are done in those 100 weeks (see Appendix VII). On the other hand, reducing the occurrence of working in silos by 25% brings down the project execution time by 40.91% (to 32.5 weeks) with 132 tasks.

7.7.1.4 Power Struggle

The following graph shows the impact of increasing and decreasing the occurrence probability of power struggle by 25% (from 0.55 to 0.6875 and from 0.55 to 0.4125):

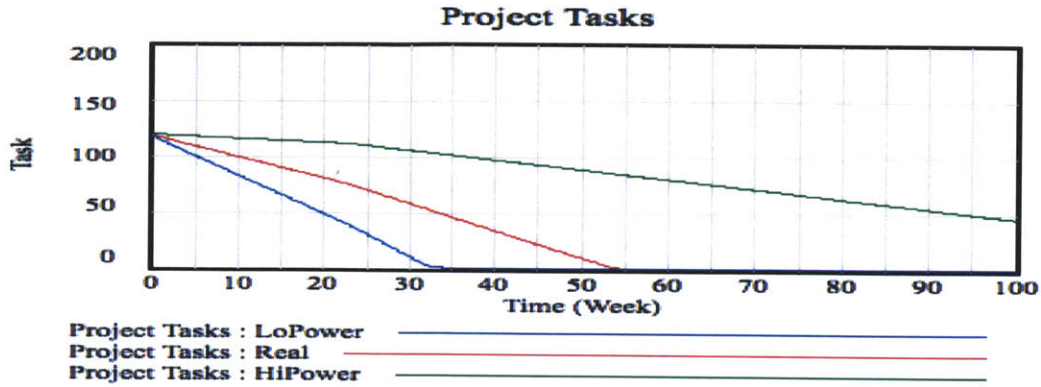


Figure 14: The Impact of power struggle on project tasks

As seen in the figure above, if power struggle increases by 25%, the project does not get completed in even 100 weeks and only 80 tasks are done in those 100 weeks (see Appendix VII). On the other hand, reducing the occurrence of power struggle by 25% brings down the project execution time by 36.36% (to 35 weeks) with 132 tasks.

7.7.1.5 Finger Pointing

The following graph shows the impact of increasing and decreasing the occurrence probability of power struggle by 25% (from 0.6367 to 0.7959 and from 0.6367 to 0.4775):

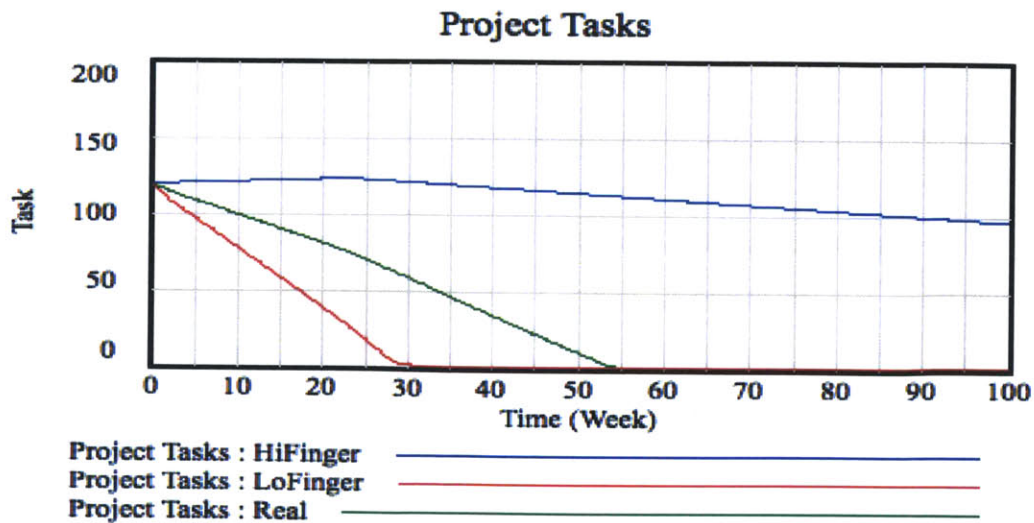


Figure 15: The Impact of finger pointing on project tasks

It is observed that if finger pointing increases by 25%, the project does not get completed in even 100 weeks and only 35 tasks are done in those 100 weeks (see Appendix VII). On the other hand, reducing the occurrence of finger pointing by 25% brings down the project execution time by 45.45% (to 30 weeks) with 132 tasks.

7.7.2 Phase II – Sensitivity Analysis of Resolution Factors

7.7.2.1 Client Moderated Knowledge Transfers

The following graph shows the impact of increasing and decreasing the occurrence probability of client moderated knowledge transfers by 25% (from 0.6097 to 0.7621 and from 0.6097 to 0.4572):

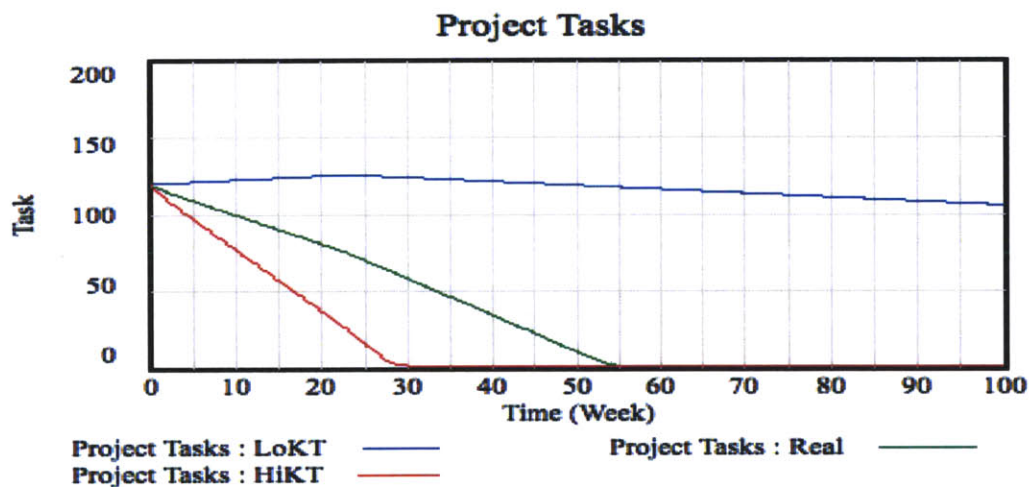


Figure 16: The Impact of client moderated KTs on project tasks

We see that if client moderated KTs increase by 25%, the project execution time goes down by 45.45% (to 30 weeks) with 132 tasks. On the other hand, reducing the occurrence of client moderated knowledge transfers by 25% leads to the project not being completed in even 100 weeks with only 30 tasks complete in that time frame (see Appendix VIII).

7.7.2.2 Communication

The following graph shows the impact of increasing and decreasing the occurrence probability of effective communication by 25% (from 0.7879 to 0.9848 and from 0.7879 to 0.5909):

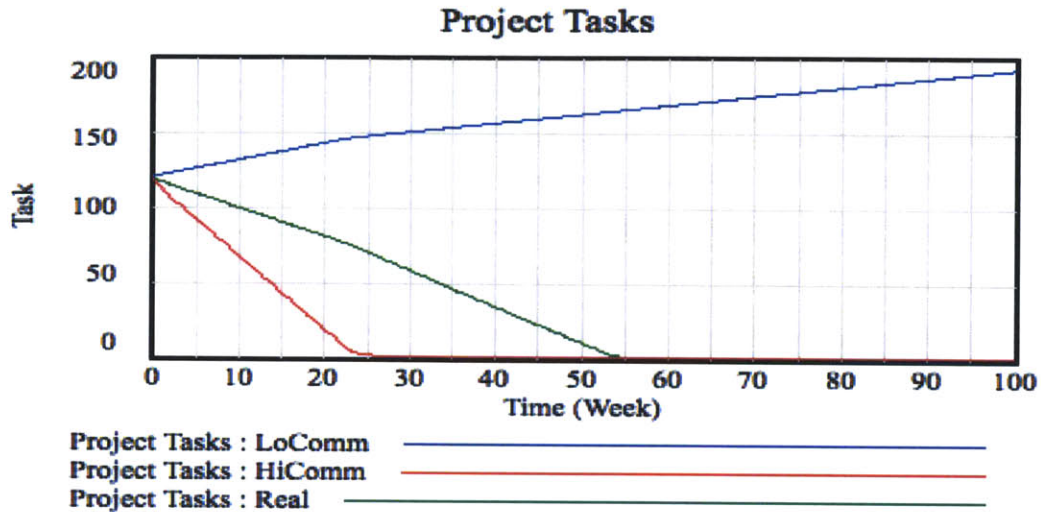


Figure 17: The Impact of communication on project tasks

It is seen that if communications increases by 25%, the project execution time goes down by 54.55% (to 25 weeks) with 132 tasks. On the other hand, reducing the occurrence of communication by 25% leads to the project not being completed in even 100 weeks with more rework being generated than the actual work done. As a result, the list of tasks to be completed keeps on increasing (see Appendix VIII).

7.7.2.3 Personal Rapport

The following graph shows the impact of increasing and decreasing the occurrence probability of personal rapport within the team by 25% (from 0.6734 to 0.8417 and from 0.6734 to 0.505):

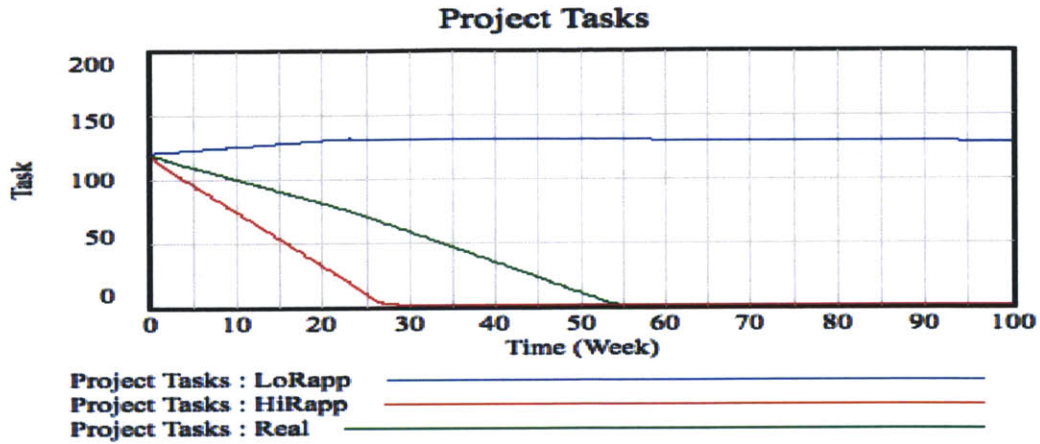


Figure 18: The Impact of personal rapport on project tasks

We see that if personal rapport increases by 25%, the project execution time goes down by 50.91% (to 27 weeks) with 132 tasks. On the other hand, reducing the occurrence of personal rapport by 25% leads to the project not being completed in even 100 weeks with only 10 tasks being completed in that duration (see Appendix VIII).

7.7.2.4 Motivation

The following graph shows the impact of increasing and decreasing the motivation of the team by 25% (from 0.6289 to 0.7861 and from 0.6289 to 0.4717):

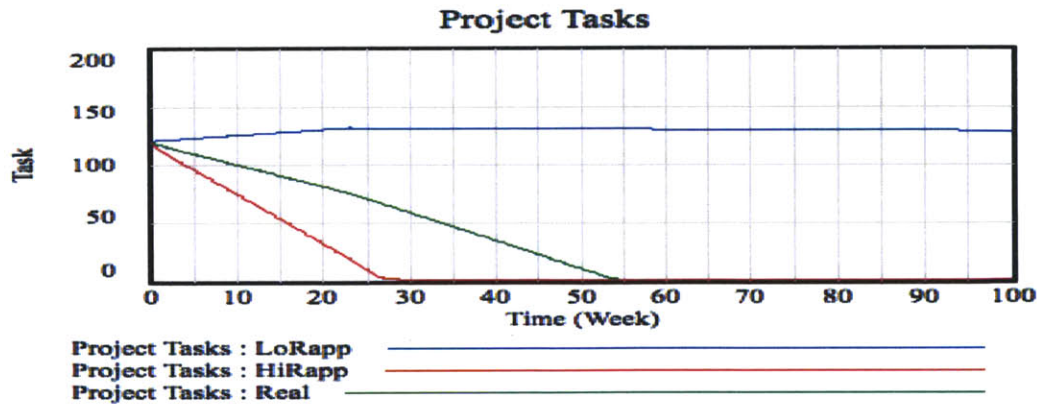


Figure 19: The Impact of motivation on project tasks

It is observed here that if motivation increases by 25%, the project execution time goes down by 45.45% (to 30 weeks) with 132 tasks. On the other hand, reducing the motivation by 25% leads to the project not being completed in even 100 weeks with only 40 tasks being completed in that duration (see Appendix VIII).

7.7.2.5 Client Escalation

The following graph shows the impact of increasing and decreasing the occurrence probability of personal rapport within the team by 25% (from 0.4937 to 0.6171 and from 0.4937 to 0.3703):

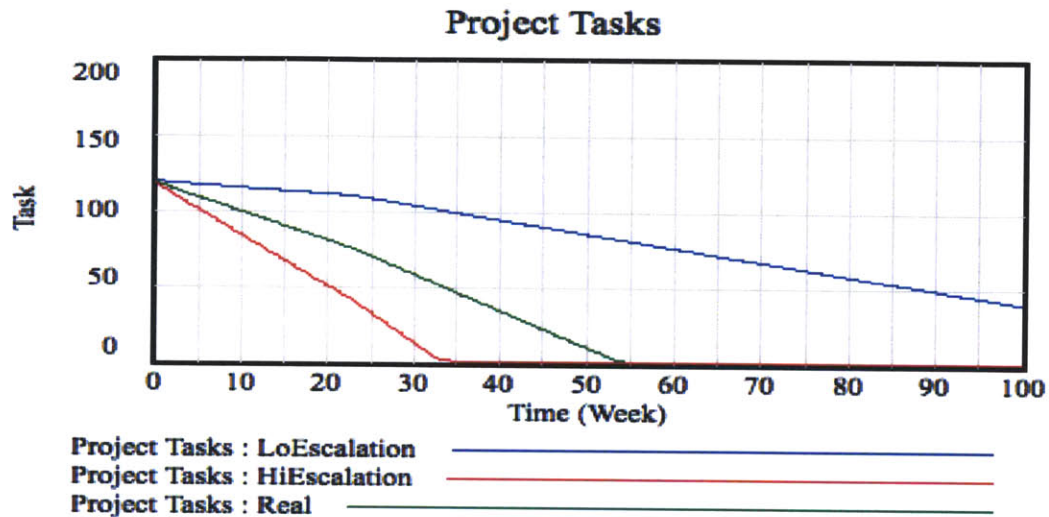


Figure 20: The Impact of client escalation on project tasks

We see here that if escalation increases by 25%, the project execution time goes down by 36.36% (to 35 weeks) with all 132 tasks. On the other hand, reducing the escalation by 25% leads to the project not being completed in even 100 weeks with 90 tasks being completed in that duration (see Appendix VIII).

In the following table, I have summarized my findings from the sensitivity analysis. This will help me draw relevant conclusions, which I will present in the next chapter.

S.No	Conflict/Resolution Scenario	Project Execution Time(Weeks)	% Increase/Decrease	Tasks Completed	% Increase/Decrease
1	Ideal World (Base value for Real World)	36	-	132	-
2	Real World (Base Value for All Other Cases)	55	34.55%	132	0.00%

3	25% increase in Knowledge Gaps	>100	>81.81%	-35	-126.52%
4	25% decrease in Knowledge Gaps	25	-54.55%	132	0.00%
5	25% increase in Withholding Information	>100	>81.81%	0	-100.00%
6	25% decrease in Withholding Information	28	-49.09%	132	0.00%
7	25% increase in Working in Silos	>100	>81.81%	70	-46.97%
8	25% decrease in Working in Silos	32.5	-40.91%	132	0.00%
9	25% increase in Power Struggle	>100	>81.81%	80	-39.39%
10	25% decrease in Power Struggle	35	-36.36%	132	0.00%
11	25% increase in Finger Pointing	>100	>81.81%	35	-73.48%
12	25% decrease in Finger Pointing	30	-45.45%	132	0.00%
13	25% increase in Knowledge Transfers	30	-45.45%	132	0.00%
14	25% decrease in Knowledge Transfers	>100	>81.81%	30	-77.27%
15	25% increase in Effective Communication	25	-54.55%	132	0.00%
16	25% decrease in Effective	>100	>81.81%	-60	-145.45%

	Communica tion				
17	25% increase in Personal Rapport	27	-50.91%	132	0.00%
18	25% decrease in Personal Rapport	>100	>81.81%	10	-92.42%
19	25% increase in Motivation	30	-45.45%	132	0.00%
20	25% decrease in Motivation	>100	>81.81%	40	-69.70%
21	25% increase in Client Escalations	35	-36.36%	132	0.00%
22	25% decrease in Client Escalations	>100	>81.81%	90	-31.82%

Table 3: Summary of Sensitivity Analysis Findings

8. Conclusions and Recommendations

8.1 Conclusions

The key objective of this thesis was to identify and prioritize various points of conflicts in the modern day information technology departments of companies engaged in multisourcing, in order to aid managers with decision making. By means of studying the case of XYZ Inc. through the interviews organized with the client side managers and information technology vendors, the key multivendor conflict factors that were identified were - withholding information, finger pointing amongst vendors, knowledge and understanding gaps, power struggle and tendency of the vendors to work in silos in order to prove themselves valuable.

It may be noted here that the conflicts identified in the case analysis of XYZ Inc. are common to those identified in previous researches on conflicts in multisourcing scenarios in general (as mentioned in the literature research in chapters 2 and 3). Thus, we can infer that the conflicts mentioned above are the most frequently encountered prominent conflicts and have the most top of the mind recall.

The differentiating factor of this thesis from previous research on conflicts in multisourcing is that I have used system dynamics modeling to provide rational basis of prioritization to managers in order to make most optimal use of their limited resources for conflict management. The sensitivity analysis presented in Chapter 7 can assist a client side manager to focus on the most critical conflict factors and the most effective resolution factors. Based on this, the client manager can carve out a strategy and judge the impact/effectiveness of this strategy on the project outcome. This way the manager can compare different strategies in order to have the best one in place.

Looking at the summary table of the previous chapter, I rank the conflict factors as follows, in descending order of impact they have on the project:

- a) Knowledge and Understanding Gaps
- b) Withholding Information
- c) Finger Pointing
- d) Working in Silos
- e) Power Struggle

The logic behind the above mentioned order is that when each of these factors is increased by the same amount, the work completed decreases in the higher ranked cases. At the same time, when each of these factors is decreased by the same amount, the time to complete the project is the least in higher ranked cases.

Now, looking at the resolution methods, I rank the resolution factors as follows, in decreasing order of impact they have on the project:

- a) Effective Communication
- b) Personal Rapport
- c) Client Moderated Knowledge Transfer
- d) Motivation
- e) Client Escalation.

The ranking of the above mentioned factor is done using the same logic, as was employed for ranking the conflict factors.

Before making recommendations based on these conclusions, I will present a discussion based on the above ranking. If a manager at XYZ Inc. observes that his/her team is suffering from knowledge and understanding gap, then the client needs to moderate the knowledge transfer session. At the same time, he also needs to ensure that there is an increased level of effective communication in the team. (He may choose to increase the other resolution choices as well, but for the sake of simplicity in the discussion, I will leave that out). Now, let us assume that the knowledge gap increases by 10% (it increases in value from 0.7196 to 0.7916). As a result, the client

reacts by increasing the knowledge transfer moderation by 15% (from 0.6097 to .7011) and by increasing the effective communication by 5% (from .7879 to .8273). The outcome of this reaction is shown in the graph below:

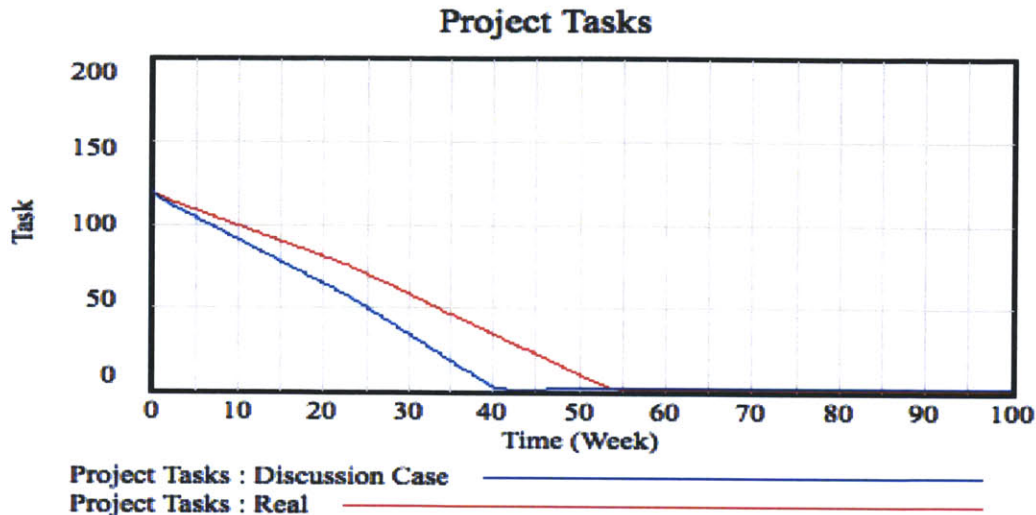


Figure 21: Outcome of the Discussion Case

Thus, we observe that all 132 tasks of the project are completed on 40 weeks instead of 55 weeks, which is a 27% saving in efforts. Hence this model can be used, not just to analyze the criticality of different conflict and resolution styles, but also to create a strategy to react to a conflict situation. This is done looking at the entire project and its elements (including conflicts and their resolutions) as a system. The system dynamics model captures the interaction of those elements comprehensively.

8.2 Recommendations

This system dynamics model can be used as a tool by managers to gauge the impact of a certain conflict or a resolution scenario. It can also help them to formulate a strategy to conquer a conflict situation that they face. This model can be used as a reference for any organization (in addition to XYZ Inc.) involved in similar mutisourcing scenarios.

For the managers at XYZ Inc., I would like to make the following recommendations:

- The knowledge and understanding gaps between the different vendors is the biggest hindrance to the smooth execution of projects.
- Withholding of information by the vendors and improper knowledge sharing fuels this further.
- Finally, if the performance is affected because of the above factors, a blame game and finger pointing would start.
- To manage these situations, the clients have to give foremost attention to fostering effective communication within the team.
- This needs to be followed up with promoting personal rapport within the team (so that the vendors share information more freely, thereby reducing the knowledge and understanding gaps to a great extent) and monitoring the transfer of knowledge/transitioning closely.

For multisourcing managers in general, I would like to make the following recommendations:

The model presented in this thesis can be used as a starting point for analysis of the impacts of various conflict factors. They can start with checking the existence of the conflict factors in their teams. Thereafter they can conduct an analysis of the impact of these factors on their projects using similar simulations as shown in Chapter 7.

Based on those analyses, they can prioritize the conflict factors they need to resolve and achieve better outcomes for their projects.

9. Limitations and Scope for Further Research

This chapter looks at the limitations of my research and lists the areas where there is scope for further research.

9.1 Limitations

- The system dynamics model proposed in Chapter 7 is based on a case of a single organization (XYZ Inc.). This was done based on the resource and schedule availability of the respondents to carry out the research. This model is intended to serve as a starting point for further research. More companies similar to XYZ Inc. (that utilize multisourcing) can be researched in order to create a larger respondents' base and have a more in-depth study.
- Since XYZ Inc. has strict confidentiality and non-disclosure policies, some of the factors may not have come up in the interviews. Those factors, in turn, may not have shown up in the system dynamics model as well.
- The current system dynamics model is based on the key factors mentioned in Section 6.3 of this thesis. More factors based on subsequent research can be included in order to get a wider view of the conflict dynamics.
- Only 8 interviewees responded to the survey to provide a numerical value to the significance and occurrence rates of the conflict and resolution factors. More responses may reduce noise in this data and provide a wider perspective to the conflict inputs in the system dynamics model.
- The additional effort of the management that is expended in order to resolve the conflicts has not been translated into tasks. This is because of the qualitative nature of these efforts, which make it difficult to quantify them.
- The values of occurrence of the conflict and resolution factors are taken as constant throughout the duration of the project in the model. Generally these values would vary over the duration of the project. In order to capture those variations, a longitudinal study is required.

9.2 Scope for Further Research

- The system dynamics model can be made more comprehensive and 'generalizable' if more companies are studied, with a greater number of respondents representing each company.
- A longitudinal study (from start – finish of a project) will offer more insights into the different types of conflicts.
- Based on the longitudinal study, the conflicts can then be categorized as long term and short-term conflicts, along with their corresponding resolution tactics. This can give more insight into the impact of each particular conflict in light of its duration in the project. Based on this, the effectiveness of the resolution styles and their governance frameworks can also be studied.
- More conflict factors and their root causes can also be roped into the system dynamics model in order to analyze how they complement the conflict factors identified and studied in this thesis.

10. Appendices

10.1 Appendix I – Questionnaire for Clients

1. What's your role within the organization? How much vendor interaction does your role require?
2. What motivated the shift from outsourcing to multisourcing in your organization? What are the advantages and disadvantages of a multisourcing within your organization?
3. What are the conflicts (and how do you attempt to resolve them) that you see between:
 - a) Vendors
 - b) IS&T and Vendors
 - c) Business and Vendors
4. How do you categorize multiple vendors (eg. Based on experience, skills, attitude etc.)?
5. How do you select people from different vendors to staff a particular project?
6. How do you align vendor and business expectation?

10.2 Appendix II – Questionnaire for Vendors

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?
2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?
3. How do you ensure your organization's business development interests in such a scenario?

10.3 Appendix III – Client Interview Responses

Interviewee 1:

1. What's your role within the organization? How much vendor interaction does your role require?

I am an SAP Project Manager but I coordinate with other technology teams too (all those technologies that have an interface with SAP). There are multiple vendors that I have to interact with. These are not necessarily the big ITES firms, but boutique vendors too.

2. What motivated the shift from outsourcing to multisourcing in your organization? What are the advantages and disadvantages of a multisourcing within your organization?

There were some performance concerns with the single vendor outsourcing model that existed earlier. This motivated a shift towards outsourcing. Our firm prefers vendors that can mirror the way we work the best. Boutiques vendors have specialized knowledge and are able to respond much better to the changing needs of business.

Disadvantages –

Transitioning out a vendor – There are issues with documentation and handover of work by vendors in such cases. The quality provided is generally not positive. The vendors who take over are left floundering.

When the transition happens, the new folks cannot really hit the ground running, no matter how much training happens.

Withholding information may be used as a means to reclaim business.

Advantages –

Choice of price offers, provided all vendors have similar reputation and standing.

3. What are the conflicts (and how do you attempt to resolve them) that you see between:
 - a) Vendors
 - b) IST and Vendors

c) Business and Vendors

- a) I don't have specific examples of inter-vendor conflicts as I have to deal more with boutique vendors, where there are no conflict issues. However, in non-boutique vendor scenarios, vendors try to influence the client's perception to favor them over the other vendors. People who switch from one vendor to another especially do this.
- b) Same as disadvantages in the previous question
- c) In some cases when a vendor team member is designated to interact with a business person, there have been instances where they have denied doing something saying it cannot be done. This is not accepted and we have to keep a tab on what is communicated to the business teams from the IST team end. It depends on the communication structure and how clear the definition of roles and responsibilities set by us are.

4. How do you categorize multiple vendors (eg. Based on experience, skills, attitude etc.)?

There is a separate team that manages vendors. To a great extent, the high paid vendors do more of strategic stuff, whereas those with a lower billing rate execute more tactical stuff.

5. How do you select people from different vendors to staff a particular project?

We put the requirements together and determine the driving technology for a project. Then we look at the resources available and the gaps that indicate how many more resources we need to hire.

6. How do you align vendor and business expectation?

We have a business representative team that communicates with the IST team, which in turn communicates with the IT vendors. So, there are two layers between business and vendors to facilitate, communicate and manage expectations.

Interviewee 2:

1. What's your role within the organization? How much vendor interaction does your role require?

I am an SAP Project Manager from the IS&T side. I interact with offshore and onsite vendors and get them to deliver the projects. 75% of my job role involves vendor interaction.

I normally have around 3 vendor organizations to interact with, in addition to our employees working on the project. There are different vendors within SAP as well as in different tracks like GCRM, EDI etc.

2. What motivated the shift from outsourcing to multisourcing in your organization? What are the advantages and disadvantages of a multisourcing within your organization?

In our outsourcing environment, the original vendor was taking it for granted. That motivated the higher management to look for other options and multisourcing was a good derisking strategy.

Advantages:

The biggest advantage is that we have access to a bigger resource pool of highly skilled people at a short notice.

Another advantage is that the cost is under control as the vendors compete for work.

Disadvantages:

More effort is required to manage a bigger set of vendors and their varied requirements, which are location dependent to a certain extent as well, especially in the case of offshore teams.

3. What are the conflicts (and how do you attempt to resolve them) that you see between:
 - a) Vendors
 - b) IST and Vendors
 - c) Business and Vendors

- a) Biggest conflict is the role and job definition of each vendor. Sometimes one vendor does not want to share knowledge with vendors of another company. Another issue is transition. The vendors don't go all out to help other vendors as they hand hold their own people. This is seen especially in the case when one vendor goes on leave and another vendor needs to step in.

At times there are different vendors who are project leads of different tracks eg. Functional and development tracks. In this case, their interaction is very limited and one person may try to expose the limitations of the other party. We resolve this by having joint face to face meetings moderated by us.

- b) When the business tries to interact with a single point of vendor contact, and the job gets diverted to multiple vendors offshore, then there are misunderstandings between business and the vendors at that time. We have to step in to iron out the differences.

- c) Business does develop a rapport with the vendors that they interact directly with. As a result, they tend to favor them more.

We try to define the roles and responsibilities well in advance. Also, the back up plans (in case someone goes on leave) are cleared beforehand, after our learning from different experiences.

The vendor tries to show that he is sharing knowledge freely. For this, we also need to get involved in the knowledge transfer sessions to ensure that the recipient vendor understands the transfer well. When company A tries to groom its own people, they are given multiple chances to learn and understand, but across vendors, there is only one chance that is given by one vendor to the other. We also cannot force them at this. It becomes a bit challenging in this area.

- 4. How do you categorize multiple vendors (eg. Based on experience, skills, attitude etc.)?

There is no definite categorization. We had a long-standing relationship with just one vendor at first. Over the years we have been trying to gear up other vendors. We find that one vendor has been scaling up fast in the SAP area.

Our costs are not going up because of multisourcing. If there would have been just one vendor, then the costs would have definitely gone up.

5. How do you select people from different vendors to staff a particular project?

At a discrete project level, cost is not a factor as the same is fixed on an annual basis. Mainly we go by the person's skillsets and ability to scale up fast. The main thing we check is whether the person has the necessary project execution skillsets. This selection is done on an individual basis than on a vendor basis.

Whenever there is an opening, we ask these vendors to forward resumes of available resources and then we conduct interviews.

Communication skills and exposure to different clients is a plus point. In the latter case, new ideas can flow through. All these parameters are equally important.

6. How do you align vendor and business expectation?

To align vendor expectations, we try to give vendors feedbacks based on milestones and carry out post mortems.

Generally IS&T is the main point of contact for the business. All points are provided to IS&T and not to the vendors management. From there, we take necessary action. Many times, we have to filter off some escalations as well based on their justifiability.

7. Other comments:

At the project staffing phase, we prefer if the vendor does its own screening before sending resumes to us. That definitely helps in building their credibility. If some vendor tries to bombard us with resumes, there will be more rejections.

If the work environment is good, I have seen people gelling well together, irrespective of the vendors different companies. Our focus is more on the individual resources rather than the vendor organizations where they come from.

Interviewee 3:

1. What's your role within the organization? How much vendor interaction does your role require?

I am a client end project manager with almost 80% interaction (both qualitatively and quantitatively) with different vendors.

2. What motivated the shift from outsourcing to multisourcing in your organization? What are the advantages and disadvantages of a multisourcing within your organization?

Management decided to hire multivendors to de-risk and reduce dependency on a single vendor, to bring multiple talents on board and also financial advantages.

Advantages –

Same as above

Disadvantages –

Sometimes coordination amongst multivendors becomes an issue. My effort is doubled in interacting with the resources.

The way in which different vendors work (culturally) and that means more work for me. Geographic diversity of the vendors also adds to the complexity of my management roles.

3. What are the conflicts (and how do you attempt to resolve them) that you see between:

- a) Vendors
- b) IST and Vendors
- c) Business and Vendors

- a) Knowledge sharing in an inter-vendor scenario is difficult to achieve. I have to make it happen by ensuring smooth knowledge transfer.

Vendors lose motivation if their organization offers them lesser facilities by their organization.

- b) The vendor is somehow not able to match our requirements with resource skills.

Another challenge is that they are not able to meet the demand of resources that we have.

In some cases, the vendor organization may have a lot of red-tapism, which slows things down.

- c) There is not really a conflict at this point as we play a good role to keep the conflicts to a minimum. That is our role.

- 4. How do you categorize multiple vendors (eg. Based on experience, skills, attitude etc.)?

We try to have a more strategic alliance with our vendors as the contribution at that level is highly valued in our work processes.

- 5. How do you select people from different vendors to staff a particular project?

We decide staffing based on past experience with vendors. What matters is the quality and timely delivery of a resource. I prefer to choose vendors with a positive past experience with us and then interview people if they are new.

- 6. How do you align vendor and business expectation?

We always try to influence the vendor to align with the business objectives. At the same time, we do say no to business at times when we feel that business demands are not deliverable. Our interaction with business teams is based on transparency and honesty.

Interviewee 4:

- 1. What's your role within the organization? How much vendor interaction does your role require?

I am a team lead in the online store support team. I have a high level of interaction with multivendors (of the order of 50:50).

- 2. What motivated the shift from outsourcing to multisourcing in your organization?

What are the advantages and disadvantages of a multisourcing within your organization?

In my team, I have always seen multisourcing.

Advantages –

There are multiple solutions to an issue.

Disadvantages –

We are not sure of the neutrality of some of the solution providers.

3. What are the conflicts (and how do you attempt to resolve them) that you see between:
 - a) Vendors
 - b) IST and Vendors
 - c) Business and Vendors
 - a) Vendors don't share their trade secrets and keep other vendors thinking. That snowballs the delays. The organization has to deal with the extra work of multivendor management. That's why we try to keep the expectations and ground rules right before starting the project. Personally I try to focus on language and culture, in order to manage inter vendor conflicts. Knowledge transfer or handing over is another challenge. We have to preside over knowledge transfer sessions.
 - b) We try to keep the communications crystal clear because of which not much of a conflict is seen between IST and vendors.
 - c) No conflicts are observed as such between business and vendors as all communication passes through us.
4. How do you categorize multiple vendors (eg. Based on experience, skills, attitude etc.)?

We do categorize vendors based on their tenure of association and trust. More strategic work is given to long term vendors. At the same time, few vendors are opened up to some strategic work in order to get new and fresh ideas.
5. How do you select people from different vendors to staff a particular project?

We look at the project requirements and the desired vendor attributes. Based on this, we look at available vendors and send out RFPs and then start selecting the right people.

6. How do you align vendor and business expectation?

Business requirements are translated into technical capabilities and the gaps are observed which become project goals. These are then communicated to the vendors.

Interviewee 5:

1. What's your role within the organization? How much vendor interaction does your role require?

I am an SAP Project Manager. My interaction to vendor account management is limited to :

- communicating job descriptions
- Feedback on quality of work or any other work related issues, etc.

Interaction with the actual outsourced resources :

- as project manager/technical lead when assigned project members are outsourced resources
- as escalation/oversight/SME role to on-site support

We have 20% clients to 80% contractors in a typical project team

2. What motivated the shift from outsourcing to multisourcing in your organization?

What are the advantages and disadvantages of a multisourcing within your organization?

I believe it's primarily to reduce the over-reliance on any one particular vendor and the associated risks arising from that. This is more in terms of resource backup levels.

Advantages:

Wider pool of resources

Disadvantages: (from the viewpoint of direct interaction):

- inconsistent pre-training on client specific knowledge
- inconsistent skill-set between the resources from different vendors

- each vendor has different core strengths (for e.g. Vendor A can ensure a consistent skill set in their resource pool ; perhaps stemming from a stricter hiring policy or better access to better candidates etc.) but the vendor contract may not make use of such advantages.

3. What are the conflicts (and how do you attempt to resolve them) that you see between:

a) Vendors

At the execution level, I don't see conflict between vendor resources – everyone is expected to deliver their assignments and help one another

We are in a “demand exceeds supply” situation so everyone is busy and there is more than enough work to go around.

b) IST and Vendors

Vendor management and strategy are the purview of the IT supplier management. I provide my manager with appropriate feedback and he takes it forward where applicable.

Initially, the multi-sourcing was differentiated along the following lines to reduce the multi-source conflict for e.g.

- Roles: support resources vs. project resources
- Skill set: SAP vs. Data Warehouses etc

However its constantly being fine tuned as we progress.

Many times people are not trained and we have to do the extra work of training them. Communication skills are another area that worries us. We find people who have difficulties communicate or articulate.

c) Business and Vendors

For business, everyone is from IS&T and we don't communicate to them about vendors separately. Any escalations are IST and we actionize accordingly.

4. How do you categorize multiple vendors (eg. Based on experience, skills, attitude etc.)?

Each vendor has different core strengths (for e.g. some vendors can ensure a consistent skill set in their resource pool; perhaps stemming from a stricter hiring policy or better access to better candidates etc.) but the vendor contract may not make use of such advantages.

If we categorize the resources its usually by merit.

5. How do you select people from different vendors to staff a particular project?

The process should be independent of where the vendors come from (vendor A, vendor B or independent contractors) and based on “best candidate” for the job and we do end up with a “mixed” set.

Project managers would choose from the list of available contractors and /or (new) resumes based on:

- familiarity with the topic
- experience (with client processes)
- skill type requirements for e.g. “tester” or “designer”

It’s a toss if there are “equal” candidates from both Vendor A and Vendor B.

However its more than likely that availability drives this process as projects start off at different points in time.

The initial selection of the list is where there may be conflict. For e.g. if there was a pre-determined no. of contract hours per vendor. This may influence the candidates on the list.

6. How do you align vendor and business expectation?

Both vendor and client expectation is based on the service level agreement . Key performance indicators are set up to manage this.

We (IST) manage the expectation of the business teams with respect to the vendor execution for e.g. support, project delivery etc.

10.4 Appendix IV – Vendor Interview Responses

Interviewee 1:

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?

I am a GCRM Consultant for the after sales support part of the client's business. We have 26-30 people in the team. We have interactions with other vendors from a support perspective. Onsite folks have a high degree of direct interaction with multiple vendors involved in the project.

2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?

Advantages –

We feel that we are a part of the client's organization.

Healthy competition fosters good results

Disadvantages –

Personal conflicts do arise. They are not generic in nature, but very specific. Healthy competition is one thing, but in some situations, the competition crosses the healthy limits, which leads to ego problems etc. In the testing phase, we need data, which brings in dependencies. Unless there is intervention from the client end, the data does not come through.

Conflicts –

One is mentioned in the disadvantage above.

Another one is that when one vendor loses its project to another vendor, then knowledge transfer is a huge issue. The quality of the knowledge transfer was not one of a good standard. This happens unless the client comes in and starts supervising everyone.

3. How do you ensure your organization's business development interests in such a scenario?

We try to offer innovative and fresh solutions to the client. We try to come up with at least one thing that gives the client manager a 'wow' effect.

Interviewee 2:

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?

I am a Vendor A SAP SD Senior Consultant in the client's SAP Projects team.

There is a high level of interaction with 60% of people who are vendors (In a team of 20 people, 4 are Vendor A people, 4 are client employees, 12 are other vendors)

2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?

Advantages:

We all get along well together.

Generally, nobody tries to hold back information. It's a give and take situation.

Face to face communication with other vendors helps build a personal rapport too.

Disadvantages:

Within the same vendor group, the interaction is more. We try to facilitate more cross vendor interaction, but those efforts are limited.

There is a possibility of silos being formed. This is an unavoidable situation with possibly no resolution.

There can be hiccups in the interaction with other vendors, there can be power struggle. This is mitigated to a certain extent by building personal rapport. Also, if there is a new resource requirement, everyone tries to pull their people inside.

There can still be cases wherein people hold back information, especially if it critical to influence client perception. In such cases, client escalation becomes important.

3. How do you ensure your organization's business development interests in such a scenario?

Strong governance, project manager is the client employee, he is marked in all communications. He is aware of any blockage, if the same exists.

In general there is not much rigging for business development interests as if the client is not willing to pay enough billing, then we won't push to pursue the opportunity much. This can be a point of conflict in other projects though.

Everyone tries to contribute their best in an effort to get repeat business; as a result, the client's interests are met automatically.

Other comments:

It helps to stay connected and be aware of stuff outside the scope of the project, both in terms of SAP knowledge as well as relationships with specific people in different business teams.

Interviewee 3:

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?

I am an MM/PP Consultant in Retail business team.

I interact regularly with Different vendors from different modules.

We have a maximum of 5 people per project - 1 per vendor and 2 employee, but approximately equal representation from each vendor.

2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?

Advantages:

The projects benefit from the consultants' diverse experience and different knowledge levels about different processes

Disadvantages:

There is a tendency of people that they do not disclose many things, in order to showcase themselves better to clients.

Conflicts:

Disclosure is an issue. I try to build rapport with clients as well as vendors. In extreme cases, we have to escalate matters to the clients.

At times there is a difference in understanding levels of different vendors. At such times, the client has to step in to bridge the gap.

3. How do you ensure your organization's business development interests in such a scenario?

Having a good rapport with the client is the key. Whenever there is a new requirement, I do a screening and interview of my companies resources first and only send out the best resumes to the client. That builds credibility and the client's confidence.

Interviewee 4:

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?

I am the SD and logistics lead and the account manager from the vendor end. I have a high degree of multivendor interaction. The team size is typically 10 people, of which 20% are client employees, and the rest are all vendors.

2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?

Advantages –

Different vendors bring their own experiences and you get to explore new things. There is more professionalism as everyone is from a different organization and no one takes anyone for granted.

We don't have to take the extra burden of scaling up other vendors.

Disadvantages –

It's a loss from an account point of view.

You won't be moving around freely and it takes some time to build rapport.

Conflicts –

More of personal than project level conflicts. Each one tries to show that he is the best. We try to ensure that the client's objectives are fulfilled.

3. How do you ensure your organization's business development interests in such a scenario?

We ensure a good track record of our consultants and their work is visible to the client managers. They select the staff for the project through interviews. We like to filter out the best resources and present them to the clients. That saves them time and gives them really good resources to choose from.

Interviewee 5:

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?

I was an SAP Consultant with the client (from a vendor organization). My interaction with vendors was relatively high but limited to the touch points that SAP had with the other systems (which are serviced by these vendors).

2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?

Advantages –

The knowledge repository goes up and there are different perspectives to a problem.

Disadvantages –

Power struggle and a constant pressure to prove yourself better.

Everybody tries to save their skin.

Conflicts –

Same as disadvantages. Most of them are resolved by the project managers either amicably, or by means of replacement of talent.

3. How do you ensure your organization's business development interests in such a scenario?

We try to project the necessary skills and competence that is required by the client. That attracts the client to us and helps us build our core competency too.

Interviewee 6:

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?

My role is that as a vendor end development manager for the CRM module. My degree of interaction with multiple vendors is very high. In a 40 people team, 10 people are from the client end, 10 from my company and the rest from other vendors.

2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?

Advantages –

I don't feel there are many advantages for the vendors. I think there are more benefits for the clients in this system (multisourcing). Another thing is that a competitive environment can set in that improves performance.

Disadvantages –

A lot of miscommunication happens. There are communication delays too. Vendors try to hide errors at their end too, in order to save face.

Conflicts –

When there is any issue, a blame game starts. I try to get all the vendors in a war room and test the issues end to end to fix such issues. I try to build personal relationships with people in order to prevent any direct blame game.

Transition from one vendor to another is when the documentation is complete but never detailed. This is a challenge, which needs to be addressed whenever such a transition happens.

3. How do you ensure your organization's business development interests in such a scenario?

We try to get into the client's shoe, understand his business and offer him better solutions.

Interviewee 7:

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?

My role is of an SAP SD lead for store launch projects. My role includes design and development of SAP process flows for business processes. Involves interaction with multiple vendor teams, depending on the functionalities and scope of the project. Project Managers are generally client employees. People managing the web to SAP interfaces are from other vendors. Also, vendors are engaged at different stages of the project. On an average there is a 1:4 interaction with vendors.

2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?

There are confusions regarding other partners not being clearly aware of the scope of the project. Thus, at the project kick off stage, the scope and requirements are clarified to the vendors.

Advantages:

The people whom we interact with, if they are from other organizations, they will have a fresh mindset as opposed to people from a single organization. We have a bias internally, but having people from other organizations, helps in bringing in fresh lines of thought. This is extremely helpful in designing better solutions.

Disadvantages:

We spend more time, labor and energy in terms on explaining what's required out of the system. If we have people from our own company, this job is very easy. A resolution is to have client moderated knowledge transfer sessions.

Another conflict is prioritization, especially when people from different people from different organizations handle related parts of the project. At this, I would try to understand the other person's perspective. I would try to help a person unlearn his bias (in the case of high priority issues) and try to set guidelines/process for him to follow directly. If that's difficult, then client level escalation might be required, so that they can intervene and set the priorities correctly.

3. How do you ensure your organization's business development interests in such a scenario?

I'll try to highlight why our company's resource is the best fit. I'll try to bring out advantages of having people from our company as we can scale them up at a much higher rate. Also, I would pre screen resumes at my end before sending them out to the client.

Other comments: One client got the vendor to document every issue solved in detail and they made a whole database out of it. They made it mandatory for the vendor to share this on a periodic basis. When the vendor wanted to raise prices, the client successfully changed over to another vendor right off the bat, since they had the entire repository.

There were 3 vendors on a project from the beginning. I had built relationships with the other vendors. In the middle of the project, a person from another vendor came in and took over from me. In that case, there was a major conflict between the person who took over from me and the others. For every case, the developers used to come back to me to authenticate at every step, even though I was out of the project for quite some time then. Finally, matters had to escalate to the client, where he had to draw the lines of responsibility. The execution becomes very formal thereafter. The project outcome also suffers to a certain extent because of the relationships getting affected.

Interviewee 8:

1. What's your role within the client's organization and what is the level of interaction with multiple vendors in your role to get a task/project done?

I am an SAP MM/Logistics consultant from the vendor end. I have a moderate level of interaction with other vendors handling different technologies. I have less of an interaction with vendors of other organizations handling SAP.

2. What are the advantages and disadvantages of working with multiple vendor partners on the same project? What are the possible conflicts?

Advantages –

The client gets the best out of talent. The overall level of performance improves due to competition.

Disadvantages –

If proper handholding does not happen, then knowledge gaps increase. Previously designed programs and utilities may be rendered useless if not documented and passed on properly.

Conflicts –

One vendor may be more overloaded than the others. That might lead to loss of motivation on the overloaded vendor's part.

I have also seen people trying to hide information and power struggle in order to project themselves better in front of the client. But the client has well defined processes to derive the best out of the vendors. The client manager tries to stay on top of things and is able to resolve things pretty well. They try to keep people accountable.

3. How do you ensure your organization's business development interests in such a scenario?

I do so by keeping the client's manager abreast of all happenings at all times. I also try to be and keep my people business savvy in order to create that edge, in addition to building competency within SAP. I try to see what I am supposed to do, what am I doing and what's the best that can be done.

10.5 Appendix V – Significance Value (Average) of Conflict and Resolution Factors (Survey Response)

Conflict/Resolution Factors	Average Significance (On a scale of 1 to 5, 1 being lowest)
Client KTs	3.889
Knowledge Gaps	4.222
Withholding Information	4.111
Personal Rapport	3.889
Motivation	3.556
Working in Silos	3.222
Power Struggle	3.111
Client Escalation	3.333
Finger Pointing	3.556
Communication	4.222

Table 4: Significance value of Conflict and Resolution Factors

10.6 Appendix VI – Occurrence Value (Average) of Conflict and Resolution Factors (Survey Response)

Conflict/Resolution Factors	Average Occurrence (0-100%)
Client KTs	60.97
Knowledge Gaps	71.96
Withholding Information	64.06
Personal Rapport	67.34
Motivation	62.90
Working in Silos	58.59
Power Struggle	55.00
Client Escalation	49.38
Finger Pointing	63.68
Communication	78.79

Table 5: Occurrence value of Conflict and Resolution Factors

10.7 Appendix VII – Status of Work Done When the Conflict Factors are Increased by 25%

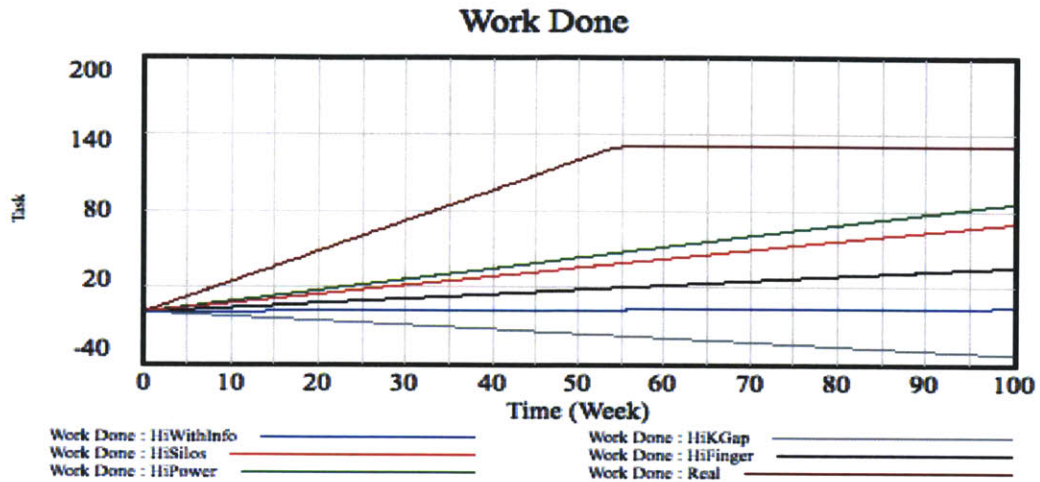


Figure 22: Work done when conflict factors are raised by 25%

10.8 Appendix VIII – Status of Work Done When the Resolution Factors are Decreased by 25%

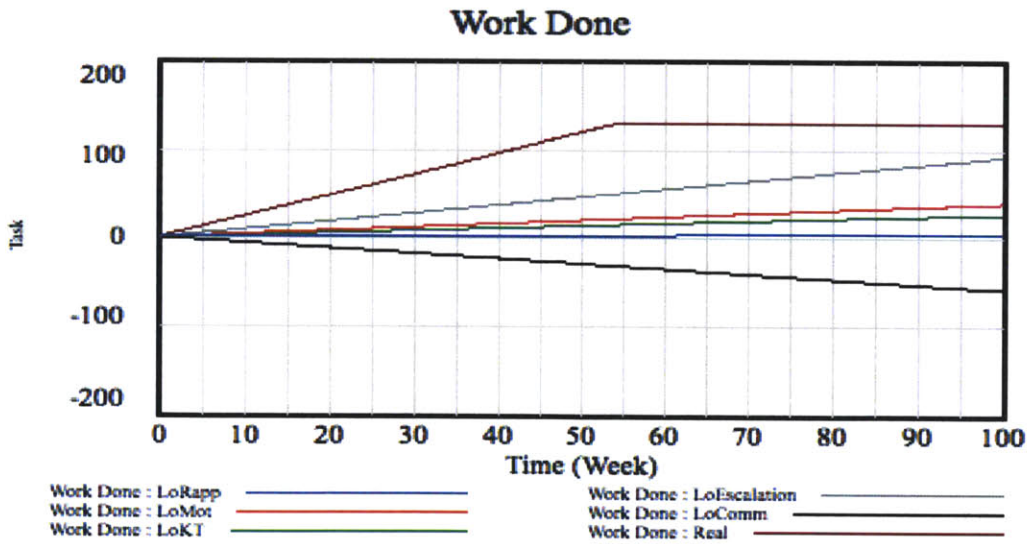


Figure 23: Work done when conflict factors are raised by 25%

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