PATTERNS OF TASK CHANGE DUE TO AMBIGUITY
IN NEW PRODUCT DEVELOPMENT

New Product Development is a process characterized by task ambiguity. From interview data we found four patterns of task structure change due to or aggravated by ambiguity. Knowledge of these patterns will lead to more appropriate project expectations and encourage the allocation of resources to deal with inevitable ambiguity.

Introduction

The New Product Development (NPD) process begins with a set of more or less ambiguous concepts that define required product characteristics and features. As the product is completed, the meaning of the concepts becomes precisely specified and a concrete product identity gradually takes shape. New product ideas are cleaned up and crystallized through a network of functional specialists from different organizational units, each with different knowledge. Within the company we investigated, communication between functional experts and the integration of their dispersed knowledge is the process by which a project’s complexity is handled (Becker, 2001; Becker and Zirpoli, 2003). Communication and the project’s task structure are greatly impacted by the appearance of undiscovered work which is often due to ambiguity in the product’s initial specification. Unfortunately the nature of ambiguity is such that it cannot be anticipated, but with enough knowledge about its effects managers can build flexibility into their processes to cope.

Traditional project management strategies handle complexity through hierarchical decomposition, whereby a complex task is decomposed into progressively simpler and more manageable sub-tasks that are processed separately and later assembled into a finished product (Simon, 1996). For projects with uncertainty but little ambiguity this approach works quite well, and the literature provides useful analytical methods such as CPM, PERT, and Project Risk Management to support project success (Ward, 2003). These approaches offer little help, however, in managing projects with greater amounts of ambiguity, such as those dealing with new product development. NPD projects often arrive over budget, behind schedule, lacking functionality and quality, or with higher than expected unit costs (Tatikonda and Rosenthal, 2000).

The difference between uncertainty and ambiguity has been discussed by Shrader, Riggs et al. (1993) and Globerson (1997). Uncertainty arises when all possible variables are known but their eventual numerical values are not. An example would be time and budget estimations for the installation of a door frame in a home building project. The builder knows all the steps involved and is able to give a cost and time estimate with a margin of error to deal with known sources of uncertainty, such as weather conditions, parts availability, or worker sickness. Ambiguity exists...
when the relationship between variables, or even the variables themselves, are not known. Using the same example, time and budget estimation would be an ambiguous task if the builder did not know that the door frame required a foundation and basement to be built first, or that the specified door material, unused before, was prone to break during installation. Pender (2001) summarises: “relying on probability theory can mask other aspects of incomplete knowledge and can lead to a false sense of accuracy and precision” (p. 80).

New product development is a process characterized by a large amount of ambiguity which causes employee’s task structures to fluctuate in unpredictable ways. Previous studies have found that commonly used project management approaches assume adequate information (Pich, Loch, and De Meyer, 2002, p. 1017), and while the literature certainly recognizes the difficulty of working and communicating under uncertain and ambiguous conditions (Moenaert et al., 1995), we feel that there is need to investigate the effects of ambiguity at the task level of analysis. In this paper, we focus our attention on the impact of ambiguity in the process of new product development, especially on how task structures evolve in ambiguous environments, such as the NPD process. We first discuss the interview methodology and the codification process, then review the main themes found during analysis. From the data and themes we extracted four patterns of task change, all of which were in some part caused or aggravated by ambiguity.

Method

The study was conducted in a large North American telecom company with tens of thousands of employees and operating in a range of high-tech industries such as ISP, internet security, wireless technology products, SMS messaging, voice services, etc. The company has adopted an aggressive strategy of introducing approximately 200 new products to the market each year and the NPD process has become a major focus of management attention.

The NPD process starts when an idea for a future product is generated by a Product Manager within the marketing department. New product ideas undergo an idea assessment process that estimates the market value of the proposed product. If the market value of the proposed product is perceived to be satisfactory by the executive board then the product idea is further assessed by the Project Management Office (PMO) in terms of its fit within the company’s product portfolio and the availability of the resources for a successful product launch. If this assessment is also satisfactory, product specifications are produced and company resources are allocated for its development. Development of the actual product is done mainly by the Information Systems/Information Technology (IS/IT) group. When the development is finished the product is launched and maintained by the Operations group.

Open ended interviews based on the ECHO method of Bavelas (Barthol and Bridge, 1969; Barthol and de Mille, 1969; Bavelas, 1942) were used to learn about the NPD situation as experienced by the people involved. The ECHO methodology has been used successfully for analyzing communication networks in a variety of organizational settings (Duimering et al., 1998; Safayeni et al., 1992). The method focuses on the network of interactions identified as significant by subjects, and analyzes the communication between two interacting nodes from the point of view of those involved. By asking for specific examples of positive and negative behaviours, subjects are encouraged to provide unprocessed information, without generalizing and assigning irrelevant meaning and interpretation to the information. The method also prevents them from giving high level abstract statements that are often far too ambiguous to be properly interpreted. The interview begins by asking subjects to describe their task structure and to identify other people/units/tools in the organization with whom they interact and are significant in their job
situation. As a result, a diagram in the shape of a star is formed with the subject in the middle surrounded by other nodes. Secondly, a set of echo questions are asked to examine in detail the interactions between the subject and each of the identified nodes. The subject is asked to provide specific examples of behaviours performed by other nodes that are helpful to the subject, and examples of behaviours that are not helpful to the subject. Thus, by conducting interviews with all identified nodes, all perspectives on the situation are obtained.

Interviews were conducted with four major groups involved in the NPD process: Project Management, Product Management, IS/IT, and Operations. However, due to the limited space and the specific topic of this paper, we will only focus on interviews conducted with the NPD project managers. Interviews were conducted with 12 project managers, each ranging from two to three hours in length. The number of interviewees and specific individuals were selected by the contact director in the company. The objective was to sample those individuals from different divisions of the company and from different levels of experience who would be able to provide a relatively comprehensive picture of their job environment and their range of interactions, all without putting an enormous burden on the organization’s resources.

All interviews were audio taped and transcribed. The unit of analysis was an individual comment/example of behaviour. The coding of comments was done collaboratively by the research team members. Comments describing examples of behaviours were analyzed and coded into more general categories based on the similarity of those behaviours using the Nudist (v.4) qualitative data analysis software. Comments and examples were categorized according to the group in the organization to which they refer, and behaviours described as helpful were coded separately from those described as not helpful for each of the nodes. As a result of the coding, four to six categories of helpful and not helpful behaviours of varying degrees of homogeneity were identified for each organizational group mentioned by NPD project managers.

After the basic properties of the NPD task situation as experienced by project managers was established through the preceding method, we completed a theme-based interpretive analysis of the interview data. This second pass through the data focused on identifying specific comments related to the general theme of product requirements ambiguity and its influence on NPD task structures. From these theme-specific data we identified several patterns of task-structure change associated with product requirements ambiguity.

**Results: NPD Task Situation**

Two types of results will be presented. First, to provide a general characterization of the NPD task situation as experienced by project managers, we briefly summarize the major behavioural categories identified from the analysis of ECHO interview comments. For brevity, we only summarize the project manager’s comments about Product Managers, IS/IT, and Operations, although interactions with several other groups were also described by project managers during interviews. Second, we present the results of the theme-based analysis of the effects of product requirements ambiguity on NPD task structures. The latter will be presented in the form of a taxonomy in which particular effect patterns are defined and illustrated through the use of specific examples.

A thorough analysis of the interview results showed that behaviours reported by project managers, both helpful and unhelpful, give prominence to certain issues that are common across many nodes of interaction (see Appendix A). These issues can be summarized into the following themes of behaviours:
- Clarity of product requirements and unforeseen changes in project scope
- Communication quality
- Availability of relevant parties
- “Padding” (i.e., overestimation of resources, such as time or money, required to complete part of an NPD project.)
- Experience and knowledge of relevant parties
- “Tunnel Vision” (i.e. attributions suggesting that each relevant party considers the NPD project only from their own perspective and are unwilling to accommodate other perspectives.)

A large number of comments from project managers address the issue of the requirements ambiguity. For example, project managers treat a clear, detailed and specific product requirement as the most helpful behaviour that a product manager could perform. Similarly, the lack of clarity in defining product requirements is viewed as very unhelpful by project managers.

Communication is one of the most important means of reducing requirements ambiguity and a lack of communication or poor communication was reported as one of the major sources of unhelpfulness from every major node that project managers interact with. Another major issue appearing in both helpful and non-helpful columns is the availability of other nodes for the intense communication to consult, clarify and negotiate product requirements.

Before any NPD project is undertaken in the company, all parties involved in the development are required to submit time and cost estimates on the amount of resources needed to complete their part of the project. Project managers suggested that systematic overestimation or ‘padding’ was used extensively by each party in the task network, presumably as a buffering mechanism to cope with scope and specification ambiguity.

Knowledge and experience was another prevalent theme. New product development requires the integration of subject knowledge which is often distributed in the firm’s social network. Because of a high degree of functional specialization in this organization, the problem of knowledge and experience becomes prominent in the task situation. Every interviewee mentioned that it is helpful if the node with which they are interacting has the required knowledge, and that not having the knowledge is not helpful. Two types of knowledge were identified by project managers as relevant to the NPD process: domain specific knowledge associated with each functional specialization, and social network knowledge associated with knowing whom to talk to in order to find the domain specific knowledge. The relationship between the two was also identified as being important. Specifically, when the functional experts are new in the organization, they may lack knowledge of the larger NPD task situation as experienced by other relevant parties, and consequently exhibit “tunnel vision” due to their functional specialization.

From this brief analysis, it is clear that ambiguity of the task situation is the major problem in the NPD process. The interview results suggest that product requirements ambiguity had various effects on the NPD task situation as experienced by project managers including, for example, the need for effective cross-functional communication. The results also indicate that the social structure of the organization may amplify the effects of ambiguity. For instance, functional specialization makes coping with ambiguity more difficult due to dispersed expert knowledge as well as complications associated with “tunnel vision.”

Results: Some Effects of Ambiguity on NPD Task Structure
We now explicitly examine the relationship between ambiguity and NPD task structure, based on a thematic analysis of interview comments related to the role of ambiguity. From our data, we identified four significant patterns of task changes that people experience in NPD process.

1. **Hierarchical decomposition based on functional organization structure**

   \[ \sum_{i=1}^{n} x(i) \rightarrow \{ x_1, x_2, x_3 \ldots x_n \} \text{ i.e. } X = i=1 x_i \]  

   (“⇒” means “changed into”)  

   The NPD task structure refers to the manner by which complex tasks are decomposed and delegated to individuals and organizational units. In the company we studied, new product development tasks are normally decomposed according to the organization’s functional units. Thus, if \( X \) represents the new product idea as a whole, the NPD process involves the decomposition of \( X \) into various components \( (x_1, x_2, x_3 \ldots x_n) \) in accordance with the segregation of functional units in the organization. Decomposing the task in this way provides a kind of operational definition of the NPD task to be accomplished by each functional unit.

   Three assumptions underlie this decomposition process: 1) that the initial idea is decomposable; 2) that the set of sub-tasks resulting from decomposition provide an appropriate operational definition of the overall NPD task; and 3) that after all relevant parties have completed their sub-tasks, the decomposed parts can be reintegrated to yield the original product idea. It is worth noting that the decomposition is based on the existing knowledge structure represented by the functional structure within the organization. However, the very idea of new products inherently contradicts the existing knowledge structure. That is to say, the product is new because it did not exist in the current knowledge structure and the development of the new products probably involves tasks not normally dealt with by the existing organizational structure. Therefore, it is problematic whether or not the current organizational units have the ability to deal with these tasks. Moreover, after the decomposed tasks are finished by each relevant party, it is questionable how to integrate them into an organic whole product as intended originally by product managers.

2. **Component change**

   \[ X \Rightarrow X' \]  

   Most of the interviewees mentioned that at the end of the product development, the finished products were somewhat different from the original idea. The NPD task structure changed when some part of the task component changed in the course of doing the job. Changes in the operationalization of product components occurred due to various factors like budget cutting, market pressure, competitor’s relevant products, etc. that were external to the new product idea itself. Four subtypes of component change were identified:

2a. Shrinking

\[ X = \{ x_1, x_2, x_3 \} \Rightarrow X' = \{ x_{1'}, x_3' \} \]
The new product shrinks into a subset of the original idea. Some of the components in the original product idea are abandoned due to budget cutting or the necessity to speed up the product introduction time. If we assume the interdependence of the sub-tasks, the remaining subtasks \((x_1, x_3)\) would have to change accordingly \((x_1', x_3')\) to accommodate the deletion of certain tasks (here, \(x_2\)). Example 1 (Appendix B) demonstrates this point. It is interesting to note in this example that the three major variables in NPD: budget, time and scope are utilized by project managers to deal with the changes. If keeping one of them constant, the other two are in direct ratio. For example, if budget is cut then either time or scope should be reduced to keep the other one of the latter two constant.

2b. Expanding

\[
X = \{x_1, x_2, x_3\} \Rightarrow X' = \{x_1', x_2', x_3', x_4\}
\] (4)

The new product is expanded to include more components than the original ideas. Some of the components missed in the original product ideation stage are added in due to various reasons. For example, when talking about the helpful behaviour of project managers to product managers, one of the interviewee mentioned that the product manager’s idea was expanded by factoring in potential costs that they overlooked (Example 2). As discussed in 2a, if we assume the interdependence of the sub-tasks, the original sub-tasks \((x_1, x_2, x_3)\) should be changed accordingly \((x_1', x_2', x_3')\) to accommodate the newly added sub-tasks (here, \(x_4\)).

Besides adding some of the necessary components later in the process, our data shows that a new product is likely to be expanded because of the padding and the tunnel vision of the relevant parties. For example, product managers or IS/IT would like to expand their project to include some more expensive or advanced systems where current cheaper system would meet the requirements: “They [Product Managers] want a Cadillac where a Neon is fine” (Example 3).

2c. Substituting

\[
X \Rightarrow X' \quad \text{i.e.} \quad X = \{x_1, x_2, x_3\} \Rightarrow X' = \{x_1', x_2', x_4\}
\] (5)

Component substitution refers to the phenomenon that some of the specifications of the new product changed during the course of the development. So if \(X\) represents the new product which could be decomposed into \(x_1, x_2, x_3\), it is possible that during the course of product development the product changes into \(X'\) because some of the decomposed parts were substituted by other parts.

There are various reasons that could cause component substitution. The most obvious one is due to the technology change. For example, one of the interviewee commented: “most projects go through with changes within IS/IT group. For example, new pricing offer in the last second due to lack of market change; operating system changes [from Windows 95 to Windows 2000]; etc. Normally, changes would lead to better projects than the original planed.” Software upgrades and hardware technology advances during the course of the new product development are major driving forces for this kind of change.

Another more intrinsic reason is that the high level assessment of product ideas could be comparatively vague, but when the new product development team really gets into the development, they need more precise and detailed specifications. These would often lead to component changes from the original assessment (Example 4).
The third reason for component changes is the communication breakdown between the relevant parties on the identity of the new product or on some of the characteristics of the new product. For example, some components of the new product are not well communicated or understood by relevant parties (Example 5).

Finally, a component change occurs when a product sponsor (product manager) changes their mind during the course of the product development (Example 6).

2d. Addition (scope creep)

\[ X \Rightarrow X + Y \quad \text{i.e.} \quad X = \{x_1, x_2, x_3\} \Rightarrow X \{x_1, x_2, x_3\} + Y \{y_1, y_2, y_3, y_4\} \quad (6) \]

As one of the most common changes that people in NPD experience, scope creep is extensively studied in project management literature. In this paper, scope creep is defined as a gradual inflation of the tasks in a project. So if \( X \) represents the task, during the course of the development, \( X \) gradually becomes \( X \) plus \( Y \). This pattern of change is different from 2b (expanding) because in this type, \( X \) does not change; \( Y \) is a pure addition and not relevant to \( X \) whereas in 2b \( X \) changes its content by incorporating new components.

It is normally believed that a failure to establish the clear requirements of the new products would lead to scope creep. However, for any new product, by definition, it is very difficult to establish very clear requirements (Example 7). New projects are ventures into unknown territory. Sometimes the complexity of the problem is underestimated or sometimes, it is impossible to know things before they really happen. Thus, scope could expand in the middle of the development to cope with changes in environment factors.

Another common reason for scope creep is perfectionism; people sometimes forget that good enough is sufficient (Example 8). However, within our data we found that attributing scope creep to perfectionism is a naïve way of looking at the problem. Quite often, scope creeps not because product managers want to have a perfect product, but because it is a mechanism they use to deal with the rigidity in their task situation (Example 9).

3. Subjective change

\[ X \Rightarrow X \text{ or } x \quad (7) \]

The third pattern of change due to ambiguity is caused by an employee’s subjective perception and judgement. In this case the causes of changes are internal factors such as an employee’s level of experience, the knowledge capacity of the project team, or how the tasks are evaluated and planned. These factors would directly influence how the task is completed and would intrinsically decide the quality of the development. After the ideas of new products are functionally decomposed it is assumed that the delegated tasks will be completed in the required timeframe. However, the task could be regarded by the employee as ‘easy’ or ‘difficult’, or could be evaluated as a ‘big’ job or ‘small’ job. If \( X \) represents the task, \( X \) could be regarded or perceived as a very big \( X \) or a very small \( x \). The factors that cause this different perception are: a) the employee’s knowledge and experience level; b) the way that the task is divided into sub-components and the way these components are allocated into each unit; and most interestingly, c) the intentionality of the employee’s perception, i.e. how the employee wants others to perceive the task.
a) The employee’s knowledge and experience level play a very important role in how the task is perceived and gets done. Project managers mentioned that with every node they interact with it is helpful if these relevant parties acquired the necessary knowledge and experience (Example 10).

b) The way that the task is divided into sub-components and the way these components are allocated into each unit also contributes to the different perception on how ‘big’ the task is. When X was allocated in the task network, the ambiguity of task X impacted upon how it was decomposed into each x_i. For example, in the company that we studied, billing (X) is a huge issue. The company has hundreds of billing systems which could only be understood by their finance experts; an experienced project manager could easily be confused. The result of this confusion would be a perception that X needs to be decomposed into many x’s, due to its complexity. When the company realized this problem, they started to categorize the billing systems into subtypes based on their customer population and distributed the billing knowledge among project managers. Now billing looks comparatively easy (a single x) (Example 11).

c) The task could be perceived as ‘big’ or ‘small’ intentionally by an employee in order to influence how others perceive the task. Usually the relevant parties only have a rough idea of how ‘big’ a particular task would be; the detailed estimation of the task still depends on the subject expert’s view. Thus it is possible for the subject experts to either give an accurate estimation or deliberately inflate or pad the estimation due to various reasons. In Example 12, the project manager complains that he and the product manager perceive the cost of development differently. He thought the cost was fine because of the involvement of outside contractors while product manager thought the project manager was padding the cost.

Usually, each party would like to have others believe that the task is more important than it really is, thus requiring more funding or more resources. Example 13 shows that this is a way to increase flexibility in order to deal with ambiguity in NPD.

4. Interdependence

\[ X = \{x_1, x_2, x_3 \ldots x_n\} \Rightarrow X = \{x_1 = f(x_2), x_2, x_3 = f(x_1, x_2) \ldots x_n\} \]  (8)

The last pattern of change is task interdependence. By decomposing the idea of the new product according to the organization’s functional units and delegating tasks to these functional units, we assumed the independence of these task units, i.e. these task units can be completed separately from each other. However, in reality these task units are not independent, but interdependent. Achieving one task often requires the accomplishment of another. For example, in our formula x_1 is a function of x_2, and x_3 is a function of x_1 and x_2.

Therefore the task network becomes complicated because each relevant party need to coordinate with other nodes in the network in order to achieve their sub task. This brings to prominence the importance of an interaction interface – a unit with more general knowledge who operates as a translator or interpreter for nodes in communication. This is regarded by many project managers as very important and helpful to achieve their own task (Example 14).

In summary, subject matter experts operating within their own functional groups often experience these patterns of task change, either due to or aggravated by ambiguity in the product specification. It is worth noting that we are not claiming either comprehensiveness or independence of these patterns, since these are only the patterns found in our interview data. In reality all patterns could be operating simultaneously in different levels of new product
development. As we discussed earlier, new product development is characterized by task ambiguity. Even if the task could be decomposed into sub-tasks based on the existing functional units, these sub-tasks are still interdependent. Moreover, before decomposition tasks in a higher level of abstraction may be interdependent and after decomposition would force task change in disparate processes of development, further amplifying the effects of existing task ambiguity. These patterns of task change are interwoven in a complicated and largely unknown manner throughout the process of new product development.

Conclusion

This paper reported on a structured interview based study of a large telecom company’s new product development (NPD) process. The study provided insights on how the project managers involved in NPD experience their task situation. The study revealed that product ambiguity is one of the major causes of task change in the NPD process. It is important to understand not only that change is inevitable in an ambiguous task environment, but also that this change occurs in recognizable and predictable patterns. The paper identified four patterns of task change, all due to or aggravated by the presence of product ambiguity. If managers better understood the effects of ambiguous product specification, and ambiguous task situations in general, they could recognize and prepare for patterns of task change, leading to more appropriate expectations for their final product.
### Appendix A

#### Category of Behaviours performed by relevant parties to Project Managers

<table>
<thead>
<tr>
<th>Source</th>
<th>Helpful Category of Behaviour</th>
<th>Helpful %</th>
<th>Non-Helpful Category of Behaviour</th>
<th>Non-Helpful %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Manager</strong></td>
<td>To provide clear and specific product requirements</td>
<td>46.1%</td>
<td>To be poor communicator</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>To be an effective manager and funding champion</td>
<td>19.2%</td>
<td>To be unavailable and poorly participate in meetings</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>To be good communicator</td>
<td>19.2%</td>
<td>To lack clarity in defining product requirements</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>To be available for consultation</td>
<td>15.5%</td>
<td>To have unreasonable demands</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>To request changes in scope</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To do poor management and planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total # of examples</strong></td>
<td>26</td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td><strong>IS / IT</strong></td>
<td>To be experienced and knowledgeable</td>
<td>45%</td>
<td>To be unavailable and poorly participate in meetings</td>
<td>31.25%</td>
</tr>
<tr>
<td></td>
<td>To do an effective management and meeting deadlines</td>
<td>30%</td>
<td>To lack commitment and initiative</td>
<td>31.25%</td>
</tr>
<tr>
<td></td>
<td>To be available and participate well in meetings</td>
<td>15%</td>
<td>To do poor budgeting</td>
<td>18.75%</td>
</tr>
<tr>
<td></td>
<td>To do good budgeting</td>
<td>10%</td>
<td>To be poor communicator</td>
<td>12.5%</td>
</tr>
<tr>
<td><strong>Total # of examples</strong></td>
<td>20</td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Operations and Engineering</strong></td>
<td>To be experienced and with good knowledge of the process. To be flexible</td>
<td>69.2%</td>
<td>To be poor communicator</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>To communicate with and understand the customer</td>
<td>15.4%</td>
<td>To be unwilling to cooperate</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>To be good at quality control</td>
<td>15.4%</td>
<td>To overestimate</td>
<td>16.7%</td>
</tr>
<tr>
<td><strong>Total # of examples</strong></td>
<td>13</td>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>
### Appendix B

**Examples from the Interview Data**

<table>
<thead>
<tr>
<th>Example Number</th>
<th>Interview Transcription</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>“Sometimes, you meet budget cut. They just arbitrarily cut money from your budget. And you have to get back to the team and say that they have requested this much funding and we have to try to reduce whatever we originally set as a buffer. If we can’t reduce each party’s spending, we would have to go back to the client group [product manager] and tell them the budget has been cut by this amount, and we can’t continue the project with all the components it requires. So we need to delay the launch time or reduce the scope.”</td>
</tr>
<tr>
<td>2</td>
<td>“We’ll [Project Managers] often identify costs that they [Product Managers] overlooked, or things that need to be done that will impact their business case. There are lots of other costs that have to be factored in. So we can be perceived as being costly, that we add costs. Sometimes they think that they have contribution margins that are fabulous but at the end of the day when you factored in square footage of the company… it adds cost.”</td>
</tr>
<tr>
<td>3</td>
<td>“IS/IT are so enthusiastic that they started to go in the future quicker than we are ready to deal with. So initially, there were some conversations and meetings with them to get them on track because they wanted to talk about those things [i.e. new technology] that would be terrific to them in the future. But I really hate to flag this as negative, … they’re over enthusiastic and we manage to calm them down a bit and say ok, we will get it later and that was fine.”</td>
</tr>
<tr>
<td>4</td>
<td>“Doing requirement analysis usually takes the heaviest time both from me and from the overall project. Because during the earlier NPI, what they do is the high level assessment. Sometimes, things just go vague about part of the process when the team actually gets together and project gets “go”. You have to learn about everything, because sometimes, they change their mind about what they want to do or get system-wise problems while you can not do that, so there is a lot of re-work at that time.”</td>
</tr>
<tr>
<td>5</td>
<td>“They [Product Managers] do not interface with corporate marketing and corporate communication group, when they start initially coming with this new feature or service. Once marketing or communication people take a look at it, maybe they don’t like it, then they [marketing / communication] are very powerful to get that changed, which forces us to change the scope.”</td>
</tr>
<tr>
<td>6</td>
<td>“This is where your Product Manager goes, along the life of the project, “Oh, yeah, and I’d really like this!” And you [Project Manager] go “ok, you want this, then that requires a change control, and let me tell you what it will cost you to make this change. There is a cost and time impact. If you want it, that’s fine, but you have to take it up to the governing boards and make sure it’s signed off”. It’s probably not realistic to say it will be nice if they knew what they wanted from day one and didn’t change their mind, but this rarely happens, so the thing that you live with is change control throughout the project. That’s fine because sometimes, let’s face it, they do come back with things that make a lot more sense. It just means that the team has to step back for a second every time to give a change control and go back and say how does it impact the processes that we’ve looked at, how does it involve the system that we’ve analyzed. You have to go back and reanalyze things to see how it does. It’s like stopping everything for a few minutes and assessing it. The less we have of those the better.”</td>
</tr>
</tbody>
</table>
| 7              | “They [Product Manager] are the last minute type of group. These things always come...
up the last minute. Mostly because of the things that competitors will do, or other things get handed down from higher management, or … market changes. So I tend to have to deal with them changing their mind in the last second. That is not helpful at all. Not at all. The way they change the launch date becomes a bit of an issue. They have from time to time, decided on their own that they would change the launch date on the project and they notify the channels because they do have access to those people without going through us. They change the launch date and notify Operations about the changed launch date. But they did not tell us about the change until a day or 2 days before the original date.”

“They are eager to put everything in scope [i.e. part of the requirements] as much as they can to have a great product. They are eager to have a project with large scope, so in one of our projects we put in heavy system development when a manual process would suffice. But they’re very keen in the large development and the large capital expenditure.”

“Product Managers may decide to bundle additional service in my project because they know they can’t get resources for this minor service or because of their budget restriction. But they can not initiate another project, or they know they would have problems to get resources, or if they don’t do that project soon enough, they would not get the revenue that they need for that year, so they might just bring the whole feature into your project. Sometimes, Product Managers have got 2 projects at hand, and they would try to get both of them deployed sooner, so they would bundle 2 into one.”

“I have a better understanding about the billing system because of my previous role as SP [solution prime, i.e. project manager’s assistant]. When I was a part of the team, I built this new kind of model for the billing system. So there’s a lot of information there that I know that she is not really aware of because either they save things in a bad way, or they don’t really use them. But I know it’s there. And from time to time, it was actually a project that we started and I actually didn’t get as involved in because I was on the other thing at the time. But by the time I did get involved, they had gone this other route that cost about 5 times what is really needed just because of a lack of awareness of what the system could do. And I had to win that back into the right path with one fifth of the cost and that actually served our purpose better.”

“… Be clear in EBT [executive briefing template], it would be better for them to define their requirement. Not long ago, the billing system was just a kind of big piece somewhere, nobody really understood how it worked. There’s been a lot of work going on, number one changing the billing system and getting people to understand that, but also taking that knowledge and sharing it with the marketing team so that they understand how it works. That helped them to define for us what it is they want to do. So, based on all that work that happened, EBT is gotten better. The EBT they send us now is always very clear and understandable. Now they understand what kind of rule they could lay out. So, part of their specification is better because they are able to put it in a language of billing, in a way. Before they didn’t understand what we could or couldn’t do, there are so many things you can do and there are so many things you couldn’t do in the system and understanding where the line is drawn really helps us because it shortens the time frame.”

“Pricing is not appreciated when an assessment is put together. They [Product Managers] do not appreciate how much it takes to do these things… they question it strongly. They think this plan is too expensive not recognizing the fact that an external development team is building a tool, which is automatically going to cost more since you are dealing with contractor rates and we have infrastructure costs…”

“All this is for building contingency because usually the budget they give NPI is the
entire budget you’ve got. And usually scope changes happen. When you start a project, you usually quote more, because you don’t know whether you could get more money later or it would cost more than your estimate. I did not get involved in the initial budget assessment, it is the SP and the people SP is working with [IS/IT, operations] and they would give SP what they feel is the amount of funding to do that job, but again it is very-very high level. But that’s the amount that got approved at that time. So, basically, each of these groups would pad a little bit because sometimes, things would change.”

“They [corporate purchasing] are helpful in negotiating the contract, and bringing knowledge to the group. They are the interface to the legal department. So they bring that knowledge to the table. For example, when we are dealing with the application vendor, there was a licensing discussion. The vendor brought the price to the table and I didn’t know whether that was a reasonable number or not. The corporate purchasing would go into comparing that to similar type of applications, then they do excellent background research on the vendor company to evaluate price offered by vendor and other information about the credit and stability of the vendor. They set up the corporate prices”

References


