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Examining Customer Focus in IT Project Management: Findings from Irish and Norwegian Case Studies

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Abstract. While an acute, continuous focus on customer needs is often cited as a key benefit of agile approaches, very little research has examined the customer focus construct in an agile project environment, or looked at the implications or recommendations for project managers. We draw on contemporary theories on customer focus to develop a framework for understanding customer focus in an agile project management context. This framework is applied to cases in Ireland and Norway and the results suggest that while agile approaches appear to increase customer focus, this is by no means guaranteed. In fact there may be significant challenges and problems for project managers to overcome. For example, new communication issues with customer proxies may impair understanding of customer needs and requirements. The project manager needs to consider the identity, location, perceived personality of the customer, and the team's prior experience with the customer, all of which this research shows can affect the customer focus of the agile team. From this research, a new, empirically validated agile development customer focus framework is presented, providing project

managers with a set of factors to be considered in becoming a truly customer focused agile IT project team.

Key words: Agile Systems Development, Customer Focus, Agile Project Management.

1   Introduction

There is general agreement in contemporary information technology (IT) project management research that a good working relationship with the customer is key to achieving project success (Beath and Orlikowski, 1994). Yet, despite a number of efforts at better understanding this relationship, the interaction between customers and the development team remains a particular challenge for software development managers (Pikkarainen et al., 2008). IT project managers face many difficulties in determining how best to facilitate and manage customer participation to increase customer satisfaction (Keil and Carmel, 1995, Lees, 1987).

In an effort to help address this issue, agile project management (APM) principles and methods such as the agile manifesto (Agile Alliance, 2001) and Scrum (Schwaber and Beedle, 2002) were introduced. The manifesto stresses the importance of customer collaboration and satisfying customer needs with the first principle stating that: "our highest priority is to satisfy the customer through early and continuous delivery of valuable software" (Agile Alliance, 2001). Focusing on satisfying customers is one of the key drivers behind the entire agile movement (Agile Alliance, 2001, Highsmith, 2004, Shalloway et al., 2009). Yet, while there is evidence to suggest that 65%-90% of software development teams use ASD methods to some degree (Ambler, 2007, Version-One, 2009), it is surprising to note that the concept of customer focus is not well developed, nor has it been rigorously studied within the APM field.

Studies within the fields of information systems development (ISD), management, and marketing have shown that customer focus is a polymorphous, multidimensional concept, with many contributing sub-constructs (Ahire et al., 1996, Gulati and Oldroyd, 2005, Mohr-Jackson, 1991, Parzinger and Nath, 2000, Sousa, 2003), yet studies in APM generally tend to focus on one aspect of the customer-team relationship. For example, studies have explored customer communication (Korkala et al., 2009), customer satisfaction (Mann and Maurer, 2005), customer involvement (Kautz, 2009) and interaction between the customer and the development team (Hanssen and Fægri, 2006, Martin et al., 2009). While these studies are valuable, customer focus involves more than any one aspect of the customer –

team relationship. Given that satisfying the customer is a fundamental goal of ISD, it is not surprising that previous researchers within ISD have called for more of a focus on the integration of the customer focus construct as viewed from a marketing or management perspective and as viewed from an ISD perspective (Albert et al., 2004, Stylianou et al., 1997). The management and marketing literature shows that customer focus involves activities, practices and processes that have, until now, been overlooked in the APM literature (Dybå and Dingsøyr, 2008). This current paucity of research within the APM field results in a fragmented understanding of how APM contributes to an increased customer focus. Indeed, many reports and claims within the field are anecdotal and do not provide much specific guidance in this regard (Abrahamsson et al., 2009, Conboy, 2009). Given the importance of the customer in ASD, we feel that there is a need for more rigorous research within APM on the customer focus construct. To address this gap in the APM literature, we developed a customer focus framework and used it to examine the customer focus practices of seven ASD project teams within two case sites. For this research, we define customer focus as the degree to which an agile team focuses its activities, practices and processes on achieving value for their customer. Specifically, the objectives of this research are to:

    i.   identify broader customer focus dimensions for use in an ASD environment;

    ii.   develop and test a framework for the evaluation of customer focus in ASD;

    iii.   develop an understanding of how ASD teams achieve a customer focus.

This research makes a valuable contribution in three principal ways. Firstly, it draws on literature from disciplines outside IT project management, where the concept and theories of customer focus are more established and well grounded, and applies this more established literature base to the IT domain. Secondly, it provides detailed insights for IT project managers who wish to gain a better understanding of the practices and factors impacting and contributing to customer focus. Finally, it begins to fill the gap in the APM literature on the customer focus construct by providing a more holistic view incorporating different interwoven dimensions.

The next section of this paper outlines the theoretical development of the customer focus construct and introduces the conceptual framework. Section three introduces the research sites and research methodology. Section four highlights the findings. Section five is a discussion with a revised framework and finally section six concludes with implications for both industry and research.

2 Theoretical Development

To begin, we must clarify what is meant by "customer" in the sense that it is used in this paper. "Customer" and "end user" are terms often used interchangeably in the IS literature and in many studies the end user has become synonymous with the customer. For the purposes of this research we use the term "customer" to include customer proxies or product owners representing the customer and to mean the entity or representative of that entity that ordered or paid for the product. The customer is not necessarily the end user. A customer in an ISD project may have many roles. They may be a user or may depend on the output of the system. They may prepare input for a system, they may decide on the need for a system, or approve the purchase of a system. In this respect the customer is a larger term than a user.

Customer focus is a multi dimensional construct that has its origins in the management and marketing disciplines (Gulati and Oldroyd, 2005, Kumar et al., 2008, Mohr-Jackson, 1991, Sousa, 2003). The concept can be traced back to the management literature of the 1950s when Drucker (1954) argued that customers focus should be the main strategic aim of any organization and that the customer should be the main reason for the existence of the organization. Others have subsequently extended upon this core idea creating what is now known as the marketing concept (Kohli and Jaworski, 1990, Narver and Slater, 1990) and a widespread belief that customer relationship activity is an essential part of everyday management practice (Coltman, 2007). Customer focus is arguably more important in today's operating environments where having a customer focus is regarded as being vital to success in the modern market place (Baldrige, 2010, Day, 2003, EFQM, 2010, Mohr-Jackson, 1991, Shah et al., 2006). Yet, despite the importance attached to customer focus, there remains some confusion surrounding the construct. Managers and executives are still unsure about what it means to be customer focused and how to become customer focused (Appiah-Adu and Singh, 1998, Day, 2003, Gulati and Oldroyd, 2005, Seybold, 2001).

While the literature and theoretical grounding of the customer focus construct is relatively new and quite sparse in APM literature, to develop our research framework we can draw on insights from management and marketing, where the concept of the customer is more mature. There is a long tradition of considering ISD from the perspective of management and marketing and applying insights, theories and frameworks from these reference disciplines to examine and understand ISD issues (Albert et al., 2004, Slaughter et al., 2006). We began our literature review using key search words such as *customer centric* and *customer focus* within the fields of management and marketing. We found that studies within these fields use various sub-constructs when measuring customer focus. Mohr-Jackson (1991) conducted over 50 interviews with corporate executives and found that customer focus was achieved through knowledge of the customer, their

requirements and their current and future needs. Sousa (2003) found that customer focus practices are contingent on an organization's strategy and recommends that individual practices are closely aligned to form a single coherent customer focus practice. The study used the sub-constructs: customer relationships, customer involvement, customer knowledge, and customer feedback to measure customer focus. Gulati (2007) found that coordination, cooperation, capability development and connection with the customer leads to customer focus. Kumar et al. (2008) found that a customer focused sales campaign significantly increased profits and return on investment. They used the knowledge of the customers' needs as a measure of the customer focus of the sales team. Customer focus sub-constructs used in these studies are all incorporated into the broad constructs within the conceptual framework for this study, and will be discussed in more detail in the relevant section.

Previous studies in IT project management research have drawn on these management and marketing insights and identify several individual streams of research that form the sub-constructs of the customer focus construct. Ravichadran and Rai (1999) developed a customer focus construct as part of a total quality management (TQM) framework for ISD. Based on a study of 123 respondents they found support for the validity and reliability of using three scales to measure customer focus, namely: (1) active participation in determining system requirements, (2) identifying input needs in developing test plans, and (3) identifying output needs in developing test plans. Parzinger and Nath (2000) collected data from 247 software development sites and determined that customer focus involves actively seeking customer inputs to determine requirements, increased employee interaction and personal contact with customers, and customer involvement in the product design. Issac et al. (2004) conducted a review of the manufacturing, software and service industry literature and held discussions with software professionals, thereby arriving at the view that customer focus involves: receiving feedback as the basis of quality improvement, customer involvement in various stages of the project, and satisfying the explicit, implicit and delighting needs of the customer.

Our literature review shows that there is no widely accepted customer focus model. Different sub-constructs are used in different contexts within management, marketing and ISD. The conceptual framework for this study was developed by amalgamating different uses to develop four reasonably distinct sub-constructs that cover all uses discovered during the literature review (see Figure 1).

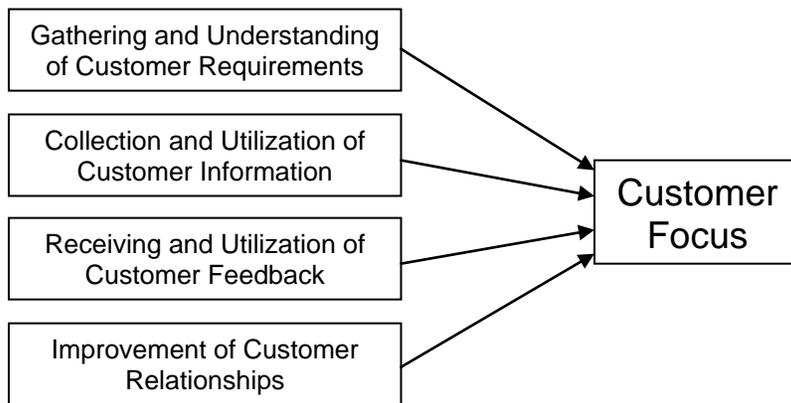| Gathering and Understanding of Customer Requirements |
| Collection and Utilization of Customer Information |
| Receiving and Utilization of Customer Feedback |
| Improvement of Customer Relationships |

Customer Focus

Figure 1 Conceptual Framework

We do not claim that these are the only contributors to customer focus as it is somewhat unclear what role contextual and external factors have to play (Lin and Shao, 2000). For example Gulati's (2007) findings that employee empowerment and employee capability will impact the customer focus of a team concur with Sousa's (2003) findings which show that customer focus is contingent on organizational strategy. However, for this study our concentration is on the customer focus practices of ASD teams. While organizational strategy can influence customer focus (e.g. How much emphasis does the organization place on customer focus? How empowered are the employees? What calibre of employees is employed by the organization?), organizational strategy is an area the ASD team has limited control over and examining its impact on customer focus is outside the scope of our research.

The conceptual framework developed is used to guide our data collection and aid in the analysis of the findings. The four major sub-constructs are now discussed in more detail, firstly showing how they have previously been used within the management, marketing and ISD literature, and secondly how they relate to ASD.

2.1 Gathering and Understanding of Customer Requirements

The first stream of research leading to customer focus is the gathering and understanding of customer requirements. Requirements definition is a critical activity in software development, but getting customer requirements "right" is difficult. As famously articulated by Brooks (1987), "*The hardest single part of building a software system is deciding precisely what to build. No other part of the conceptual work is as difficult as establishing the detailed technical requirements ... No other part of the work so cripples the resulting system if done wrong*". There are numerous technologies and techniques used

to elicit and analyse customer requirements (Jwo and Cheng, 2010). Dieste et al. (2008) conducted a systematic literature review and found 43 different requirements elicitation techniques used in both ISD and marketing. They found that unstructured interviews are the primary technique for gathering and understanding requirements. They use unstructured interviews to mean any kind of unstructured interaction between the developers and the customer. Ovaska et al. (2005) conducted an in-depth study on a large e-commerce platform project. They found that understanding requirements required continuous negotiation among project participants as shifts in attitude and expectations of the systems changed. Neil and Laplante (2003) conducted a survey of 194 industrial practitioners and found that 50% of respondents used scenarios or use cases to elicit requirements. Their findings contradict Dieste et al. somewhat but they did find that interviews and informal interaction are also a key technique in understanding customer requirements. They also found that 52% of respondents believed that their organization did not do enough requirements engineering.

Agile methods rely heavily on inputs from the customer rather than having a predefined set of requirements (Beck and Andres, 2005, Highsmith, 2004). Agile requirement practices typically involve stakeholders writing simple user stories describing the user's requirement (Maiden and Jones, 2010). The agile teams are expected to work closely with the customer to gather ongoing requirements throughout the project duration, obtaining timely feedback and information. However, customers' insufficient knowledge of the requirements due to the complexity and size of the system poses significant challenges (Cao et al., 2009, Ovaska et al., 2005). These challenges are even more pronounced when customers are not available or not willing to commit to the project (Fitzgerald et al., 2006). There is some concern about agile requirements gathering practices supporting some activities at the expense of others. For example, Cao and Ramesh (2008) found that agile requirements engineering practices resulted in inappropriate architecture, and that agile projects neglected important non-functional requirements related to performance and security. Still, agile techniques used to gather and understand changing customer requirements results in improved understanding of customer needs and the ability to adapt to the evolving needs of today's dynamic environment (Lee and Xia, 2005). Although there are practices, approaches and techniques used for requirement gathering and understanding in ISD, little empirical data exists and researchers have called for more research into differing techniques in use in different contexts (Jwo and Cheng, 2010, Neill and Laplante, 2003).

2.2 Collection and Utilization of Customer Information

The second stream of research viewed as a major contributor to customer focus is the collection and utilization of customer information. The management, marketing and customer relationship manager (CRM) literature place great emphasis on collecting and using customer information. For example, Coltman (2007) conducted field interviews and surveyed 91 executives and found that successful organizations collected information and proactively focused on unarticulated or latent customer needs. Collecting customer information is distinct from customer requirements in that customer information may consist of data not explicitly expressed by the customer during the requirements gathering phase. For example, having information on the customer's cultural norms may shed insight into the customer's latent or unarticulated needs (Coltman, 2007, Deshpande et al., 1993). Gulati and Oldroyd (2005) suggest a four-stage process for understanding customer needs. The first stage is the identification and collection of information on customers. This is then consolidated and analysed to gain an insight into customers from past behaviour (Liang and Tanniru, 2006). This insight is then used to develop a likely understanding of future behaviour which is used to provide more efficient responses to customer needs. To achieve the level of coordination and cooperation required from a customer focused organization, the correct structural mechanisms, processes, and incentives need to be in place. These will allow employees to focus on the customer by harmonizing information and activities across units, and by encouraging people in all parts of the company to work together in the interest of customer needs. Gulati (2007) found that successful organizations had specific, centrally located, customer knowledge repositories which different teams could use to collect customer information. These knowledge repositories are central to sharing customer knowledge, which is critical in utilizing the cognitive resources within a team (Srivastava et al., 2006).

Collecting information on the customer is also recommended in ISD and Zultner (1993) suggests that having customer information will help the team understand the customer's problems and opportunities, and develop high value software from the customer's perspective. While early and continuous interaction with the customer is emphasized in ASD, little research exists regarding the collection of customer information prior to the start of the development process. ASD teams are expected to interact with the customer from the first day of the process and deliver a working part of the system as soon as possible (Schwaber, 2004).

2.3 Receiving and Utilization of Customer Feedback

The third stream of research contributing to understanding customer focus is the receiving and utilization of customer feedback. This is distinctive from the other streams in that feedback is received from the customer into the

product development process as opposed to simply at the start. Feedback is used for training if required and to improve processes where needed. Gulati (2007) calls this "capability development", and it is a means of ensuring that an organization has enough people that have the skills to deliver customer-focused solutions and also has the correct processes in place to deliver those solutions. Bragge and Merisalo-Rantanen (2009) emphasize the importance of customer feedback to improving products and processes. Feedback systems should capture both formal and informal complaints as well as hidden needs and novel ideas (Fundin and Bergman, 2003). Teams can actively solicit feedback from specific customers, they can passively solicit feedback from customers in general or they can receive unsolicited feedback, all of which are useful in identifying ideas for improvement (Fundin and Bergman, 2003, Sampson, 1996, Sampson, 1998).

Gathering feedback is easier in ASD than in other traditional development methods or in other fields such as manufacturing because in ASD customer feedback is continuously received through reviews and retrospectives. Constant and timely feedback is critical in ASD (Chamberlain et al., 2006, Lindvall et al., 2004). However, gathering customer feedback is not useful unless the results are made available to functional areas of the organization (Ahire et al., 1996). In an ASD team, feedback can be communicated to team members through a number of mechanisms such as daily scrums, planning meetings, iteration retrospectives and reviews, as well as ongoing meetings and conversations with customers and other stakeholders (Moe et al., 2010). Bragge and Merisalo-Rantanen's action research study on web-based information systems highlights the need to motivate customers to provide quality feedback. They discuss the difficulties with mandatory customer participation in providing feedback, highlighting the need for customers to be involved and motivated to provide feedback. They also call for more research into the difficult problem of acquiring quality feedback in different ISD contexts.

2.4 Improvement of Customer Relationships

The fourth stream of research contributing to customer focus is the improvement of customer relationships. Developing relationships is different from the other three sub-constructs of the customer focus framework in that relationships are developed on a human level and involve the dealings and feelings between people (Collins, 2005). The management literature suggests that to improve relationships customers should be involved in the product design process and be an integral part of the development process, influencing the way the system is conceived, developed and disseminated (Liang and Tanniru, 2006, Parzinger and Nath, 2000, Sousa, 2003). This involves cultivating customer relationships through direct customer contact, with face-to-face communication seen as the optimum communication type

for ASD (Pikkarainen et al., 2008). Having the customer involved from project initiation through prototyping, implementation and reviews and being kept aware of the project status throughout the development process is argued to lead to better systems (Balka, 2010, Kyng, 2010, Tiwana and Keil, 2006). Molokken-Ostvold and Furulund (2007) studied 18 ASD projects and found that daily communication between the developers and the customers leads to less effort over-runs. Other studies have found that the customer or their representatives play an informative, consultative and participative role in ASD (Hanssen and Fægri, 2006, Kautz, 2009, Misra et al., 2009, Svensson and Host, 2005).

However, customer involvement alone does not ensure a successful project (Jokela and Abrahamsson, 2004) and the issue is the effectiveness of the mechanisms through which customers are engaged with and involved in the development of the system (Wagner and Majchrzak, 2007). Previous studies have pointed out that a distinction must be made between participation and involvement. Ives and Olsen (1984) show that involvement is influenced by the characteristics or personality of the customer. Barki and Hartwick (1994) agree that personality influences customer involvement and they separate involvement (the belief that the new system is both important and personally relevant) from attitude (a psychological state reflecting the affective or evaluative feelings concerning a new system) and participation (a set of behaviours or activities performed by the customer). Grimstad et al. (2006) found that the availability of competent customers and capable decision makers are important ASD success factors. The short iteration cycles in ASD increase the customer's awareness of a project's status allowing for regular prioritization of requirements and continuous feedback to the development team.

Table 1 provides a summary of these four streams of literature that contribute to the customer focus construct.

Customer Focus		
Sub-Construct	Supporting Literature	Description
Gathering and Understanding of Customer Requirements	(Beck 2005; Highsmith 2004; Lee and Xia 2005)	Customer requirements are received in a timely manner; Teams receive sufficient and high quality customer requirements.
Collection and Utilization of Customer Information	(Gulati 2007; Sousa 2003; Zultner 1993)	Information is collected on customer needs; Analysed information is available to the team; Forward looking information on customer needs is available; Teams have incentives to share customer knowledge; Mechanisms exist to disseminate knowledge and respond to customer needs.
Receiving and Utilization of	(Ahire et.al. 1996; Gulati,	Teams receive customer feedback; Customer complaint information is available to teams;

Customer Feedback	2007; Parzinger and Nath 2000)	Feedback is used to train team members; Feedback is used to improve processes.
Improvement of Customer Relationships	(Kautz 2009; Sousa 2003; Svensson and Host 2005)	Customers are involved in the development process; Direct customer contact takes place in the form of meetings and on-site visits; Customers are constantly aware of the status of the project.

Table 1 Key Customer Focus Practices

3 Research Methodology

Case studies are seen as a very suitable approach when conducting exploratory research in a natural setting (Benbasat et al., 1987, Miles and Huberman, 1994). We chose a case study methodology for this reason, and by studying the teams in their natural environment we gained a deeper insight and understanding of the customer focus of ASD teams. We used what Yin (2009) calls a two-case embedded design. Using two cases resulted in more powerful analytical conclusions than would have come from using a single case alone. A two-case design allows for replication logic; that is, the analytical conclusions from both cases can be compared to produce more robust conclusions.

3.1 Site Selection

We used what Miles and Huberman (1994) call a comparable case selection strategy. In selecting the potential case sites for this study we outlined a set of criteria that had to be met:

- The Scrum methodology and all underlying practices must be used. Scrum was chosen because the methodology has a managerial focus and is well suited to research on APM issues. While methods are often distributed and communicated in different ways (such as through manuals, research papers, consulting, mentoring, etc.), in the interests of consistency this study refers to the version of Scrum as documented in Schwaber and Beedle (2001).

- Projects with significant, ongoing customer involvement were required given the nature of the study. In many cases a customer is disengaged, simulated or entirely non-existent, so we were conscious of the need to avoid such situations.

- Significant, in-depth access to both developers and team leaders was required. ASD encourages self-managing teams and we wanted to

ensure that we met interviewees that represented the entire team's customer focus.

From a list of potential sites we chose two case sites that satisfied the criteria and were the most enthusiastic about participating in our research.

Case A is a large multinational operating in the financial services sector. Their ISD division in Ireland had implemented the Scrum methodology within the past three years and their Scrum teams built customized software applications for internal clients. The organization offered us access to all relevant and required information which Yin (2003) argues is crucial to doing good case study research.

Case B is a large multinational operating in the oil and gas sector. Their ISD division, located in Norway, had implemented the Scrum methodology within the past three years and also developed customized software solutions for internal clients. As with case site A, the organization offered us access to all relevant and required information.

3.2 Data Collection

Data were collected over a one year period from February 2009 to February 2010. The researchers were given excellent access to all teams involved in the study. The team leaders gave guided tours of the facilities within the sites, including offices, conference rooms, meeting rooms and work areas. The researchers attended daily team meetings, iteration sessions and training sessions.

Project Description	Customer	Number of Interviews and Organizational Roles Represented	Average Interview Time
Ireland (Case A)			
A) Back end to mid tier web service	A technology group building on top of the team's technology	1 project manager and 2 team members	43 Mins
B) Customized project management tool	Proxy customer group representing 20 business unit project management offices	1 project manager and 2 team members	56 Mins
C) Trading system maintenance application	A senior developer team	1 project manager and 2 team members	40 Mins
Norway (Case B)			
D) Secure collaboration technology platform	3 organizational departments each represented by a product owner	1 project manager and 2 team members	1 Hour
E) Organization's Intranet	Communications department representing the entire organization	1 project manager and 1 team member	58 Mins

F) Organizational services provider platform	Global business services department represented by a defined set of product owners	1 project manager and 1 Scrum master	44 Mins
G) Financial accounting system	Product owners representing organizational areas	1 project manager, 1 scrum master and 1 team member	64 Mins

Table 2 Interviewees Profile

To establish the reliability and validity of the case study evidence we followed the three principles of data collection outlined by Yin (2003):

- *Use multiple sources of evidence:* Data was collected through on-site observation at iteration meetings, training sessions and daily scrums. Data was also collected through a review of documentation, workshops, on-site observation at iteration meetings and daily scrums, formal and interviews, and a continuous dialogue that was established with key informants through emails, phone calls, site visits and conference meetings. In total 19 formal interviews were conducted (*Table 2*). In case site A, three different Scrum projects were studied and 18 site visits were conducted. In case site B, four Scrum projects were studied. Due to the time and financial costs involved with site visits, the formal interviews were carried out during the course of one month (October 2009).

- *Create a case study database:* All formal interview transcripts were recorded, transcribed and imported into QSR NVivo for coding. Notes taken during each interview, documents, interview protocols and narratives were all stored in this NVivo database.

- *Maintain a chain of evidence:* A clear link was established between each step of the process. The case study objective was linked to the interview protocol questions, which are linked to the evidential sources in the NVivo database, which are in turn linked to the case study reports provided to the participating organizations and finally to the findings discussed in this paper.

3.3 Data Analysis

Codes are tags or labels for assigning units of meaning and are useful in providing structure to the data collected and for analyzing the data (Miles and Huberman, 1994, Rubin and Rubin, 2005, Stake, 1995, Wengraf, 2001). Data was initially coded around the four sub-constructs of the conceptual framework (Gathering and understanding of customer requirements; Collection and utilization of customer information; Receiving and utilization

of customer feedback; Improvement of customer relationships) which provided a list of "seed categories" (Miles and Huberman, 1994). As suggested by Silverman (2005 pp. 152) data analysis began as soon as the first interviews were conducted. Interviews were transcribed as soon as possible after the interview took place. Notes taken at each interview describing the interview setting and observations made by the researcher during interviews were reviewed and attached to the interview transcripts. New questions arose which were discussed and documented. Each case was revisited to see if the data confirmed the proposed relationship, and if they did, to use the cases to improve understanding of the underlying dynamics.

As suggested by Miles and Huberman (1994) and Yin (2003), we were careful to corroborate the interpretations made during our enquiry. In our coding we were aware of potential differences in the actual versus stated practices and therefore considered multiple kinds of information (interview transcripts from multiple informants, observations at stand-up and iteration meetings, supporting documents, etc.) to help identify and corroborate the actual practices used by the ASD team. For example, one team member who was not involved in developing the requirements document believed that it was not well thought out and expressed concern at his lack of understanding of it. We were able to corroborate this both by examining the requirements document and reviewing the history of the planning tool used by the team. The history of the planning tool showed that the user stories actually developed bore little resemblance to the estimations and user stories described on the initial requirements document. Observations at daily stand-ups and iteration meetings also showed that there were large discrepancies between the document the team were working off and the actual user stories being discussed at these meetings. We also checked for representativeness by examining claims made across participants. Responses by team members such as reports of their experience with their customers were checked against the reports from other team members and the project managers or Scrum masters. Provisional findings were also discussed with key informants in each of the case sites and a final case study report was written up for each interview site. This helped to further corroborate the findings. A sample of the interview questions and coding process is included in the appendices. The next section presents the findings of the research.

4 Findings and Analysis

The customer focus of the cases studied is discussed under the four sub-constructs outlined in the theoretical development section of this paper. As we progressed through the research and data collection we identified other factors impacting how these four sub-constructs are operationalized. These factors are also discussed in this section.

4.1 Gathering and Understanding of Customer Requirements

In case A, an upfront requirements document guided the development process. None of the developers interviewed were involved in gathering these requirements and many felt that the requirements document was poorly conceived. Clarity was sought through the customer proxy when needed. However, developers were occasionally unhappy with the clarity provided by the customer proxy regarding complex queries. One developer stated: *"As helpful as the proxy was, having a real customer was definitely something we missed. The proxy often responds hesitantly to queries or with "I'll come back to you when I find out" and I don't think it works long term."* Five of the six team members interviewed in this site expressed concern at the timeliness and quality of the requirements they received. They all felt that either the customer proxy or the team that initially developed the upfront requirements document did not communicate well enough.

Case B was similar whereby a large list of requirements was gathered from stakeholders up front. The team then worked with the product owners to refine these requirements throughout the development process. This was perceived as sufficient except in cases where there is a concern about the role of the product owner. Two Scrum masters and three team members expressed concern that the product owner filtered requirements from the customer before communicating them back to the team. They believed the product owner was not appropriate and did not communicate or understand customer requirements correctly. One project manager explained why the team were not allowed to interact directly with customers: *"The product owner, not customers, represent the business needs, so it's really about channelling this to one person to ensure the entire business needs are served, and not just those of one aspect of the business".* When team members worked closely with the customer to develop the project roadmap, they felt that they had a good understanding of the requirements and could communicate easily with the customer. For example in project D where team members were involved in developing the project roadmap, one developer on this team commented that: *"from the beginning there was a lot of collaboration between us and the customers, people speak clearly about what they are concerned about".* In this instance the team felt that being involved in developing the roadmap with the customer helped them with understanding the customer's requirements.

4.2 Collection and Utilization of Customer Information

Case A has a number of collaborative websites but none specifically dedicated to the collection and dissemination of customer information. There are no formal mechanisms, structures or incentives in place specifically for

gathering and sharing customer information. Teams receive some training on the business background of their customer which was regarded as helpful. Information on customers' needs was collected before the project development process began. Although there are no specific customer silos in this case site which developers could utilize, the team felt that they were somewhat aware of future customer needs. One developer, when asked if forward looking information is available, responded: *"To a certain extent [Yes], because we see the thing we are developing as being a product, so it's not specifically for this customer. 90% of what we are doing is to satisfy customer A but then we've also got to remember the fact that there are other customers down the line"*.

In case B a large amount of data is collected and analysed during the project initiation phase, before the development teams are formed. A project roadmap is outlined and some employees involved in this phase then become part of the development team. This provides a smoother transition from the project initiation phase to the development phase when the teams are formed. One project manager highlighted the benefits of having all customer information *"not only on paper but also brought by people that were in that [initiation]phase"* noting that *"otherwise it would have been really difficult"*. Projects often have many different customers, each represented by a product owner. There are no specific customer repositories. When there is one main customer, the teams may spend several months doing analysis and in this case the customer's needs are analysed and information on future needs is readily available.

4.3 Receiving and Utilization of Customer Feedback

In case A, feedback is given through weekly demonstrations and monthly retrospectives with the customer proxy and occasionally other members of the customer team. Five out of the nine interviewees felt that receiving feedback was not prioritized highly enough. This is explained somewhat by the fact that three of those were from a project where customers were not ready to use the system and therefore had little information to feed back.

In case B work was presented to the customer and product owners on a monthly basis. This generally helped the team focus on their customer's needs. However, concern was expressed over the small amount of time dedicated to the sprint review meetings. One Scrum master suggested that *"There were reviews, and there was a little discussion about process but not very much [feedback]"*.

4.4 Improvement of Customer Relationships

In case A, agile practices such as regular software demonstrations and iteration retrospectives were attended by the customer and this helped improve customer relationships. In project B, the project manager highlights the importance of improving customer relationships: *"We have built up a relationship with the customer and what's changed is the frequency they see what we've done and our ability to get feedback from them. So once a week now if we have stuff to show them what we've done, we get the opportunity to demonstrate it"*. One project developing back-end to mid-tier web services did not develop a good relationship with their customer. This was mainly due to the fact that their platform was being built in anticipation of various organizational functions building user interfaces on top of their technology at a future date. High level product visions were outlined every month but the development team did not have any meaningful interactions with their customers. The project sponsor was aware of the project progress but as the expected customers were not ready to integrate their user interface with the technology being built, there was little ongoing relationship development.

In case B, iteration retrospectives and regular software demonstrations also ensured that customers were involved and aware of the project progress. All teams had regular interaction with the customer. One project manager highlights the positives of using Scrum saying that it was the first time he has seen such *"a close relationship"* and highlighted the positives of this: *"the customer is actually participating in the demos, in the retrospective meetings; he has been very hands-on and given direct feedback on solutions, what worked, what didn't work and so on"*. With the exception of one project in case A, both case sites followed agile practices such as iteration retrospectives and demonstrations which always included the customer. These practices when followed ensured that the ASD team developed a strong customer relationship as outlined by our conceptual framework.

Our findings suggest that the four sub-constructs of the customer focus framework are major contributors having a customer focus. However, our study also finds that there are a number of other moderating factors. We identified four other factors that moderate the impact of the four sub-constructs on the customer focus of an ASD team. These moderating factors are the identity of the customer, the location of the customer, the customer's personality as perceived by the team, and the prior experience the team have with working with the same customer.

4.5 Customer Identity

In case A, there was some ambiguity as to the identity of the customer. One project manager, when asked who the customer was, said: *"That's a difficult question. I guess this other group are our customer, our direct customer"*. Another project manager when asked the same question answered: *"I'm not sure, how would you like me to define the customer?"* The confusion

stemmed from the fact that two of the projects studied, project A and project C, were developing technologies which were being used by other development teams. These other development teams were in effect the customers of the teams we examined. However, the end users of the products were the financial analysts and traders and it was product owners from financial services and the trading department that ordered and paid for the products. This resulted in confusion as there was no clearly identified customer proxy with whom the teams we studied could interact. This lack of a clearly identified customer led to what one project manager described as: *"a continual struggle on this project"* as *"the opportunity to integrate and get feedback from our product isn't there as much as we would like"*.

The second case was less ambiguous. Here, the customer was clearly identified as the product owner and they had the role of the customer's representative. Team members were clear about who represented the voice of the customer and there was no confusion when it came to identifying the customer of any project. One developer highlighted the benefits of this: *"[the customer] speaks clearly about what they are concerned about and what they like, so it's more directing us going forward"*.

4.6 Customer Location

We found that an on-site customer was easier to communicate with than one that was off-site. One example from case A is where a team member suggested there was not much synchronization between the team and the customer due to the fact that the customer was not based on-site, stating: *"if we were based together then we would be more inclined to get together and work out stuff like that"*.

In case B when the customer was on-site, the communication appeared to be more efficient with one developer stating: *"Sitting on the same floor it was much easier; when they needed help from us they could get it straight away and if we needed clearance or whatever we could go over to them"*. In both case sites there was a sense that being able to either formally or informally meet and discuss issues with the customer was much easier and more efficient when the customer was on-site.

4.7 Perceived Customer Personality

The perceived personality of the customer is also shown in this study as having a direct impact on the customer focus of the agile team. Developers within both sites commented on the effectiveness of the customer proxy in handling requirements and giving feedback. Some developers found that the proxies were, in Case A, *"very involved, very good and very helpful"* or in Case B, *"very hands on",* while a project manager highlights what was found across both sites: *"we have been lucky to have [a good working relationship*

with the customer] ... it is not the default that everyone is this committed". Several developers from both sites commented on issues they had with some of their customer proxies, some of whom they described as being *"apathetic", "disinterested",* and *"not knowing what they want"* or *"completely absent when it comes to getting feedback"*. From this study it is apparent that how the team perceives the customer plays an important role in the customer-developer relationship.

4.8 Teams' Prior Experience with the Customer

Relationships are developed over time and the team's prior experience with the customer and the customer's domain appears to have an impact on the customer focus of the team. For example, team members from project B in case A worked with a customer proxy group who had 3-4 years experience with the customer (the project management office). They represented the actual customer team and gave the requirements to the development team. However, as the project matured and the team gained experience with the actual customer, developers felt they *"got to a stage where it was more efficient to deal directly with them and show them what we were building"*. This highlighted the fact that as the team gained experience with the customer the relationship improved and they were less reliant on the customer proxy group. An example from case B is where a Scrum master stated that since they had "*been involved in the previous product as well, [they] have a pretty good understanding of the business"*. In both of our case sites, the ASD teams, rather than working on ongoing projects such as maintenance or support projects, worked on projects that had a beginning and an expected end date. The implications from this study are that the teams acquire, retain and use knowledge from previous projects on either the customer or the product. Therefore, to be a customer focused ASD team, the previous experience of the team should be taken into consideration.

Table 3 shows how the four moderating factors affect the impact the sub-constructs have on customer focus. For example, our study shows that when a customer was clearly identified, the ASD team believed they were more customer focused. They knew exactly who to contact to gather requirements and receive feedback, who to collect information about and who to contact when project related matters required clarification. On the other hand, a team was less customer focused when, for example, they perceived the customer to be non-committed to the project. The teams found the requirements were vague and the feedback was unhelpful. The customer provided them with little information about their business domain and was apathetic when it came to being involved in the development process.

	Customer	*Customer*	*Customer*	*Customer*

	Requirements	*Information*	*Feedback*	*Relationships*
Identity Positive Impacts	Teams are confident the requirements are from the correct source	Teams identify who they need to collect information about; Teams identify who they need to collect information from	Teams are confident feedback is from the correct source	Teams know who to contact for project related matters
Identity Negative Impacts	Unclear requirements Lack of confidence in requirements	Confusion as to who the teams should collect information about and from	Uncertainty around feedback; Feedback from incorrect sources	Uncertainty surrounding who the team should focus their development efforts on
Location Positive Impacts	Timely collection of requirements; Deep understanding of requirements through realtime resolution of unclear requirements	Close source of information; Untangible benefits such as observable customer behaviour	Timely and face to face feedback; Good quality feedback	Continuous, highly interactive engagement with customer
Location Negative Impacts	Lack of timely requirements	Quality of customer information may not be good; Difficulty in accessing customer information	Lack of timely feedback; Poor feedback quality	Difficulty in synchronizing with the customer; Lack of direct customer contact
Perceived Personality Positive Impacts	Customers provide timely and quality requirements	Customer provides the team with information about their business domain	Customers provide timely and quality feedback	Customer is proactive during the development process
Perceived Personality Negative Impacts	Requirements are vague and not received in a timely manner	Customers provide little or no information about their business domain	Feedback is minimal and lacks quality	Customers have little interest in being involved in the development

				process
Teams' Experience Positive Impacts	Teams know how to work with the customer to gather and understand requirements	Team have previous information on their customer's business domain; Teams possess intangible information about their customer	The team can elicit useful feedback	The team knows how to get their customer involved
Teams' Experience Negative Impacts	The team has a poor understanding of the customer's requirements	The team has little previous infromation on the customer	It can be a problem to receive useful feedback due to a lack of understanding	The team needs time to build a relationship

Table 3 Factors Identified that Affected the Customer Focus of the ASD Teams

5 Discussion

The objectives of this study are i) to identify broader customer focus dimensions for use in an ASD environment, ii) to develop and test a framework for the evaluation of customer focus in ASD and iii) to further our understanding of how ASD teams achieve a customer focus. The initial customer focus construct incorporating the four sub-constructs, – gathering and understanding customer requirements, collection and use customer information, receiving and use of customer feedback, and the improvement of customer relationships, – does not cover the whole spectrum of what it means to be a customer focused agile team. Other impacting factors to be considered are: having a clearly defined customer, the importance of that customer's involvement and attitude towards the team, the location of that customer, and the team's prior experience with the customer. This leads us to more a refined notion of what having a customer focus is in terms of an agile team producing software for internal customers. A revised customer focus framework is presented below (see Figure 2).
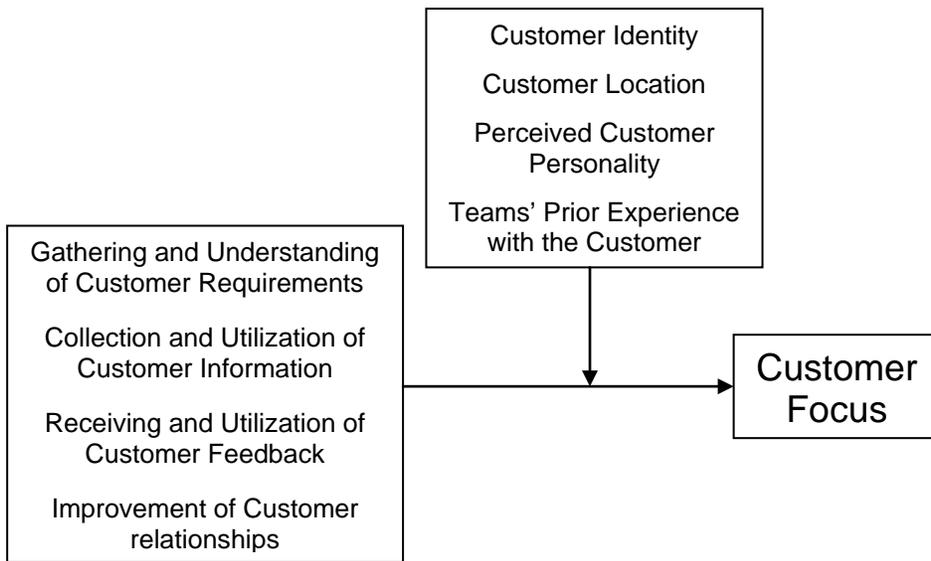
Figure 2. Revised Customer Focus Framework

Tables 4 and 5 list the practices observed in our case sites which best helped the ASD teams achieve a customer focus. The right hand column shows that many of these practices have been previously suggested in the literature. However, the literature is fragmented and empirical evidence is limited. This study highlights the fact that, for agile project managers, all the components listed below need to be considered during an ASD project. Project managers can determine which components are important in the context of any particular project.

Customer Focus Components	Practices Observed during this Study	Theoretical Customer Focus Practices
Gathering and Understanding of Customer Requirements	Upfront requirement documents guided the process; Close cooperation with the customer ensured timeliness and quality of requirements	Customer requirements are received in a timely manner; Teams receive sufficient and high quality customer requirements (e.g. Highsmith, 2004)
Collection and Utilization of Customer Information	Project sites collected information on the customer; Teams received training on the customer's business; Information was collected and analysed before the project began	Information on customer needs is collected, analysed, and made available to the team ; Forward looking information on customer needs is available; Teams have incentives to share customer knowledge; Mechanisms exist to disseminate knowledge and respond to customer needs (e.g. Coltman, 2007)
Receiving and	Teams were given sufficient	Teams receive customer

Utilization of Customer Feedback	time to present demos to their customers and receive feedback; The customer attended sprint retrospectives; Sprint retrospectives reviewed where improvements were required	satisfaction survey feedback; Customer complaint information is available to teams; Feedback is used to train team members; Feedback is used to improve processes (e.g. Moe et al., 2010)
Improvement of Customer Relationships	The team gave monthly demonstrations to the customer; The customer attended every sprint review	Involvement in development process, meeting directly with the team, awareness of project progression (e.g. Kautz, 2009)

Table 4 Customer Focus Practices

Impacting Factors	*Practices Observed during this Study*	*Theoretical Customer Focus Practices*
Customer Identity	The roles and responsibilities of the customer were clearly defined; The customer spent three weeks with the project team during the project start up phase	Clearly defined customer role (e.g. Gulati, 2007)
Customer Location	The customer was located on same floor as the team; The team communicated with off-site customers via video link; The customer visited the team's site every month	On-site customer (e.g. Highsmith, 2004)
Customer Personality	A knowledgeable customer or proxy was assigned to the team; The customer was empowered to make development decisions; The customer had good communication skills	The customer proxy is informed, motivated, and empowered to make decisions (e.g. Koskela and Abrahamson, 2004)
Teams' Prior Experience with the Customer	The team built up a relationship with the same customer over a period of time (Project B - 4 years; Project G - 2 Years)	Long lasting relationships with customers (e.g. Hanssen and Fægri, 2006)

Table 5 Impacting Factors

5.1 Supporting Customer – Developer Links

Previous research has recognized that projects are more successful when there are more developer-customer links and less use of customer representatives (Keil and Carmel, 1995). This is because the exchange of information between customers and developers is important to develop mutual understanding and this understanding diminishes when communication

channels are distorted by intermediaries. However, in many organizations customer representatives or proxies may be the only option. Our study serves to highlight the importance of having knowledgeable customer proxies who are able to communicate effectively with the development team. An interesting aspect of this was the differing leadership styles employed by project managers. Some project managers encouraged direct customer-developer interaction while others policed teams and demanded they interact with the customer only through the customer proxy, who represented the broader needs of the organization and not just individual customer preferences. A strategy that worked well for project B was developing several customer-developer communication channels while still having a customer proxy prioritizing the requirements backlog with the team. This allowed the developers get clarity on requirements directly from knowledgeable customers while not adding to the scope or complexity of the project. Any additional requirements or requirement changes were handled through the customer proxy. A recommendation from this for project managers is that they should encourage developers to communicate directly with members of the customer team to clarify requirements while keeping control of the project scope by ensuring all changes are authorized by the main customer representative.

5.2 Capturing Customer Specific Information

Our customer framework captures many of the practices that ASD teams employ to become customer focused. Our empirical evidence suggests that customer focus is a multi-dimensional concept, far more complex that previously envisaged within the APM literature. Both of our case sites employed agile practices such as on-site customers, iteration planning and review sessions and the establishment of direct communication channels between customers and developers in a bid to become customer focused. However, our framework also suggests that having specific customer repositories to store customer information, providing incentives to share customer information and mechanisms to disseminate this information also contribute to having a customer focus. Our case sites did have collaborative software (e.g. share-points and wiki pages) set up for each project but these were used to store project-specific information rather than customer-specific information. Project managers in ASD projects should consider customer-specific repositories, especially in cases where the customer is internal and/or there is likelihood that this customer will order products in the future. Having a customer-specific repository will allow future teams to utilize customer information even if customer buy-in is problematic.

5.3 Clearly Identifying the Customer

We show that clearly identifying the customer is an important impacting factor of customer focus. This seems obvious but when an ASD team is required to build systems for other technology teams who in turn build for the customer it becomes less clear where responsibilities lie. When possible the project manager should seek to get clarity about who the ASD team are to regard as the customer and what communication channels are open to them to interact with the customer.

5.4 An Engaging Customer

We also found that the perceived customer's personality affects the customer focus of the team. It must be noted, however, that this is from the point of view of the team. A customer may not be interested or committed to a project for a number of reasons. They may not have time to participate or may have other priorities and/or commitments. Previous studies by Koskela and Abrahamson (2004) and Martin et al. (2004) recognize the stressful role customers are expected perform in ASD. However, our study sheds new light on this by approaching the subject of poor customer commitment from the team's perspective. If the team are to become customer focused then they need to be aware that customers' circumstances will differ for each project. Table 3 in the findings section shows that if the customer is unable or unwilling to commit sufficient resources to the project then the customer focus of the team will suffer. Highsmith (2004) suggests that project managers need to be savvy due to the criticality of having customers involved in the development process, even going as far to suggest that project managers should turn down projects where there is no customer buy-in. However, this is often not an option and in the case of in-house development, where in-house politics often plays a key role, project managers and development teams can become customer focused through other means, such as collecting and analyzing customer needs and creating teams who are have experience with the customer or their business domain.

5.5 Long Lasting Customer Relationships

Another interesting point is the team's experience with the customer. In our study most of the teams that worked with customers over a long period had developed better communication channels with their customer. They understood their customer's needs and customer-developer relationships improved over time. If possible, project managers should seek to keep the same team working with the same customer. However, it should be noted that in one of our projects the ASD team was familiar with the product and had worked with the customer on a previous project. The team had found the customer apathetic before and still found the customer apathetic when it came to getting feedback and giving input into the development process. This

highlights the importance of developing productive relationships with the customer over time and care should be taken to ensure this is so.

6 Conclusions

Having a customer focus is one of the main aims of an ASD team. However, the literature in this area is both scarce and fragmented. In this paper we looked at how previous studies within ISD and other disciplines constructed the customer focus construct and used these insights to develop our conceptual framework. This framework was used to explore the customer focus of seven ASD teams within two case sites. We present a revised customer focus framework for an ASD environment. Our framework shows that to have a customer focus in an ASD environment the ASD team must seek to improve customer relationships through the ways they collect and utilize customer information, gather and understand customer requirements and receive and utilize customer feedback. They must also take into account the identity of their customer, the perceived personality of the customer, the location of the customer and the teams' prior experience with the customer. Our findings suggest that customer focus is a complex, multi-dimensional concept and individual customer focus practices are inherently interwoven. Previous APM literature has explored different individual constructs of customer focus but to the best of our knowledge this is the first study that provides a holistic view of customer focus practices in an ASD environment.

6.1 Contribution to Research and Practice

From a research perspective, while the concept of customer focus has been researched in other areas, such as manufacturing, marketing and also from the viewpoint of the external end user (Kumar et al., 2008, Ravichandran and Rai, 1999, Sousa, 2003), customer focus has not been addressed sufficiently in APM. This research is a start to filling this gap and uses the customer focus construct to study two organizations with internal customers. The findings show that there are other factors which need to be considered when looking at customer focus, such as customer identity, perceived customer personality, customer location and the teams experience with the customer. Previous researchers have noted the lack of research that combines the knowledge gained in other disciplines about the customer focus concept with research in ISD (Albert et al., 2004). This research helps to fill this gap and we bring important insights harnessed from other fields to help us further understand customer focus, a critical concept within the field of APM.

In terms of a practical contribution, this research takes the customer focus construct and applies it to the newly emerging ASD environment. This construct describes the importance of customer relationships, collecting and

using customer information, gathering and understanding customer requirements and receiving and using customer feedback. The two cases studied show how customer focus is affected within organizations which develop software systems or applications for internal customers. We show that when project managers are attempting to create a more customer focused environment they should seek to clearly identify the customer and their role in the development project. While the choice of customer may not always be within the control of the project manager they should understand that different customer personalities and abilities will impact the team's customer focus. This will allow the team to build a profile of the customer so they can manage their expectations of that customer. Project managers also need to be aware that the location and accessibility of the customer impacts customer focus and when possible they should try and establish long lasting relationships between teams and customers.

6.2 Limitations and Future Research

The strategic importance of customer focus may vary from organization to organization and it should be noted that when developing projects which are for internal customers, strategic priorities and work flow management may impact the relevance of customer focus for any given project. However, customer focus is still one of the vital components of a strong overall performance framework (Baldrige, 2010, EFQM, 2010, Hope and Fraser, 2003) and of primary importance to ASD. Previous researchers in ISD have also taken into account cultural differences and differing organizational strategies when comparing systems development projects in differing regions (cf Baskerville and Pries-Heje, 2004, Sousa, 2003). Our study did not seek to determine if there were cultural or strategic differences that accounted for differing levels of customer focus. Rather, we examined how ASD teams achieved customer focus and used one case to corroborate and add to the findings from the other, a strategy suggested by Yin (2009).

The usual limitations regarding validity and reliability regarding case study research apply here. In an effort to increase the reliability and validity of this research we followed the three principles of data collection outlined by Yin (2003), namely, we used multiple sources of evidence, we created a case study database and we maintained a chain of evidence. Another limitation of this study is that it is not statistically generalizable. As with any case study research we focus more on analytical generalizability rather than statistical generalizability. Our study is on ASD teams producing systems for internal customers and this reduces the context in which our framework is relevant. Further qualitative research could extend the framework to include other contexts that include distributed teams, off shoring, outsourcing or developing packaged products rather than custom products. Others might take

a quantitative approach and examine the links between the customer focus sub-constructs, the moderating factors, and the effects on measurable qualities such as customer satisfaction ratings or customer complaints. While our research suggests that there are factors that moderate the relationships between the sub-constructs and the customer focus construct, it is possible that the four moderating factors are formative measures (Petter et al., 2007) of the customer focus construct. Future research could further examine this model and determine the extent of the impact these factors have on the main customer focus construct and its sub-constructs. Also, given that this research is exploratory in nature, further explanatory, quantitative research could be carried out using the revised framework, comparing customer focus across a larger number of organization contrasting satisfaction ratings across organizations using the extended customer focus framework. Another interesting avenue for future research would be to study the responsibilities and commitment of the customer in ASD projects. Our findings show that customer focus suffers when customers are unwilling or unable to articulate requirements and get involved in the development process. This shows that while there is a responsibility on the ASD team to be customer focused there is also a responsibility on the part of the customer. Future research could further examine the impact a non-committed or unsuitable customer has on the customer focus of the ASD team.

Acknowledgements

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Appendix A: Sample Interview Questions

- How do you receive customer requirements? (What do you like/dislike about this process?) Get examples.
- How would you describe your working relationship with your customer (or proxy customer)? (What works well? what doesn't? Do you know/understand your customer? What are the levels of interaction?)
- Do you get information on customer needs? Do you get forward looking information on customer needs? (How is this gathered? Analysed? Disseminated? Why is it/is it not?)
- What type of customer feedback do you receive? (Satisfaction surveys, email, meetings, pat on the back?) What do you do with this information? How is it used? Training? Process improvement?
- Is there a process or mechanism whereby you can share information on customers or your experiences with customers? With others? (Other teams or individuals, e.g. knowledge repositories.) Elaborate on this if necessary, what is the process? Ask about incentives?
- How involved are the customers in the development process? (On-site? Daily communications? Weekly? Etc.) Are customers aware of the project status? How?

Appendix B: Example Coding

This appendix details some examples of the data coded during the analysis phase of this study

Quote	Source	Key Codes

A lot of the people that are in the project were involved in the roadmap. I wasn't but the key leading advisor, the architect and some of the team members, they were in the roadmap, building the roadmap, so we got all the information, not only on paper but also brought by people that were in that phase. Otherwise it would have been really difficult.	Project Manager: Project D	Customer information/ positive impacts/ teams' experience with the customer
It was a kind of haphazzard way of doing things. Before we even got the project, this was years ago, they drew up a list of very high level ideas, but they hadn't really thought about it....we spent a huge amount of time trying to match up their requirements, requirements we didn't even understand, they didn't make sense... It wasn't even our main customer who was driving this	Team member: Project C	Customer information/ negative impacts/ teams' experience with the customer
There are some customers who are really eager, really involved, they really know the area and they know the tool. We have one customer who is very involved, very good and very helpful and he has really backed us up in terms of helping us system test various things, coming up with test scenarios, customer test scenarios, and helping us ... Yeah, he is a really good guy, really good.	Team member: Project B	Customer relationships/ positive impacts/ perceived personality
We have reviews after each sprint and then we get feedback, we demonstrate of course the functionality we developed and sometimes they comment on things that are good but often they sort of lean back and get the information. They haven't initiated to have a new system developed for them, so what we find is the attitude they're getting something new and that's fine but there is a certain amount of apathy there	Team member: Project G	Customer relationships/ negative impacts/ perceived personality