

The XP Customer Team: A Grounded Theory

Angela Martin
The University of Waikato,
Hamilton, New Zealand
angela@cs.waikato.ac.nz

Robert Biddle
Carleton University,
Ottawa, Canada
robert_biddle@carleton.ca

James Noble
Victoria University of
Wellington, New Zealand
kjx@mcs.vuw.ac.nz

Abstract

The initial definition of XP resulted in many people interpreting the on-site customer to be a single person. We have conducted extensive qualitative research studying XP teams, and one of our research questions was “who is the customer”? We found that, rather than a single person, a customer team always exists. In this paper we outline the different roles that were typically on the team, which range from the recognized “Acceptance Tester” role to the less recognized roles of “Political Advisor” and “Super-Secretary”.

1 Introduction

The initial definition of XP resulted in many people interpreting the on-site customer to be a single person. Over the last six years we have studied eleven projects world-wide and discovered that a *team* of people perform the on-site customer practice initially outlined by Beck [1]. While today there is a greater acknowledgement within the community that the customer is more than one person, this paper provides a deeper insight into the roles required on that customer team. We have conducted an extensive qualitative study of XP teams, interviewing teams working on many kinds of projects and in different locations. We found that there was always a customer team and we identified the following de-facto roles:

- Collaboration Guides: Geek Interpreter, Political Advisor, and Technical Liaison
- Direction Setting: Negotiator, Diplomat, Super-Secretary, and Customer Coach
- Skill Specialists: Acceptance Tester, UI Designer, and Technical Writer

In this paper we will describe each of the roles and how they emerged, focusing on the first two categories, as the third is better understood. We present the roles in the order that they emerged during the analysis. We first understood the detailed supporting roles and later the direction setting roles.

2 Research Method

Information Systems Development (ISD) methodology researchers [2; 3] have expressed a growing concern that existing ISD methods do not meet the needs of today’s business and software development environments. Studies [3] in this area have begun to explore practices in natural settings in order to begin to address these issues. Given this trend, we have used grounded theory [4] to explore our research questions within their natural setting, software projects. We used semi-structured in-depth one-on-one interviews as well as project team observations to collect the data for this paper. Eleven XP projects are explored; we interviewed a total of 66 people across the eleven projects. Our interviews covered the spectrum of core XP roles including the big boss, customer, programmer, coach and tester. All interviews were taped and later transcribed in detail. The interviewees were asked to validate both the transcriptions of the interview and the interpreted findings. The project observations were used to support both the interview process and the resulting findings. In the sections that follow, we identify the roles as they emerged from our analysis. We use a number of quotes from the interviews to illustrate our findings; names have been avoided or invented to preserve anonymity. The teams we studied were working on a variety of projects:

Company	Location	Domain	Size*	Team
KiwiCorp	Australasia	Telecoms	M	11
RavenCorp	USA	Research	S	20
EagleCorp	USA	Software Tools	S	16
FalconCorp	USA	Retail Products	S	60
SwiftCorp	USA	Retail	XL	20
HawkCorp	USA	Knowledge	S	5
TernCorp	Europe	Telecoms	M	20
SparrowCorp	UK	Energy	L	15
KiteCorp	Europe	Transport	M	12
RobinCorp	UK	Mobile software	XS	6
OwlCorp	UK	Health	L	20

* Companies were classified by the number of employees:
XS < 15, S < 1,000, M < 10,000, L < 100,000 and XL 100,000+

This study was part of a doctoral programme. The resulting PhD thesis [5] provides a full description of our application of Grounded Theory, including details of the selection of interviewees and teams, and a full literature review. Space restrictions did not permit us to include the details in this paper.

3 Collaboration Guides

Collaboration is an essential value of agile software development [6], and as such significant investment is made in the facilitation of collaboration around agile projects [7]. We noticed that three specific roles emerged to enhance the business-technical collaboration on a project: Geek Interpreter, Political Advisor and Technical Liaison.

3.1 Geek Interpreter

Quick Definition: A person who supports the business to improve their communication and collaboration with programmers.

The agile principle that business and technical people are required to work together daily changes the dynamic of the business-technical relationship in many organizations:

"[Previously] you write a document, you get feedback on the document ... and it's not until the product comes out at the end that you realise, well somebody screwed something up ... but you get the pleasure through XP of having that close, close, close relationship in defining the product right at the time ... one of the great powers of XP ... was that ... I could leverage ... the collective intelligence of the whole developer group that I work with."

—Customer, EagleCorp

The emphasis on business and technical people collaborating was perceived as fundamental in order for the team to “build the right thing”, but sometimes programmers and customers can talk past each other:

"If I'm kind of thinking, how can you [developer on the team] give me a four day [estimate] ... for a field on the screen, that's bonkers, I'll wander up and say [to another developer he trusts on the team], I've got a story, what do you think? ... and obviously I couldn't then quote it back to the first developer but it gives me an idea of what's going on ..."

—Customer, OwlCorp

We have named this role the Geek Interpreter. The Geek Interpreter is a person who helps the customer understand and talk with programmers. The Geek Interpreter generally does not talk to these

programmers directly, but instead acts as a sounding board and coaches the customer to speak to developers more effectively. We observed customers using a Geek Interpreter both when the customer's background was solely in business as well as when the customer's background also included development.

It also emerged that the Geek Interpreter often provided guidance or advice on how to approach tasks such as story writing, user acceptance testing, planning and prioritizing. This last aspect of the Geek Interpreter role was only seen when the customer did not have a development background; other customers typically did not need this type of advice or guidance.

We noticed that most programmers value their communication skills with business people, and it might bother them that at times the customer needs to use a Geek Interpreter when communicating with them. As such, it is particularly interesting to note that the customers were aware of this and were very careful when using a Geek Interpreter. For example, one customer mentioned that they never used the advice provided by the Geek Interpreter in potentially antagonistic ways like “but [Geek Interpreter] said ...”.

Words customers used to describe the person(s) playing this role included “guidance”, “trust”, and “on my side”. Geek Interpreters were also seen as team members who were particularly interested in the domain and able to listen to the business representatives and show respect. Finally, it is important to note that the Geek Interpreter role was never observed to be an “official” team role. We noticed that their official roles were varied and included business analyst, tester, project manager or programmer (on either the same or on a different project).

3.2 Political Advisor

Quick Definition: A person who is aware of the political dimensions within the organization and is adept at navigating these dimensions to assist the project to succeed.

Every organization has a rich life. During our interviews a number of stories that illustrated the richness and diversity of organizational life were shared that help illustrate the importance of a Political Advisor¹. One senior business executive related her ongoing frustrations with regards to working with the IT unit in her organization:

¹ In this section we do not identify stories or quotes from organizations using a pseudonym. The stories are sensitive, and we wish to avoid explicitly situating the stories within cases to protect the privacy of different interviewees from the same case study.

“Before [the IT manager] took on [name of IT Unit] his predecessor was pushed out of the company, and my boss ... was kind of partly the catalyst in that. [Regarding the current IT manager] ... So I think he [her boss] thought it was déjà vu [when encountering similar issues with the current IT manager] ... You don’t want to be responsible for two people in the same position. So we just lived with it.”

How did this project history affect the team? Perhaps in many ways the project history had positive consequences, in that this senior executive worked very closely with the team. While there were some rough patches along the way, she was complimentary about the team and was pleased with the software that was produced. However, she was finding that continuing to “work around” the IT manager was frustrating and time-consuming, and so despite the team’s best efforts, in an interview with us she noted that she intended to outsource software development in order to lessen the impact of the IT Manager. Six to twelve months later the team was mostly disbanded and the software development was (partially) outsourced.

In another project, it became painfully aware to the project team that one political player had been overlooked: operations. The IT Development Manager describes a disastrous “go/no-go” meeting that occurred where the operations group vetoed the launch of the system. On reflection she realized that when assembling the key people to involve in the project steering group, she had opted for a junior member from operations as he was available, but he did not have the authority required to make the decisions necessary in this situation. She had misread the political dimensions and had no additional advisor on the lookout for signs of unrest within the organization.

While many of the stories from our case studies demonstrate the richness of organizational life or politics with “negative” outcomes, some demonstrate how it can work to achieve positive outcomes for the project. One customer from a large project shared a story of working closely with her executive manager to help her (the customer) know when to break the rules:

“Well we knew that if we actually got people’s formal sign-off — business people sign-off for everything — we’d never actually get anything done. So we ran a bit of a risk. We assumed, based on [senior executive’s] work with people and our knowledge that we [could proceed without formal sign-off].”

This project was seen as a success within the organization despite breaking the rules. The customer used her executive manager as a Political Advisor.

From the stories related so far, it may appear that the customer must use a senior executive to assist them to navigate the by-ways of organizational life. There are, however, also stories that indicate that Political Advisors can be outside of the formal organizational hierarchy as well.

3.3 Technical Liaison

Quick Definition: A person who undertakes the liaison with related projects and technical silos within the organization.

Most projects do not exist in isolation; project teams have to interact with existing technical infrastructures and other software development projects. This role emerged very quickly in the studies, initially because it was “missing”, and so caused significant overload and frustration for the customer:

“We probably needed about three of me ... it’s been my life ... look at these grey hairs ... all these technical integration issues were ... taking up about half [of my] time”

— Customer, KiwiCorp

KiwiCorp was not alone with the need for a Technical Liaison between the project and specialized technical groups:

“Different teams ... always comprise a project, you’ve got the UI, you’ve got deployment, there’s getting the applications out, initiatives etc., you’ve got security, you’ve got infrastructure, ... the interaction between different systems, so you’ve got all these different groups that you bring together in a project.”

— Customer, SwiftCorp

The liaison undertaken at SwiftCorp seemed particularly effective. At SwiftCorp the project manager and coach invited (and encouraged) the technical specialists to attend the planning games, and daily stand-up meetings. The project manager and coach were both very aware that they needed to make it worthwhile for the technical specialists to attend, so they were careful to initially invite them only to sessions where they would get significant benefit. In their experience of using this approach, they found that over time the specialists became more involved, by choice, as they could see the benefits of being involved based on their experience. The project manager complemented this with a lot of one-on-one liaison with the technical specialists. Honious [8] from Reed Elsevier describes a similar approach that their project team used to involve their operations group actively in

their agile project. On the Reed Elsevier project, the team identified a primary contact person within the operations group and then invited him to participate on their project one day a week. They also noticed that their contact person gradually increased the time he spent with the team to 2-3 days a week.

A number of authors have also identified a need for cross-team coordination and communication on agile projects [9; 10; 11]. As with our case study data, the research papers and experience reports that concentrate on these issues tend to be larger organizations: Nokia [9], BBC [10], Reed Elsevier [8], and Primavera [11]. Other suggested ways to handle this issue are more technique-focused, and the Technical Liaison may wish to utilize some of these techniques when undertaking this role. Kahkonen [9] describes a communities of practice approach that Nokia has established that bring technical specialists or related project teams together in facilitated workshops. Tartaglia and Ramnath [11] relate an alternative approach that uses open spaces to help bring interested technical specialists or related team members together to discuss a specific topic.

4 Direction Setting

The direction setting roles comprise the core of the on-site customer role and practice outlined by Beck in the first edition of *Extreme Programming Explained* [1]. It is these roles that set the direction of the project, resulting in the single voice describing “what to build”. The collaboration guide and skill specialist roles support the direction setting roles.

4.1 Negotiator

Quick Definition: A person who works with the end-users and other stakeholders to negotiate a single-voice of what to build.

DeMarco [12, p. 5] suggested that negotiating “with a whole community of heterogeneous and conflicting users is a gargantuan task”; and went on to liken the diplomatic skills required to “the skills of a Kissinger negotiating for peace in the Middle East.” We use this analogy when introducing the lead role of the Customer team.

On every project we studied, everyone could clearly identify the on-site customer(s), even though there was an entire customer team. One person, or in some instances a pair of people [13], were the identified contact point. It emerged that, like in DeMarco’s analogy, the Negotiator² picked up the task of gaining

agreement within the larger stakeholder community on the vision for the software.

For example, the EagleCorp product manager, who played the role of the Negotiator on their development project needed to bring together both internal and external stakeholders. His internal stakeholders consisted of senior executives, sales, marketing, and operational support representatives, as well as the architect from the engineering group. His external stakeholders included the Customer Advisory Group representatives from existing customers as well as representatives from potential new customers. The EagleCorp Negotiator used a number of different facilitated workshop techniques to facilitate an agreement amongst this diverse stakeholder base as to the scope of the project. Finally, it should be noted that the negotiation aspect was an ongoing activity. As new information came to hand, re-planning resulted; both small changes and dramatic changes to the initially envisioned scope needed to be negotiated and agreed on with the stakeholders. A Negotiator emerged in all of the other cases. We give them the name Negotiator to more clearly define the role, but also to more clearly allow the “onsite customer” term to refer to the customer team.

Some books [14; 15] exist that would support this concept of a Negotiator or facilitator working with large or diverse groups of stakeholders to achieve a vision of “what to build”. These texts recommend the use of facilitated workshops to achieve a shared understanding amongst the stakeholders.

We saw great variety in the background of the Negotiator, the stakeholders they would represent, and the techniques they used to obtain the agreement amongst the stakeholders. The Negotiators’ backgrounds ranged from those with an IT background (e.g. business analysts, developers or project managers) to those that had no IT background at all (e.g. the KiwiCorp librarian). We have found, however, that there were also a number of similarities amongst those undertaking the role of the Negotiator. Firstly, all Negotiators knew the domain well:

“They need to have domain knowledge, huge domain knowledge to be a customer, a strong customer. If they don’t have that it’s hard for them to gain the confidence of the developers to say I’m going to tell you what we’re going to build and you’re going to build what I tell you and that’s the way its going to be. That’s a great customer. Because I’m right, you know. Now for someone to come in here and say well, I don’t know what we’re doing and we’re going to just meander around for a while, that sounds like a lot of rework, scope creep

² Our paper on XP Customer Practices [13] elaborates on the practices the Negotiator uses when working with the stakeholder community and the programmers.

and all those bad things in there that don't make delivery fun or easy. So I think it's kind of domain knowledge and a real determination."

—Programmer, SwiftCorp

Notice that this domain knowledge does not necessarily mean they are end-users or business stakeholders. For example, the programmer quoted above is referring to a business analyst, not an end-user. Other attributes the Negotiators had in common were that they:

- Understood the business drivers on the project, which may or may not have always aligned directly with their needs as an end-user (if they were an end-user).
- Knew who to approach for information or decisions, thus were well connected within the organisation and able to use their connections effectively.
- Were aware that multiple perspectives existed, and helped people with different perspectives understand one another.
- Were comfortable working at both the "big picture" level and the detailed level.
- Were confident, decisive, and stable under intense pressure.
- Enjoyed project work and liked working with technical people.

Perhaps unsurprisingly this list of attributes aligns reasonably well with Beck's initial list of attributes of a good customer [16, p.18]. The attributes that Beck brings up in addition to our list include:

Is determined to deliver value regularly and is not afraid to deliver too little rather than nothing and can make decisions about what's needed now and what's needed later
[16, p.18]

Interviewees did discuss the importance of regular delivery, which occurred through the XP process, but they did not add the aspect of not being afraid to deliver too little instead of nothing. We did, however, notice that the Negotiator was acutely aware of almost the exact opposite, which is that in some situations releasing nothing (rather than too little) may indeed be the right business decision. So it is perhaps reasonable to assume that they were very aware of delivering regularly but their emphasis was more business orientated.

We observed that Negotiators do not necessarily carry the full decision-making responsibility, that is, they will not necessarily lose their jobs if the system or project ends up being perceived as a failure. It is rare for that responsibility to be fully on their shoulders, it seems more likely that it will be on the sponsor's or

Big Boss's shoulders. What was interesting, however, is the Negotiators we observed did choose to own the responsibility to obtain an agreement amongst stakeholders. These individuals chose to pick up that responsibility. This fits with Beck and Fowler's [16] initial words, which were "willing to accept ultimate responsibility for the success or failure of the project".

4.2 Diplomat

Quick Definition: An end-user or stakeholder who brings the perspective of their group to the project.

We continue to use the treaty negotiation analogy for this next role, Diplomat: it is the Diplomats who are present at the negotiation table. Diplomats were business representatives or technical specialist (e.g. architect) representatives. Their job is to represent the interests of their area, whether that area was a country, a business unit, or a subject area. Notice that Diplomats were members of that area, not proxies. It is important that, as Diplomats, they articulated the view of their area well and worked with others around the table to hammer out the "treaty" or single-voice of the customer.

To represent the views and needs of a group of people, the Diplomat must be in touch or connected with this group of people; keeping them in the loop on trade-offs that will have to be made during the process and obtaining their buy-in to the agreement as it takes shape. At times the Diplomat may even choose to bring other representatives to the table as feasible:

"...we were representing [the business unit] and you can't please everyone ... we do research to get to the answer and we go and find out who knows because generally in [the business unit] there's someone who's sitting on all the information ... you have to ... put your own kind of preferences aside as well and see what the best is..."

—End-user Representative, OwlCorp

Despite them being members of the area themselves, the Diplomat still needs to connect with the people they are representing. Typically the projects second someone from the area to work with them on the project, so they have a deep insight into what will make a difference, please the people they represent, and get the system accepted.

So the Diplomat has a very outward facing role into the organization. Their involvement with the project team can vary significantly. Some Diplomats worked full-time on the project team, and developed strong relationships with the programmers (e.g. OwlCorp). Other Diplomats were part-time and while they developed a strong relationship with the Negotiator, they had no relationship with the larger project team

(e.g. most of the programmers on the EagleCorp project we studied had not met any of the EagleCorp Customer Advisory Council members³).

From the examples we have presented above, it is easy to focus on the Diplomat being the end-user. While the end-user and business representatives are crucial to agile projects [6] and real customer involvement is strongly encouraged [1; 7], other perspectives must also be present to fulfill the customer role. Technical specialists have other perspectives that feed into the single-voice the customer must provide. The involvement of technical specialists in the customer team on technically focused projects might typically be expected. For example, there was a technical advisory group on HawkCorp's project and on the ChannelAdvisor project outlined by Isham [17]. Technical Specialists may, however, be crucial representatives on business-focused projects too. For example, at EagleCorp the architect was a key influence on the technology decisions made, and non-functional requirements (e.g. performance and scalability). It is important that these types of requirements are not forgotten [18].

We have also noticed that initially Diplomats themselves (and the development team) will probably under-estimate the amount of involvement required from the Diplomat. For example, in TernCorp one of the Diplomats originally expected to only be available to the project for 50% of her time and the remaining 50% could be spent on her day-job commitments. Her department re-allocated the other 50% of her work. It soon became apparent, however, that the project required her involvement full-time on the project, but there was no opportunity to re-negotiate. Her solution, partly because of her personal decision to take on the responsibility of the success or failure of the project, was simply to work longer hours, and even with all of that effort, she did not manage to maintain all of her organization commitments.

4.3 Super-Secretary

Quick Definition: A person who undertakes the administrative support workload of the customer team. They also become the person programmers approach for guidance when the Negotiator is unavailable.

There are many administration and organizational tasks that need to occur in order for the customer to be effective in their interactions with both the business and the programmers. Overloaded customer team members find it easy to either let these tasks "slip" or become a burden that results in them either not being

as effective (e.g. losing stories) or working even more hours in a day. We have found that typically one person on the team will surface to pick up the "administrivia" load from the rest of the team; we have called that role the Super-Secretary. We have found that the Super-Secretary always has another formal role⁴ on the customer team, so this role is always "part-time", despite the occasionally very large amounts of work involved. The Super-Secretary will typically record and organize the stories, as well as track them through their lifecycle⁵. The Super-Secretary also has a detailed understanding of all of the stories:

"In fact she could have probably done my job. You know, she had a very good knowledge of the business ... She also [has] this amazing encyclopaedic knowledge of everything, so you'd say what story was this and she'd trip out the story number and the letter and everything to do with it"

— Customer, OwlCorp

The Super-Secretary also undertakes other tasks such as:

- Following up the story status with the programmers
- Printing cards or tracking cards on the wiki, as required by the programmers or business
- Organising meeting rooms for iteration or release planning meetings

Beavers [19] described the role "Requirements Architect" that BMC needed to introduce to improve their management, elaboration and prioritization of the projects requirements. This role appears to undertake a similar function to the Super-Secretary. Beck [1] outlined the role of Tracker as a member of the XP team, and this role seems to align with many aspects of this administrative role. There is, however, a focus on the requirements or customer responsibilities of the team. From our perspective, this role is richer than that described by Beck.

The richness of this role is illustrated by the remaining task that falls to the Super-Secretary, which is that of Negotiator or Diplomat stand-in. When the identified "customer" is not available, perhaps because of the close relationship that the Super-Secretary holds with the customer, and his or her detailed knowledge of the stories, the development teams begin to use him

³ Our paper [13] outlines the practices customer teams use to help prevent this type of disconnect.

⁴ The formal role that the person holds on the team can range from Business Analyst, Tester, Project Manager and in one case Developer.

⁵ For example, a few Super-Secretaries used a sticker system with different colors representing each stage to track the stories. While the team as a whole might help put the stickers on the cards, it was clear that the Super-Secretary quietly ensured that this system was in use and updated.

or her as a “stand-in”, obtaining his or her impressions of a story:

“[Super-secretary], who is our tester/admin/general kicker-up-the-arse person. She is brilliant ... she works very closely with [the Customer] in the testing side of things. When we think we have finished a card, if [the Customer is not] around ... We will talk to [Super-Secretary] about, do you think this is done, and she kind of gives a non-developmental look over what we have done.”

—Programmer, SparrowCorp

The Super-Secretary can often become one of the most helpful (although often under-appreciated) people on the team, from both the business and technical perspective. Perhaps it is this aspect that helps draw out why this role, despite its apparent administrative nature, is only undertaken by quite experienced or senior team members. Given that this role is always a secondary one, and often unrecognized, the person performing it can become very overloaded.

4.4 Customer Coach

Quick Definition: A person who supports the other customer team members to undertake their roles.

XP introduces the concept of a coach: someone who helps the team transition to XP, both from the team and people dynamic and the process perspective [1]. At SwiftCorp the team had two coaches, one that specialized in the development practices and the other who specialized in working with the customer community and the associated customer practices.

The SwiftCorp Customer Coach had a development background, but worked with the customer team, supporting them to drive out and communicate the direction of the project. He was 100% customer focused, leaving another coach to focus on the development practices. The Customer Coach, however, was only part-time on the project, approximately three days a week. During that time he was the customer’s personal “cheer” team when it all seemed too much, and would help them determine how to break the task down into achievable steps. He had a lot of experience at writing stories and acceptance tests and perhaps even more importantly the soft collaborative and community building skills needed in the customer team.

The Customer Coach may also play the role of a Geek Interpreter (refer to section 3.1), as they do have that interest in technical-business collaboration and typically have a technical background. However, they have a wider focus. They give the Customer someone to talk to, to help them resolve their issues, ensure they

realize they are not alone and to mitigate the risk of customer burnout. To be effective this person should:

- Have enough IT and business experience to provide effective and pragmatic support.
- Have an awareness of XP practices and how the on-site customer practice works effectively
- Not try to solve the customer’s problems but work with them to help them solve their own problems.
- Be someone the customer can trust.

In this practice we aim to provide professional support to customers. This practice combines the patterns *Mentor* and *Shoulder to Cry On* outlined by Manns and Rising [20]. We have found that the Customer Coach role makes a difference to the well-being and effectiveness of the customer.

While Beck [1] introduces the role of Coach, we have discovered it to be beneficial to have a specifically customer-focused Coach. Hussman [18] writes of his experiences as a Customer Coach, and his experience also seems to support the recommendation of a dedicated Customer Coach.

5 Conclusions

This paper has outlined the roles we identified on the customer team that emerge from our qualitative study of XP projects. The first group of roles includes *Collaboration Guides* and these include the Geek Interpreter, Political Advisor and Technical Liaison. Their focus is advising or guiding the customer team as they build trusted relationships both within the team and in the wider organization. These roles tend to be undertaken by people who are not formally recognized as being part of the customer team, but they are necessary components. The next group of roles includes the *Direction Setting* roles and these are the Negotiator, Diplomat, Super-Secretary and Customer Coach. These roles form the heart of the on-site customer practice, with the Negotiator typically being the leader of the customer team, and also the “official” XP customer. It emerged that the Direction Setting process is typically negotiated amongst a large group of stakeholders rather than simply “being known”, as Beck seems to suggest. The aspect of real customer involvement still remains essential and the Diplomat fulfils this aspect of the on-site customer practice. The Super-Secretary and Customer Coach are the last two elements at the heart of the Customer team. The Super-Secretary removes much of the administrative burden from the Negotiator, and, also importantly, often fills in as the stand-in for the Negotiator when the Negotiator is not available. Finally, the Customer Coach, when available on the team, provides essential guidance and advice to the entire customer team, particularly the Negotiator and Diplomat, helping them

to take the steps that determine the direction of the project.

The last group of roles consists of Skill *Specialists*, which we have not covered in detail in this paper. The Skills Specialists are described in detail in the thesis [21] but they do complement the Collaboration Guides and Direction Setting roles already described. The Skills Specialists roles identified in our study were the Acceptance Tester, User Interaction Designer and Technical Writer. The focus of these roles is to assist the customer to undertake their specific customer-focused activities such as writing stories, verifying stories and writing user documentation. These roles are often recognized roles on the customer team, and typically filled by specialists.

Although we identified ten roles, we observed that one person can play multiple roles, and multiple people might combine to play one role (e.g. Diplomat, almost by necessity, will need to have multiple people playing this role). How these roles are established is also contextually dependent. Someone in the customer role may informally create the roles to provide the support they need, or the roles may be created as part of a more formal management process. In the cases we studied, the former occurred, with the team forming based on need, as very little guidance was available. We hope that our qualitative research has identified ideas that help teams, and inform future research.

6 References

- [1] K. Beck. (2000), *eXtreme Programming Explained: Embrace Change*, Addison-Wesley.
- [2] B. Fitzgerald. (2000), Systems Development Methodologies: The Problem of Tenses. *Information Technology and People* **13** 174 - 185.
- [3] J. Nandhakumar, and D.E. Avison. (1999), The Fiction of Methodological Development: A Field Study of Information Systems Development. *Information Technology and People* **12** 1 - 28.
- [4] B.G. Glaser, and A.L. Strauss. (1967), *The Discovery of Grounded Theory: Strategies for Qualitative Research.*, Chicago: Aldine.
- [5] A. Martin. (2009), *Exploring the Role of Customers in Extreme Programming Projects*. PhD Thesis, Victoria University of Wellington, New Zealand. <http://researcharchive.vuw.ac.nz/handle/10063/877>.
- [6] K. Beck, M. Beedle, A. van Bennekum, A. Cockburn, W. Cunningham, M. Fowler, J. Grenning, J. Highsmith, A. Hunt, R. Jeffries, J. Kern, B. Marrick, R.C. Martin, S. Mellor, K. Schwaber, J. Sutherland, and D. Thomas. (2001), *Manifesto for Agile Software Development*, <http://agilemanifesto.org/>.
- [7] K. Beck. (2004), *eXtreme Programming Explained: Embrace Change*. Second Edition., Addison-Wesley.
- [8] J. Honious, and J. Clark. (2006), Something to Believe In. in "Agile 2006" (J. Chao, M. Cohn, F. Maurer, H. Sharp, and J. Shore, Eds.), IEEE Computer Society, Minneapolis, United States.
- [9] T. Kahkonen. (2004), Agile Methods for Large Organisations - Building Communities of Practice. in "Agile Development Conference" (T. Little, S. Alpert, and A. Pols, Eds.), IEEE Computer Society, Salt Lake City, Utah, United States.
- [10] M. Lowery, and M. Evans. (2007), Scaling Product Ownership. in "Agile 2007" (J. Eckstein, F. Maurer, R. Davies, G. Melnik, and G. Pollice, Eds.), IEEE Computer Society, Washington D.C, United States.
- [11] L. Miller. (2005), Case Study of Customer Input for a Successful Product. in "Agile 2005" (M.L. Manns, and W. Wake, Eds.), IEEE Computer Society, Denver, Colorado, United States.
- [12] T. DeMarco. (1979), *Structured Analysis and System Specification*, Prentice-Hall.
- [13] A. Martin, R. Biddle, and J. Noble. (2009), XP Customer Practices: A Grounded Theory. in "Agile 2009", IEEE Computer Society, Chicago.
- [14] E. Gottesdiener. (2002), *Requirements by Collaboration: Workshops for Defining Needs*, Addison-Wesley.
- [15] J. Highsmith. (2000), *Adaptive Software Development: A Collaborative Approach to Managing Complex Systems.*, Dorset House Publishing.
- [16] K. Beck, and M. Fowler. (2001), *Planning Extreme Programming*, Addison-Wesley.
- [17] M. Isham. (2008), Agile Architecture is Possible - You First Have to Believe. in "Agile 2008" (G. Melnik, P. Kruchten, and M. Poppendieck, Eds.), IEEE Computer Society, Toronto, Canada.
- [18] D. Hussman. (2003), Coaching a Customer Team. in "Fourth Internal Conference on Extreme Programming and Agile Processes in Software Engineering" (M. Marchesi, and G. Succi, Eds.), Springer-Verlag, Genoa, Italy.
- [19] P.A. Beavers. (2007), Managing a Large "Agile" Software Engineering Organization. in "Agile 2007" (J. Eckstein, F. Maurer, R. Davies, G. Melnik, and G. Pollice, Eds.), IEEE Computer Society, Washington D.C, United States.
- [20] M.L. Manns, and L. Rising. (2004), *Fearless Change: Patterns for Introducing New Ideas*, Addison-Wesley.
- [21] A. Martin, R. Biddle, and J. Noble. (2009), *The XP Customer Team: A Grounded Theory*. in "Agile 2009", IEEE Computer Society, Chicago.