

# Being Jane Malkovich: A look into the world of an XP customer

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**Abstract.** One of the pivotal roles in XP is the customer, but little guidance is provided in the literature on the practicalities of succeeding in this role. We used an interpretative in-depth case study to explore a successful XP project. We obtained multiple perspectives on the implementation of the customer role, and this paper includes excerpts from interviews with the customer and other development team members. We found that the interviewees provided a consistent picture of the XP customer role and they agreed that the XP customer role, especially for larger organisations, is very demanding. It requires preparation, skills, attention to detail, and the ability to make critical decisions.

## 1 Introduction

*“All the best talent and technology and process in the world will fail when the customer isn’t up to scratch” [3, p. 17]*

Most of us, based on our experience, agree with this statement, irrespective of whether the statement concerns an XP project or not. But how do we know when a customer is ‘up to scratch’ for the XP on-site customer role?

The initial XP books [2, 3] provide little guidance on the practicalities of succeeding in this role. Some experience reports [5, 8, 13] have provided valuable insights into the issues encountered during the implementation of XP, including that of the customer role. However, none of the XP literature to date has focused on the required characteristics and skills of the customer, or explored the day-to-day challenges encountered in this role.

Our research is beginning to explore the practicalities of succeeding in the implementation of the XP customer role, and this paper outlines some of our initial findings. We have used an interpretative in-depth case study to explore a successful XP project, and we have obtained multiple perspectives on the implementation of the customer role, including both the customer and programmer perspectives. We have found that the interviewees agreed that the XP customer role, especially for larger organisations,

is very demanding. It requires preparation, skills, attention to detail, and the ability to make critical decisions.

In the next section we outline our three research hypotheses generated based on advice in the XP literature. In the third section we describe the context of the case study, including the project background and purpose and an overview of the XP team's experience in both general software development and XP. In the fourth section we discuss the results of the case study and compare the well known advice concerning each hypothesis with what our interviews found. Finally, we present our conclusions.

## 2 Research Hypotheses

Our research hypotheses were established from the advice provided by the XP founders or respected practitioners, and cover the characteristics of the customer, the skills of the customer, and the location of the customer.

### 2.1 Characteristics of the XP Customer

Beck & Fowler provide some initial guidance on selecting a good customer in the XP planning book [3]. Their guidance consists of a list of the characteristics of a good customer:

- *“Understands the domain well by working in that domain, and also by understanding how it works (not always the same thing)*
- *Can understand, with development's help, how software can provide business value in the domain*
- *Is determined to deliver value regularly and is not afraid to deliver too little rather than nothing*
- *Can make decisions about what's needed now and what's needed later*
- *Is willing to accept ultimate responsibility for the success or failure of the project.” [3p. 18]*

We used this suggested list of customer characteristics to generate our initial research question: *How did a customer on a real XP project measure up against this list of ideal characteristics?*

### 2.2 Skills of the XP Customer

*“One of the things that is unsaid in the XP literature is how to be a customer (analyst)” [7]*

To describe ‘how to be a customer’ we need to understand the tasks the customer will need to perform. Once we understand the tasks we will be able to establish the skills that the customer will need, to either possess or be trained in, in order to perform their role effectively. The second research question we generated, based on this reasoning,

was a double barrelled question: *What tasks did the customer perform on a real XP project and what skills did the customer need to perform these tasks well?*

### 2.3 Location of the XP Customer

The XP customer role is named the *on-site customer* role and Beck [2, p. 60 - 61] notes:

*“A real customer must sit with the team, available to answer questions, resolve disputes, and set small scale priorities [...] The on-site customer will have the disadvantage of being physically separated from other customers, but they will likely have time to do their normal work.” [2, p. 60 - 61]*

We were interested in understanding: *How did a customer on a real XP project implement the on-site requirement and what were the flow-on effects of this decision to both the project and the business?*

### 2.4 Research Method

Information Systems Development (ISD) methodology researchers [6, 11, 12] have expressed a growing concern that existing ISD methods do not meet the needs of today's business and software development environments. Studies [1, 10, 11] 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 an interpretative in-depth case study to explore our research questions within the natural setting of *one* successful XP project. We used semi-structured one-on-one interviews to collect the data for this paper. The five interviewees covered the spectrum of the XP roles including the 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. We use a number of quotes from the interviews to illustrate our findings in this paper. Please see the technical report on this research [9] for further information on the research method.

## 3 Description of the Context of the Experience

The subject of this study was an intranet Content Management System (CMS). CMS was an outsourced software development project and involved the three organisations as described in table 1.

KiwiCorp's project lead on CMS describes the beginnings of the project below.

*“Internet redevelopment in [KiwiCorp] had sort of been mooted for a couple of years and various people had sort of had a go but nothing really worked too well, and then my manager got handed the job of sorting out the intranet” – Customer, KiwiCorp*

**Table 1.** The Organisations involved in the CMS Project

Pseudonym	Project role	Description
KiwiCorp	Customer organisation	A large New Zealand corporation with employees dispersed throughout the country.
DevCorp	Outsourced software development company	A New Zealand based company specialising in providing Internet, extranet and intranet solutions. The company is wholly owned by an international consulting company.
BureauCorp	Outsourced infrastructure services company	An international information technology services company that supplies facilities management services. This company is responsible for the physical infrastructure CMS will be tested and deployed on.

CMS was established in the middle of 2001 with DevCorp as the outsourced software development vendor.

*“We felt we could probably only do it if we used [DevCorp] ... because we had such a lot of confidence in them based on previous experience” – Customer, KiwiCorp*

Initially the project was a traditional waterfall project and was divided into three phases, planning (deciding what to build), development (building the application) and implementation (user acceptance testing, training and roll out). The planning phase focussed on gathering requirements using standard workshop techniques and involved a series of user workshops that were attended by the business users. At the end of the planning phase it was decided to use XP for the development phase. The requirements gathered during the planning phase were used as a basis for the user stories developed as part of the development phase. It was recognised that the formal implementation phase would need to remain as this approach was required by BureauCorp and meshed with the existing practices of KiwiCorp.

CMS was successfully deployed in September 2002. The interviews to collect the data for this paper occurred during the implementation phase, prior to deployment. The indications from KiwiCorp, based on the acceptance testing and training feedback, are that this project is considered a success:

*“This development approach [has meant] we were able to track things as we go and actually discover that things aren’t quite what people wanted and complete them ...The indication [from the testing] is really good ... And the training feedback has been really good too because we’ve done some one on one training with the key publishers – about 50 to 100 odd people ... [and] generally people find it easy to use and are going to be fine with it so that’s really good” – Customer, KiwiCorp*

### 3.1 The Team

The development team consisted of KiwiCorp and DevCorp representatives. At its peak the XP team consisted of 11 full-time members, including the customer. The 10 DevCorp members ranged in experience from 3 years of small web development projects to 23 years of wide ranging software development experience. All of the programmers, except one, were experienced computer programmers. The novice programmer, however, was an experienced business analyst with a background in KiwiCorp's industry. The KiwiCorp customer had recently been involved in another Intranet development project gaining an insight into the software development process.

**Prior Exposure to XP.** All of the team members were new to XP. DevCorp had recently used XP successfully on a similar project. None of the team members on the earlier XP project transitioned to the CMS project. There was strong support in the team for adopting XP as evidenced below.

*"I'd had good reports about it in [project name], I'd read the book and the book made a lot of sense, it was common sense. [and later in the interview] I was willing to give it a go myself but the other thing was the team was willing to give it a go, if the team had pushed back, I probably would have folded ... [goes on to note two particular team members] were very strong" – Project Manager, DevCorp*

The team gained an understanding of XP by reading the XP books, sharing XP experiences with other practitioners of XP and also by regularly reviewing their progress with the method throughout the project. The team's overall impression of XP at the end of the project is summed up by:

*"Overall – I love this approach to development and I'd certainly like to use it again in any future projects I am involved in" – Customer, KiwiCorp*

## 4 Results of the Experience

Our research hypotheses were:

1. How did a customer on a real XP project measure up against the list of ideal characteristics?
2. What tasks did the customer perform on a real XP project and what skills did the customer need to perform these tasks well?
3. How did a customer on a real XP project implement the on-site requirement and what were the flow-on effects of this decision to both the project and the business?

For each of these hypotheses there is well known advice and in the tables below for each hypotheses we compare advice with what our interviews found.

#### 4.1 Characteristics of the Customer

Beck & Fowler [3] have described the ideal preparation for someone playing the customer role. The customer representing KiwiCorp was close to the ideal, as we show in the table below.

**Table 2.** A comparison of the KiwiCorp customer to the ideal customer described in the literature

Ideal customer	Actual customer characteristics
Understands the domain well	The customer's librarian training, combined with her tenure at KiwiCorp, allowed her to understand how CMS must work to meet the diverse needs of the business users. To supplement her knowledge, she involved operational users of the existing system in the process.
Understands how the software can provide business value in the domain	The customer's existing knowledge of similar systems, combined with her perceived value of DevCorp's ideas (the possibilities of technology), allowed her to understand the value software could provide the domain.
Understands the importance of regular delivery	The customer perceived regular delivery as important as it allowed her to evolve the requirements and test the system with operational users.
Understands the importance of prioritising the functionality to be delivered	The customer perceived the importance of prioritisation and worked closely with her senior manager to ensure prioritisation decisions were made effectively. She quickly learnt that she needed to be tougher, earlier.
Accepts responsibility for the success or failure of the project	This aspect, as described here, was not covered sufficiently in any of the interviews to make an interpretation.
Is able to represent diverse users <sup>1</sup> , termed "speaking with one voice"	The customer represented a small KiwiCorp project team including her senior manager, migration manager, testing team as well as the thousands of end users of the system. The initial requirements workshops sessions held during the planning phase assisted her to represent the users and make decisions on their behalf in her role. DevCorp team members all considered the customer as the sole source of requirements and decision making for KiwiCorp. No DevCorp interviewees indicated competing requirements or conflicting decisions occurred during the project. However, one DevCorp interviewee noted their concern that the customer had not consulted the users sufficiently during the process and may have relied overly much on the sessions from the planning phase to make decisions.

<sup>1</sup> Includes operational users, business management and IT operations

**Summary.** According to the existing guidance in XP literature the KiwiCorp customer had almost the ideal preparation for the customer role. However, as we outline in the section below, this preparation alone may not be sufficient to succeed in the XP customer role.

## 4.2 Skills of the Customer

We know from the initial XP books the customer will need to write user stories, test functionality and prioritise requirements in the planning game [3]. The customer on this project did not develop user stories, and a contract tester was hired to assist with the development of test scripts.

However, our customer noted that despite these tasks not being her responsibility, she was still overloaded:

*“I was the main [KiwiCorp] person on the project, I think we needed some extra roles basically. We probably needed about three of me. [and later describing the three roles she played as the customer] The main areas from a business point of view were looking after the product, looking after other issues, technical or otherwise [between the two outsourced vendors, KiwiCorp and BureauCorp], and then another major area was content migration – actually communicating with the existing site owners and working out a plan for them to migrate their staff and all that” – Customer, KiwiCorp.*

The customer elaborated that she quickly realised that she was unable to fulfil the content migrator role as well as the other roles, and a full-time migration project manager was employed. During the interview the customer also considered the potential of applying this lesson on her next project:

*“[Regarding determining that a content migration manager was required] So we should have realised that up front and ...[Interviewer interjected - Perhaps next time you will?] Maybe, I mean it’s all so ... I mean, money, you know” – Customer, KiwiCorp*

The project, to implement CMS, at least from the customer’s perspective, does not only include the development of the software, it also includes the vendor management and implementation activities including rollout, migration and training. It appears expecting the customer to be able to focus only on the requirements and testing may be unrealistic.

The customer also discussed the need for her to consider and understand the diverse needs of thousands of business users:

*“[KiwiCorp is a large organisation and has] such [diverse] needs, we had to ... all the way along I had to be thinking “is this flexible enough”, you know, will it fit this person, will it fit this person [and later] when I felt that I didn’t have enough knowledge to make a call then we would – I’d ask questions of other people in business” – Customer, KiwiCorp*

The customer also elaborated on the importance of understanding how to “get things done” in the organisation:

*“[My manager] was responsible for getting buy-in from the sort of senior level in business ... Well we knew that if we actually got peoples’ formal sign-off – business people to sign-off for everything – we’d never actually get anything done. [and a little later about her understanding of how this approach mitigated that risk] ... Constantly using this development approach we were able to track things as we go and actually discover that things aren’t quite what people wanted and complete them.” – Customer, KiwiCorp*

**Summary.** Existing advice suggests that requirements and testing are the key tasks a customer will undertake. The KiwiCorp customer’s activities, however, suggest there are a number of other tasks she must undertake to ensure a successful project. Further consideration needs to be paid to the other time consuming aspects of the customer role, often ones that require political sensitivity. These aspects include the balancing of multiple roles, understanding the needs of diverse users and obtaining senior managerial support.

#### **4.3 Location of the Customer**

On this project KiwiCorp and DevCorp were situated in different buildings within the central business district of Wellington, approximately a 10-minute walk apart. Beck notes the importance of the time with the developers but assumes other customer separation is acceptable. The customer realised she needed to spend direct “face-to-face” time with the developers as suggested by Beck. However, she also needed to spend direct “face-to-face” time with KiwiCorp stakeholders as well. Her time with KiwiCorp people allowed her to represent them with a “single voice” and also to focus on non-software development project activities such as training and migration. Her initial decision was to spend 50% of her time at each building.

During the project, however, approximately 50% of her time was spent resolving technical integration issues with BureauCorp. The result was that she was unable to spend a significant portion of her time at DevCorp moulding the software to meet the business needs:

*“My life would have been easier if I could have been 100% devoted to requirements and testing ... because I would have been right there when the developers were saying “shall I do it this way or do it that way” right before it had even got to build.” – Customer, KiwiCorp*

Cockburn concurs with and elaborates on the customer’s suggested impact of not being available to the development team:

*“Having a usage expert available at all times means that feedback time from imagined to evaluated solution is as short as possible, often just minutes to a few hours. Such rapid feedback means that the development team grows a deeper understanding of the needs and habits of users, and start making fewer mistakes ... with a good sense of collaboration, the programmers will test the usage experts*



*idea's and offer counter proposals. This will sharpen the customer's own ideas for how the new system should look. The cost of missing this sweet spot is a lowered probability of making a really useable product and a much higher cost for running all the experiments." [4, p. 150]*

An alternative solution, locating the DevCorp developers at KiwiCorp, was briefly touched upon:

*"I would make explicit the fact that typical outsourcing arrangements are what drive development away from the client's premises, thus breaking one of XP's implicit assumptions." – Pre-sales consultant, DevCorp*

Schalliol [13] also worked on a project where they encountered significant customer overload. This team introduced analysts to facilitate the communication activities involved with complex systems with a large diverse user base. This role complemented the existing XP customer role. The communication activities were also planned as part of an iteration. An "issue card" was introduced and placed into the prioritisation sessions in a similar manner to story cards. The roles and procedures introduced in this team were done for a large project, however these suggestions may be relevant to smaller projects, such as CMS, particularly when a large diverse user base exists.

**Summary.** It is clear that the practice of an on-site customer has obvious intended value. How to achieve this requirement and still obtain the required "single voice" of a customer over multiple locations, which is common in outsourcing, can be a significant problem.

## 5 Conclusions

We set out to investigate the practicalities of succeeding in the implementation of the XP customer role. We conducted an interpretative in-depth case study that obtained multiple perspectives, including both the customer and programmers perspectives, on the implementation of the customer role on a successful XP project. From these perspectives a consistent picture emerged concerning the customer role.

The customer on this project was clearly overloaded, despite her apparent ideal preparation for the role and enthusiasm for the process. The time required to represent thousands of diverse users and cover the larger project activities, including implementation and vendor management, was significant and diminished the time the customer could spend with the programmers. The impact of the diminished time affected the quality of the product and may have increased both the cost and duration of the project due to the resulting long feedback loops. The outsourcing nature of the contract may have affected this finding but it appears the predominant factor was the large diverse user base and other project related tasks such as vendor management and implementation.

We believe that our project shows that, even when most of the relevant XP practices have been followed, the customer role is difficult and requires serious consideration. XP has focused on building effective development team practices: we now need to turn our attention, given the pivotal nature of the customer role, to exploring the processes that will support the XP customer.

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