

# **Customer and User Requirements Modeling Enhanced Software Development**

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## **Abstract**

This paper explores various software models for business globalization and the nature of customer requirements. It discusses building a new model which the customer need involve System Development Models as well as the system user requirement before building customer applications.

## **Introduction**

There are many device industry is globalizing. As part of that trend, companies are developing products for sale worldwide rather than developing devices just for a particular market. This shift has placed new demands on design teams. The purpose of this roundtable was to identify these demands and to share opinions on how to best address them. The participants in the roundtable have backgrounds in human factors and user-interface design. We discussion focuses specifically on the best or most practical way to develop customer and requirements simultaneously. I agree that many companies are designing an increasing proportion of products for customer. Approximately 50% of sales are international [1]. It's a mind shift for a company that started off focused primarily on the U.S. market, and so we are reminded every day that we're working on international products. Consistency in user interfaces lets users make less error and they feel more secure in what they do. In theory all clients should conform to the requirements, in practice mileage depends on what the client technology gives [2]. In the innovation process, we have identified three distinct types of information that must be captured from customers to measure performance. They are the "jobs" customers are trying to get done when using a product or service; the "outcomes" they are trying to achieve when performing these jobs in a variety of circumstances and the "constraints" that stand in the way of them adopting or using a new product or service. Jobs, outcomes and constraints are critical inputs to the innovation process because they represent the three primary avenues in which managers are able to achieve growth: (1) by helping customers perform ancillary jobs or new jobs that could not be performed before, (2) by helping customers better perform a specific job, or (3) by helping customers overcome the roadblocks that stand in the way of them performing a specific job altogether. The basis for the application of different user requirements methods is a simple process as shown in Figure 1 below encompassing 4 elements:

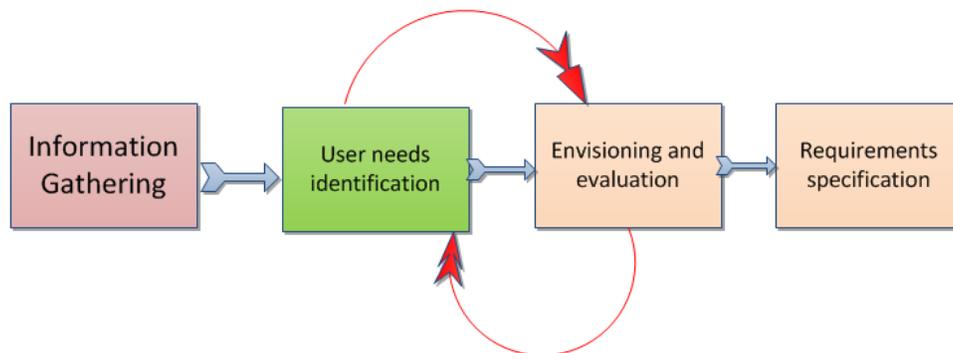


Figure 1.1: General process for user requirements analysis

The four stages, and methods used to support the stages, are described in the next sections, followed by a summary table highlighting the advantages and disadvantages of each technique.

## **Effectiveness of user requirements analysis**

The effectiveness of user requirements analysis in the beginning of a development project depends to a large extent on the type of project.

Collecting user requirements for consumer products requires much effort, and the risk to fail is still very high. As long as consumers have no idea of the innovative product or service, it will be very difficult for them to state their needs. Creativity of designers is required for the transfer of user requirements into innovative consumer products.

For the development of professional applications precise user requirements analysis and specification is essential. Professionals often are available who perform the tasks under investigation.

Task analysis is mandatory for the development of safety critical applications. A characteristic of safety critical work domains is that tasks and procedures are precisely defined before new support tools are built. This is a good precondition for the specification of functional and non-functional requirements.

#### **Developing requirements for customer applications**

Collecting user requirements for consumer products requires much effort, and the risk to fail is still very high. As long as consumers have no idea of the innovative product or service, it will be very difficult for them to state their needs. Creativity of designers is required for the transfer of user requirements into innovative consumer products.

It is a much more complex process to develop customer requirements. You have many more players who desire input. And once you've collected and interpreted the input, you have to go back and verify that you got it right.

If the customer requirements are not fulfilled, the customer will be extremely dissatisfied. On the other hand, as the customer takes these requirements for granted, their fulfillment will not increase his satisfaction. The must-be requirements are basic criteria of a product. Fulfilling the must-be requirements will only lead to a state of "not dissatisfied". The customer regards the must be requirements as prerequisites, he takes them for granted and therefore does not explicitly demand them.

They also get feedback from the people who train customers to use products, as well as service products. So, while their information may be biased, it still has considerable value. You just have to further validate the information by means of follow-up analysis. Lacking input from managers, the task of developing customer requirements would take much more time and effort, which is often unacceptable because of a tight development schedule. But with new technology used by all people it could be help to almost too tight the schedule.

#### **Conducting Web-based surveys**

They have a lot of experience hosting surveys, compiling the data, and getting the results back in short order. But, you still have to recruit the right people to complete the survey. Current customers are much more likely to participate in the survey than noncustomers. If our study concerns cardiology, I simply pull from our database of cardiology customers. In my company, we've had success sending software user-interface prototypes to prospective users via e-mail. Recipients can run the prototypes in a standard browser. Using Web conferencing tools, we can direct a pretty effective walkthrough or even a full-blown usability test without leaving the office.

Surveys can help determine the needs of users, current work practices and attitudes to new system ideas. Surveys are normally composed of a mix of 'closed' questions with fixed responses and 'open' questions, where the respondents are free to answer as they wish. This method is useful for obtaining quantitative as well as some qualitative data from a large number of users about the problems of existing tasks or the Questionnaires are useful for collecting information especially we collect in the World Wide Web customers. Sometimes the questionnaires are not promptly replied and several follow-ups/personal interviews may be required to get questionnaires back from respondent's current system.

Even the survey takes more time and that will affected to the time scheduling of the project need more time, but give's a successful project lives more longer than a normal design. And to be successful at requirements gathering and to give the project an increased likelihood of success follows these rules:

1. Don't assume you know what the customer wants, ask.
2. Involve the users from the start.
3. Define and agree the scope of the project.
4. Ensure requirements are specific, realistic and measurable.
5. Gain clarity if there is any doubt.
6. Create a clear, concise and thorough requirements document and share it with the customer.
7. Confirm your understanding of the requirements with the customer (play them back).
8. Avoid talking technology or solutions until the requirements are fully understood.
9. Get the requirements agreed with the stakeholders before the project starts.
10. Create a prototype if necessary to confirm or refine the customers' requirements.

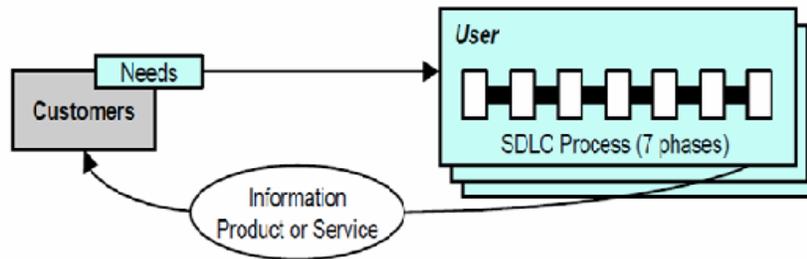
#### **Model of User and Customer Satisfaction**

User requirements analysis is an error prone part of the development process and errors not detected at this stage may lead to expensive system failures later. For this reason, user requirements should be verified as soon as design solutions and prototypes are available.

SDLC is not limited to technical activity but actually begins with customer needs and evolves through processes and user requirements to develop a solution or support process.

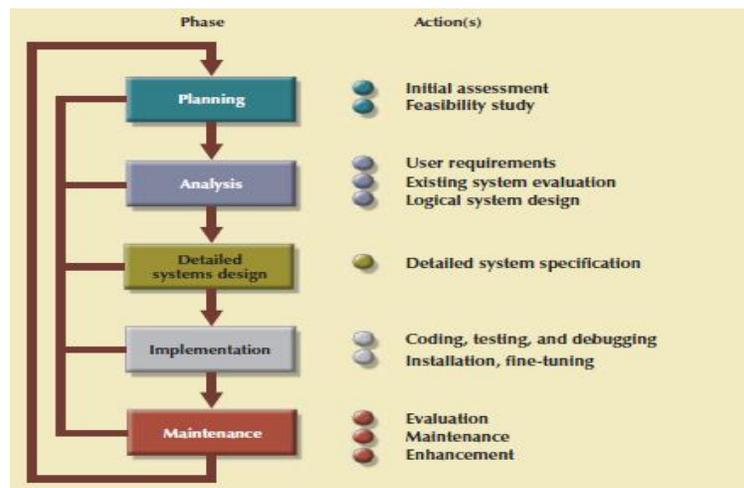
The primary objective of implementing a standardized SDLC policy is to provide coordinated excellent service, at reduced costs, to support the activity of customers.

A simplified and common framework for implementing SDLC will improve communications and promote coordination across projects Figure 1.2



**Figure 1.2** Customer need

As illustrated in Figure 1.3, the traditional SDLC is divided into five phases: planning, analysis, detailed systems design, implementation, and maintenance. The SDLC is an iterative rather than a sequential process [4].



**Figure 1.3** The system development life cycle (SDLC)

During this phase Implementation we use state of the art bug tracking and customer feedback systems to make sure that every issue is properly addressed. Quality assurance department is also responsible for producing statistical data which later is used to improve the development process.

Software development model is carefully selected based on the user requirements as well as the customer requirements. Most customers are not technologists, engineers or scientists and do not know the best solutions as a result, giving customers the solutions they request often leads to customer disappointment.

A specification is an input in which the customer states the desired size, weight, color, shape, look, feel or other product and service performance characteristics – in an attempt to shape the solution.

Customer need is a universal form of input and is typically stated as a high-level descriptor of quality. It is not uncommon for a customer to say that they want a product or service to be “reliable”, “effective”, “robust”, “stable”, “resilient”, “consistent”, “powerful”, “resistant”, “serviceable” or “dependable”.

During the designing the system usually the software developer depend on the user requirement not to the customer requirements which can be the new software system developer not satisfy the customer needs. Then the final system in reality cannot proceed as successful system.

The new basis for the application of different user requirements methods and different customers is a process as shown in Figure 1.4 below encompassing 4 elements:

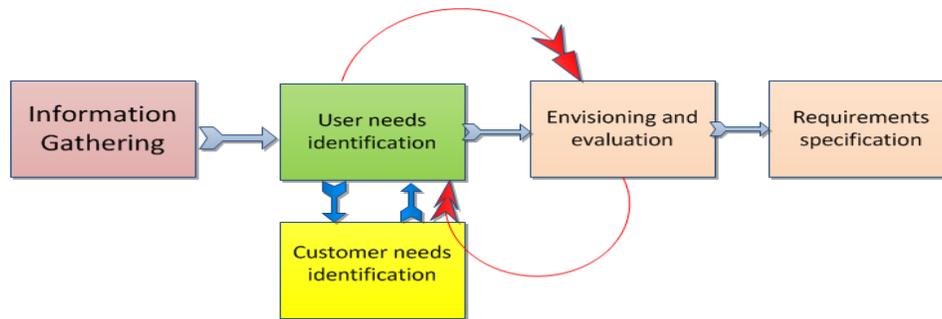


Figure 1.4: General process for user requirements analysis

My model Figure 1.5 suggests that the entire requirement should satisfy both user and customer needs. And the evolution the system before the release it comes from the both (User & Customer) in stage of Acceptance & Installation. If the user and customer acceptance the system release otherwise should go back to user and customer for requirements change that make the SDLS is more “reliable”, “effective”, “robust”, “stable”, “resilient”, “consistent”, “powerful”, “resistant”, “serviceable” or “dependable”.

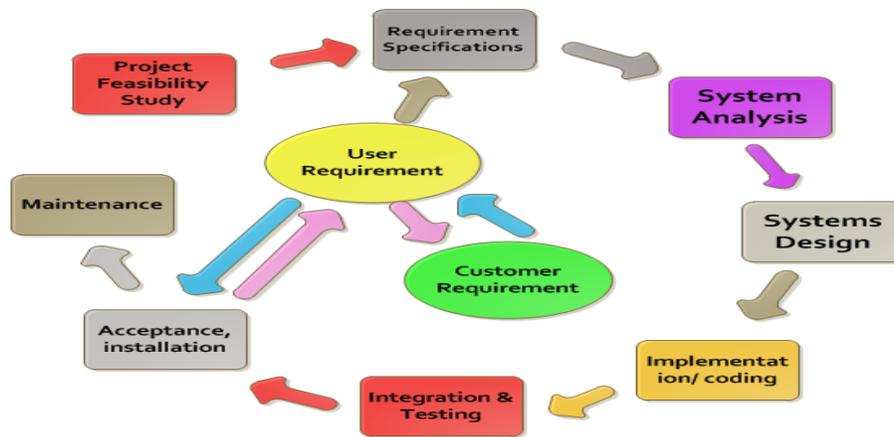


Figure 1.5 Circles - Model

### Recommendations and Conclusion

The study found it imperative to recommend the following:

These recommendations are based on the finding of this research and this research and it is hoped that they would go a long way in making the use of the development the software system user and customer much easier. The analysis of user’s requirements and customer requirements studies would help not only the clients and customer, etc., but also the software developers/designers; creators, software creators, programmers and other information professionals in determining what information and delivery package are required by users and customer. The recommendations are:

1. The study found that software system development need user requirements as well as the customer requirements.
2. The findings that system developing depend on user and customer at the same time is more secure for a system to live more longer as well as been a great robust.
3. With most of the Internet users comfortable/satisfied using the Internet, it goes to show that it is the medium of the moment

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