

White Paper



User Requirement Elicitation for Package Implementations

How to accelerate?

Dinesh Mohan, Manish Agarwal

Abstract

Requirement gathering effort depends on the size and complexity of the project, but is typically from 12 percent to 15 percent even for the smaller projects¹. Use cases are an effective methodology to elicit user requirements. Errors made during the requirement stage account for 40 to 60 percent of all defects found in a software project², which further augments the significance of gathering requirements correctly and completely.

This paper highlights a proactive approach for eliciting user requirements in any package implementation. The approach will be most effective for the mid-market customers who have lot of home grown processes to do their daily tasks and but are not as per the industry standard. It is assumed that the customer has already decided the package in this approach.

Every package has pre-defined steps to achieve the tasks the user needs to perform. In this proposed approach, business analyst prepares an exhaustive list of use case scenarios provided by the package. For each of the defined use case, steps are pictorially represented. Business analyst walks the user with the list of use case scenarios and makes it comprehensive after discussing with the users. For the use case steps, business analyst start with the pictorial representation and then the users highlight any deviations in the pre-defined use case steps.

The proposed approach can reduce the user requirement elicitation effort substantially depending on the maturity and complexity of the customer use cases as the analyst is not starting from scratch. Users get an opportunity to acclimatize with the package use case steps thereby initiating the organization change management in the requirement elicitation phase. Users get idea of the package fitment and might want to adopt some of the best practices processes offered by the package to ensure easy maintenance and upgrades in future.

¹Wieggers, Karl E. 1996a. *Creating a Software Engineering Culture*. New York: Dorset House Publishing

²Davis Alan M. 1993. *Software Requirements: Object, Functions and Stat*. Englewood Cliffs, NJ: Prentice Hall PTR & Leffingwell, Dean.1997. *Calculating the Return on Investment from More Effective Requirements Management*. *American Programmer*10(4): 13-16

Traditionally users have given the user requirements, which are documented as use cases by the business analysts. Business analyst starts with the questions “What are the tasks you want to perform with the new system”. As per the proposed approach, analyst starts with “These are the tasks which you can perform with the new system. Please let me know if there is something beyond these which you need to perform”. Even for the use cases steps, analyst asks “These are the steps which system supports. Is there anything which you do differently to accomplish the task”? The paper details given below three steps methodology to achieve the above mentioned objectives.

- Preparing exhaustive list of use case scenarios
- Representing the user actions for the identified scenarios
- Incorporating the system action against the use case scenarios

This methodology can be further extended to define generic business rules and get it validated by the users to ensure business requirements are complete.

Preparing exhaustive list of use case scenarios

The first step is to prepare a detailed list of use case scenarios provided by the package. Some of the use cases scenarios which are offered for Accounts Receivable module of an ERP is given below.

- Create Sales Order
- Confirm a Sales order
- Registration of goods against sales order
- Credit check for the customer
- Invoice a Sales order
- Generate a delivery slip
- Generate an Invoice
- Add freight, customs, and other incidental charges to sales order
- Add discount to sales order
- Cancellation of Sales Order
- Commission payment to Sales person

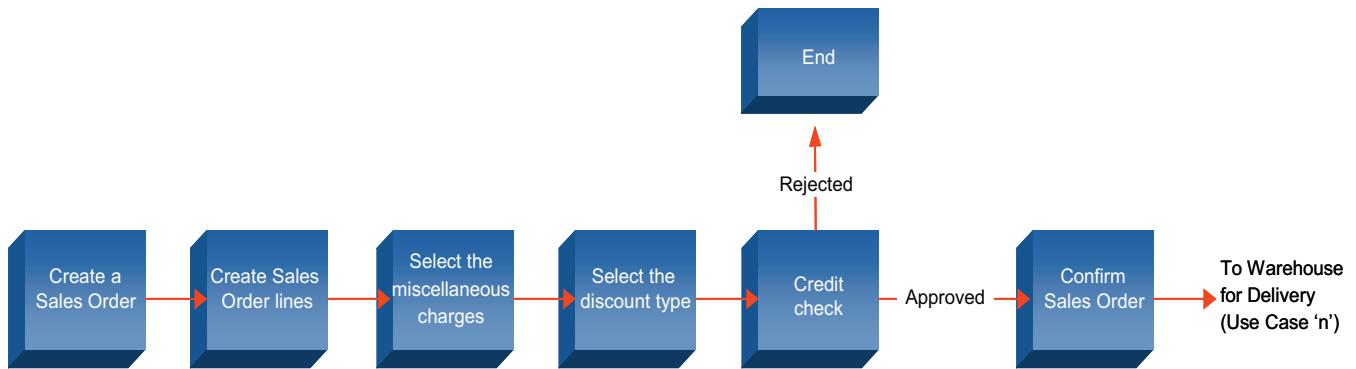
This is a sample list. Business analyst needs to prepare an exhaustive list of scenarios for the workshop.

Representing the use actions for the identified scenarios

For each of the scenarios identified, user steps are pictorially represented as shown below. To illustrate the concept, let us assume the steps to be followed for sales order creation.

- Create a Sales order
- Create Sales Order lines
- User selects the miscellaneous charges applicable for the order. These can be freight, loading, packing charges etc.
- User selects the discount applicable for the order. These can be at the order level, line level and can be fixed, based on trade agreement with the customer.
- User does the credit check for the customer.
- If the credit check is approved, order is confirmed.
- This order is then send to the warehouse for delivery.

The above given steps can be depicted pictorially as given below.



When the analyst discusses these package defined order creation steps with the users, users might come up with a deviation that the discount is calculated for the order before the miscellaneous charges are entered. The reason can be that discount is also applicable on the miscellaneous charges. So this is a deviation from the package defined process.

If the customer does not have an existing system, customer might adopt this process. Or if the customer has an existing system, they might be willing to change their current process in order to adopt the industry standard.

Incorporating the system action against the use case scenarios

The above diagram can be extended to include the system actions against each of the user actions. Any gaps in the way system should respond on each of the above user actions can be identified during the workshops.

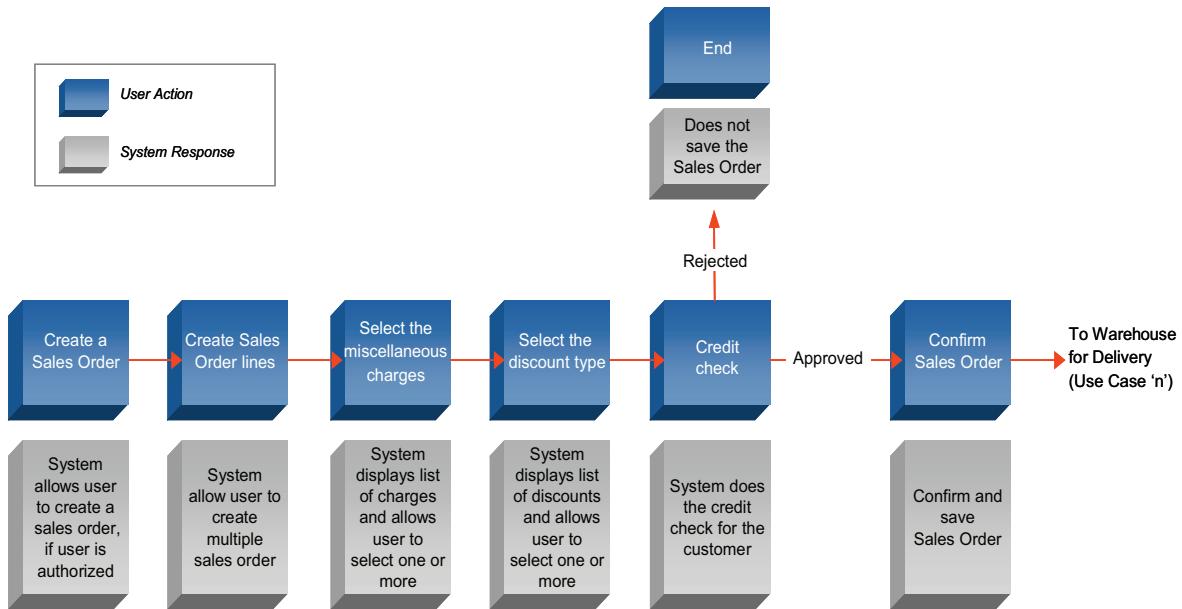
Main Scenario M1: Create a Sales order

S. No	User Action	System Action	Alternate
1	Create a Sales order	System allows user to create a sales order, if user is authorized	
2	Create Sales Order lines	System allow user to create multiple sales order	
3	Select the miscellaneous charges	System displays list of charges and allows user to select one or more	
4	Select the discount type	System displays list of discounts and allows user to select one or more	
5	Credit check	System does the credit check for the customer and is approved	A1
6	Confirm Sales order	If credit check is approved, confirm Sales Order	

Alternate Scenario A1: Create a Sales order

S. No	User Action	System Action	Alternate
1	Credit check	System does the credit check for the customer and is rejected	
2	End	System does not create the sales order	

The above can be pictorially represented as given below.



Extension of the approach

The above mentioned approach can be further extended to incorporate pre-defined business rules provided by the package and then incorporating the deviations as per the business requirement. An example is explained below:

- Package defined: Each sales order shall have a unique sales order number.
- Post-workshop: System shall provide a six character alphanumeric unique sales order number starting with AB.

How to execute the approach for the customer

It is assumed that the business analyst has pre-set of the use cases and details steps defined for the package to be implemented for the customer. The business analyst shall follow these given below steps to execute the proposed methodology.

- Business analysts shall go through the as-is user process documentation with respect to the customer if it is available. If not, start from step 2.
- Business analyst explains the user requirement elicitation process to the users. This will set the right expectation and users will try to collaboratively work on the methodology.
- Business analyst conducts the workshop to prepare a list of all the use cases.
- Business analysts segregate the use cases which are already defined in the package from the ones which are unique for the customer.
- Business analyst starts with the use cases which are available in the package. The detailed steps he/she needs to follow for each use case is given below.
 - Prepare a pictorial representation of the use case.
 - Understand the As-As use case steps by the user.
 - Walks through the detailed use case steps provided by the package with the users.
 - Use cases shall be updated for extra steps/redundant steps in collaboration with the users.
- One all the package provide use cases are covered with the users, business analyst shall prepare the detailed steps for the customer required unique use cases and prepare a pictorial representation of the same.
- All the use cases and the detailed steps shall be signed off by the customer.

Key Advantages of the approach

Some of the key advantages of the propose methodology are given below.

- **Saving on user requirement elicitation time:** The business analyst will save time by proactively starting with the pre-defined package use case scenarios and their steps in the requirement elicitation workshops/focus group or interviews.
- **Process Standardization:** There are many mid market customers who do not have standardized processes and wish to adopt the processes defined by the selected package. This exercise will give them an opportunity to evaluate and adopt the industry defined processes.
- **Organizational change management:** The proactive demonstration of the use case scenarios and the detailed steps will enable the users to get a better understanding of the package process steps. Project team (users and implementation partner) is starting the organization change management process during the requirement elicitation phase itself which is one of biggest challenges in any implementation.
- **Product fitment:** The project team will be able to identify any process deviations from the one provided by package via the proposed methodology.
- **Exhaustive list of use case scenarios:** The chances of some use cases being missed out is reduced via this approach. It will also help the customers fully utilize the package in case there are some use which users do not have presently as part of their processes.
- **Identification of all User Class:** It is quite common that a specific user class is completely missed out during the requirement gathering exercise. This process will help the implementation team prevent this.
- **Saving on the Test Case preparation:** Test cases can be derived from the use cases very early in the project.

Key Challenges

Business Analyst profile

The proposed approach assumes that the business analyst has complete understanding of the package. This might not be true in all situations as requirement gathering exercise is system or package agnostic.

Voice of customer

Conventionally users are used to specify the use cases and subsequently the analysis is done. In the proposed methodology, analyst starts the use case workshop with the pre-defined scenarios and users provide their feedback on the demonstrated scenario/their steps. This might be challenging for the business analysts to get user familiarized with the new methodology.

Customer needs to be educated with all the benefits of this new user requirement gathering methodology.

About the Authors

Dinesh Mohan is a Senior Principal with Enterprise Solutions in Infosys, with more than 15 years of experience in designing, developing and deploying information technology based business solutions for global customers. He has provided consulting services to corporate across Utilities, Healthcare, Manufacturing and Banking domains in ERP/CRM roadmap definition, technology adoption and optimization. With Infosys, Dinesh runs the industry micro-vertical solutions ideation, development and go-to-market planning on Microsoft Dynamics suite of business applications.

Manish Agarwal is a Senior Consultant as a part of Enterprise Solution group of Infosys. He is one of the founder members of the Dynamics Practice. The practice specializes on a variety of service offerings for Dynamics Suite of packaged applications. Manish has seven years of experience working as a Consultant and Program Manager for various engagements across the globe. He is an Electronics and Communication engineer and an MBA by education. Manish is presently based out of Hyderabad.



For more information, contact askus@infosys.com

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