

Market Driven Requirements Elicitation via Critical Success Chains

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1. Introduction

In recent years consumer oriented information systems development has become increasingly important matter as more and more complex information systems are targeted towards consumer markets. Even though IS has sought answers for complex development problems through its history we argue that developing IS for non-organizational users creates new problems that IS and requirement engineering (RE) community should attend to. First of all elicitation of requirements becomes more difficult as usually consumers do not explicitly know what they want and it is difficult for them to express their ideas. To support different views of product development, such as project management and design, the method should present requirements in a 'rich enough' way to avoid overloading management but in the same time giving designers the detailed information they need. Last but not the least the results of requirements engineering should be easy to integrate to the software development process. To this end we have constructed a support environment for the method within Metaedit+ Meta CASE tool to present and manage the requirements.

We have developed a new method that tries answering the described complexities of development process. We based our method on Critical Success Chains (CSC) method, that includes a top-down approach of planning but also wide participation of IS customers to get rich information. CSC aggregates the results of many individual interviews into meaningful graphical models of what is important about a potential system. In our work CSC is extended with customer segmentation and lead user concepts from marketing.

2. Construct of Method

The requirement elicitation method, The critical success chains (CSC), originates from Information Systems Science and was developed by [1, 2]. The process of the method is described in Table 1 where we provide a step-by-step review of the method. However, we first must define a meta-model in order to engineering a new method. Therefore we did a simplified version of

the CSC model using GOPRR within MetaEdit+ [3]. The formal metamodel allows immediate tool support for the models and it is presented in figure 1.

CSC Process	Objectives
1. Prestudy Preparation Determine scope & participants. Collect project idea stimuli.	Determine scope to manage complexity. Select participants to represent views you want to understand. May be employees at various levels, suppliers, customers, and experts. Arrange for data collection. Collect interview stimuli.
2. Data Collection Elicit personal constructs from org. members.	Ask participant to rank-order stimuli on importance. Ask series of "why would this system be important..." questions to collect consequence and value data. Ask series of "what is it about this system that makes you think it would do that..." questions to collect attribute data. Record answers as linked chains. Collect several chains from each participant.
3. Analysis Aggregate personal constructs into CSC models.	Interpret individual statements and label consistently across participants. Cluster chains. Map clusters into network models.
4. Ideation Workshops Elicit feasible strategic IS from technical and business experts and customers.	Recruit workshop participants with technical and business skills. Evaluate CSC network models and develop 'back-of-envelope-level' ideas for IS projects that satisfy the relationships implicit in the models. Create brief system descriptions and network business value models for each idea.

Table 1. Critical Success Chains Method - Process description (slightly modified from [2])

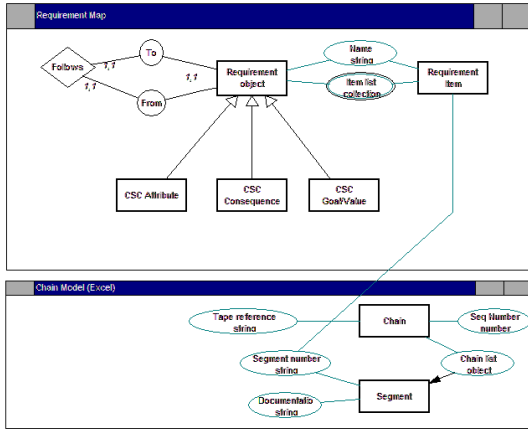


Figure 1. Meta model of CSC

The CSC method starts by selection of participants for elicitation process. After selection process the prospects are contacted and stimuli for the system are collected informally. These are later used in requirement elicitation where the method utilizes a variation of in-depth interview for these lead-users. The laddering has been used successfully in marketing to define features of consumer products (see [4, 5]).

In CSC the collected ladders are linked to critical success factors of an information system that are further divided to system attributes, consequences of these and goals or values of stakeholders. In analysis these are clustered by researchers and the results are presented using rich graphical presentation showing aggregated features, consequences resulting from them and values or goals that explain why users want these as presented in figure 2. In our Meta model of CSC, figure 1, we have presented a preliminary approach to integrate the CSC elicitation method and its philosophy of representation of requirements to Metaedit+ Method engineering environment. We present slight changes to the original way of representation by adding three specific features: 1) segment number identifying the requirement (an individual ladder), 2) Chain list object for effortless handling branching chains, and 3) Tape reference connected to chain. We argue that by these modifications of the original method we can tackle most of the difficulties faces by practioners when considering losing the traceability of requirements to the source.

The last step of CSC is to present the models to an ideation workshop that judges if 'go-ahead' decision is given for the found IS features. We also suggest that in the future during this workshop the firm R&D people are familiarized with the developed tool.

We are currently performing trials of the first version of the method with a large user organization. When the experiences of the first project are collected, we will

develop a second version of the method. In the future research we will also seek to empirically validate the use of market research oriented methods, such as CSC in RE by using the method in several product development projects. More information about the project can be found in <http://go.to/tuure>.

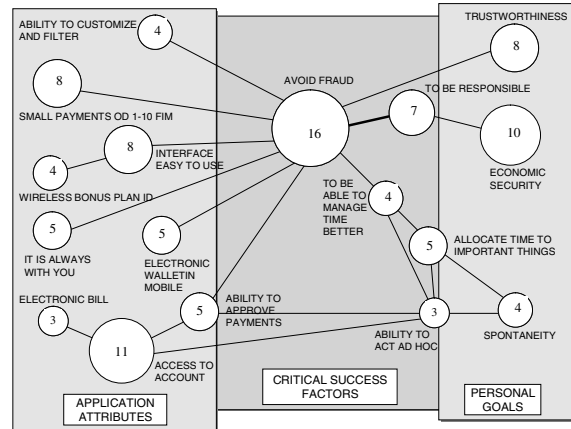


Figure 2. Example CSC map (adapted from [2])

3. References

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