Case Module : Assessing Customer Needs
Prerequisite Knowledge: enrollment in a software engineering course.
Learning Objectives: Upon completion of this module students will have increased ability to: 1. Analyze a customer need statement and the initial set of requirements for a system. 2. Acquire additional information from a customer about his/her needs. 3. Work more effectively as part of a team.
Keywords: Customer Needs, Requirements
Case Study Artifacts: 1. DH Customer Need Statement 2. DH High Level Requirements Definition (HLRD) 3. DH Background Scenario 4. DH Team Biographical Sketches 5. DH Launch Scenario
Case Study Participants: • The DH Team • A representative from the HomeOwner Marketing Division:
Scenario: In early August of 2010, HomeOwner Inc. (the largest national retail chain serving the needs of home owners) established a new DigitalHomeOwner division that was set up to explore the opportunities for equipping and serving "smart houses" (dwellings that integrate smart technology into every aspect of home living). In August and September of 2010, the Marketing Division of HomeOwner conducted a needs assessment for a DigitalHome product that would provide the computer and communication infrastructure for managing and controlling the "smart" devices into a home to best meet the needs and desires of homeowners. The Marketing Division produced two documents: the *DH Customer Need Statement* and the *DH High Level Requirements Definition* (HLRD). Using the documents developed by marketing, DigitalHomeOwner has just launched a pilot project (called the DH project) to examine and assess the technical and developmental issues of the smart house concept. A five person team was assembled for the project in early September 2010 and started a "project launch". During the launch of the DH Project, Disha Chandra, the DH team leader, asked Jorge Ortiz, the DigitalHomeOwner Director, if he could set up a meeting with someone in the HomeOwner Marketing Division to discuss the questions the DH Team had about the HLRD. Jorge contacted the Marketing Division Head and set up a meeting between the DH Team and Karen Mullen, the lead for the DH needs assessment effort. On the Friday before the meeting with Karen, the DH team meets to plan its interaction with Karen.
Exercise: 1. As preparation for the case method, ask each student to read the Case Study Artifacts listed above. 2. Divide the class into a set of small teams (3-4 people).

3. Each team takes on the role of the DH Team and prepares for a meeting with Karen Mullen. The team should carry out the following tasks:
   a. Analyze the DH HLRD and discuss any problems or concerns about their understanding of the HLRD.
   b. Formulate objectives for the meeting with Karen.
   c. Make up a set of questions the team would like answered, prior to commencement of project planning and software requirements analysis.
   d. Assign individual roles for the meeting (e.g., meeting facilitator, taking notes, asking questions, etc.).
   e. Make up an agenda for the meeting.
   f. Document their work in the Meeting Preparation Form in the Exercise Booklet

Appendices:
Exercise Booklet

Resource Information:

Teaching Notes:
- This case module could be used in different level courses (from a freshman level introductory course in software engineering to an upper level or graduate course in requirements engineering).
- Although this case module designed as a team exercise, there are a couple of other ways the case could be used:
  - ➢ This could be a teacher-led discussion of the issues related to the need assessment of the DH product, what questions need to be answered before the DH project can go forward, and how to conduct a productive meeting.
  - ➢ Students could be assigned as an individual homework assignment of studying the case module materials and completing the Meeting Preparation Form.
- Assuming an adequate student preparation for the exercise, allowing students about twenty minutes for the exercise should be sufficient. It would be beneficial to follow the exercise with a ten to fifteen minute discussion concerning the student team results. Some key points to include in the discussion are the following:
  - ➢ In the *Customer Need Statement*, was the Wright family an appropriate representative the DH product need?
  - ➢ Which features described in the HLRD need the most clarification?
  - ➢ Do you have questions about the DH product that you think Karen will not be able answer and will need further investigation?
  - ➢ Do you know enough about project to start creating a detailed plan for development (tasks to be performed, costs of development, and a project schedule)?
- Student teams should be cautioned about a few things:
  - ➢ This is case method does not concern a full-blown requirements elicitation effort, but rather an initial interaction with a customer (or customer stand-in) to help clarify the high-level requirements statement. Hence, detailed requirements questions are not appropriate. Also, remind students that the HLRD does not represent all of the needs – but a subset, because of time constraints.
  - ➢ The meeting lasts for only one hour, so the team needs to think about how best to use the time.
- If the course involves actual student development teams, this exercise could provide a

good team building experience: it could be carried out at the beginning of a course; it does not require any special technical knowledge; and everyone can participate.

- The course instructor could liven things up a bit by designating each student on a team to role-play a member of the DH team.
- A nice extension to this exercise would be for the instructor (or another student) to play the part of Karen Mullen and have the student team conduct a one hour meeting with her and then assess the results.