How to Find Project Needs (Phase One)

Overview. This document explains how to identify and document the factors that will delight the customers of a design. The desires of the customers are known as the needs. The tool for this task is the Needs Tool.

Key Concepts

Customer Need. A need is a gap between the present situation and what might be, could be, or should be possible. For a given project, needs are the real problems and opportunities that exist. Needs are usually unstated or hidden (latent).

Constraint. A constraint is a limitation or restriction on a possible solutions. A constraint is set only when it is essential. Any solution idea that violates a constraint is an unacceptable solution idea.

Purpose

• Finding needs and constraints reveals the key factors needed for a successful design
• Clear understanding of needs simplifies the project by revealing those factors that truly matter. Understanding priorities allows the project team to focus on results.

Who?

• The project team is responsible for finding needs, dialoging with the client and customer, modifying needs, and communicating the final results
• The client is responsible for giving feedback as the needs are being uncovered by the project team

When?

• Preliminary needs analysis is done during Phase Zero
• Detailed needs analysis is completed during Phase 1

Inputs, Outputs, and Scope of the Needs Analysis Task

• Input. An IPS is completed.
• Output. The needs analysis document is completed.
• Scope. A typical time for needs analysis for a capstone project is 4 hours.
Needs Tool

[This tool is used by project teams to create the needs analysis document. As you use this tool, document your work. When you complete the needs analysis task, post (a) the needs analysis document, and (b) the needs tool.]

Stage 1: Learning & Planning

1. Learn the main ideas
   [Have each team member read chapter 3 and the article entitled “how to find needs” and document their work in your logbook.]

2. Define key concepts: customer need, latent need, constraint
   [As a team, discuss concepts and summarize each key concept below].

3. Establish motivation to learn
   [As a team, list reasons, as many as you can, why learning needs analysis will help you on this project and on future projects. Identify your three top reasons.]

4. Define a goal for the specifications task.
   [As a team, develop a S.M.A.R.T goal that describes your teams outcomes on this needs analysis task. Part of the goal should focus on results and part on learning. A goal is SMART when it is specific, measurable, attainable, a result (not a method), and time bound.]

5. Establish a plan for completing this task.
   [As a team, list ideas, as many as you can, that will help you to complete this needs analysis task with high performance while maximizing learning by team members. Select your best ideas and write down a step-by-step plan for using this tool and completing the task.]

Stage 2: Creating the Needs Analysis Document

[see ]

1. Gather Raw Data From Customers [see p. 56]
   a. Inventory needs uncovered during Phase Zero
      [Review IPS & list the needs that you have already developed. ]

   b. select methods of data acquisition
      [Identify methods of acquiring data such as interview, focus group, observations. Select the most effective methods]

   c. plan the data acquisition
      [Develop a step-by-step plan for acquiring data.]
d. acquire data by executing the plan
   [Document your findings below]

2. Interpret the Raw Data
   a. Identify quality in a needs analysis statement
      [list criteria that define quality in a statement of interpreted need--see bullet list on pp. 61
to 63 and see Exhibit 4-6.]
   b. Write statements of interpreted need
      [Follow example of Exhibit 4-6.]
   c. Write constraints

3. Establish relative importance of needs
   a. synthesize the needs statements into broad categories
      [See exhibit 4-8 for an example--We recommend using three main categories. Note that you
can go to four or five, but two categories is too few, and more than six categories is too
many]
   b. prioritize the main categories
      [Rank order the categories from most important (#1) to least important (e.g #3). Clearly
identify which category is most important.]
   c. prioritize the statements in each main category
      [use *, **, ***, & ! as shown in exhibit 4-8.]

4. Complete the needs analysis document.
   [edit your work and produce a separate document in the format of Exhibit 4-8 on p. 64]

5. Dialogue with client.
   [provide needs analysis document to client; hold a conversation to ensure that you are on
track; keep it simple--all you need to do is carefully listen to your client. Record your findings
below].

6. Iterate
   [as needed, iterate back to steps 1 to 5.]

**Stage 3: Assess Performance & Complete Task**

1. Assess Team Performance
   a. Identify strengths in performance
[Think back to your performance as you engaged in needs analysis and list 3-4 strengths. Write about each strength using the format below

• What. List the specific things you did to achieve strong performance.
• Why? Explain why this strength impacted performance.
• How? Describe the specific steps you took that resulted in strong performance.]

b. Identify improvements in future performance.

[Think back to your performance as you engaged in needs analysis and list 2-3 way that you will improve your performance in the future. Think about this project and about future projects. Write about each improvement using the format below

• Recommendation. Give a specific recommendation about how to improve future performance.
• Action Plan? Explain why this strength impacted performance]

c. List insights.

2. Complete documentation.
   a. Post the needs analysis document (step 4 of stage 2) on your website.
   b. Post the needs tool document on your website.

3. Notify your capstone instructor that you have completed this tasks & that all documents are posted.