ITP 442
Mobile
App Project

Requirements

ICSM

- Incremental Commitment Spiral Model
- Professor Barry Boehm, USC
- 4 Principles:
  - Stakeholder value-based guidance
  - Incremental commitment and accountability
  - Concurrent multi-discipline engineering
  - Evidence and risk-based decisions

Principle 1 and Enterprise Success Theorem

Stakeholder value-based guidance

Theorem: Your enterprise will succeed
if and only if
it makes winners of your success-critical stakeholders

- Proof of "if":
  - Everyone that counts is a winner.
  - Nobody significant is left to complain.
- Proof of "only if":
  - Nobody wants to lose.
  - Prospective losers will refuse to participate, or will counterattack.
  - The usual result is lose-lose.

Win-lose Generally Becomes Lose-lose

Proposed Solution	"Winner"	Loser
Quick, Cheap, Sloppy Product	Developer & Customer	User
Lots of "bells and whistles"	Developer & User	Customer
Driving too hard a bargain	Customer & User	Developer

Actually, nobody wins in these situations

Enterprise Success Realization Theorem

Theorem: Your enterprise can realize

success if and only if

1. You identify and involve all of the success critical stakeholders (SCSHs)
   - Dependency theory
2. You determine how the SCSHs want to win
   - Utility theory
3. You help the SCSHs determine and commit to a win-win course of action and solution
   - Decision theory
4. You adaptively control the course of action to continue to realize a win-win solution
   - Control theory

Tools

- Lots of tools for managing requirements
  - http://www.incose.org/ProductsPubs/products/rmsurvey.aspx
  - http://makingofsoftware.com/resources/list-of-rm-tools
  - http://www.scenarioplus.org.uk/vendors.htm
  - http://www.capterra.com/requirements-management-software/

Keywords

- **Agile:** The tool provides specific artifacts and workflow support for requirements practices in agile development.
- **Issue Management:** The tool provides specific support for issue, request, or defect management.
- **Product Management:** The tool provides specific features for product management, such as portfolio management and release management.
- **Project Management:** The tool provides specific support for project management.
- **RD:** Requirements Development, also denoted Requirements Definition; the tool provides specific functionality supporting the early stage of the requirements lifecycle.
- **RM:** Requirements Management; the tool provides the core functionality for record-based management of requirements, and sometimes also document-based RM.
- **Test:** The tool provides specific support for artifacts and processes of testing, especially in combination with RM (e.g., requirements-based testing).
- **UI Mockup:** The tool provides specific support for prototyping or developing graphical user interfaces.
- **Visual Modeling:** The tool provides specific functionality for graphical models, such as UML, BPMN, or SysML models, or for hand-drawn sketches.

4 Overlooked Requirements

1. User Experience
2. Interruption Handling
3. Performance
4. Accessibility

User Experience

- User experience is more than making the mobile application look nice.
- It also means focusing on interactions between users and the application.
- A good user experience should enable the user to interact with the application naturally, without the need to read comprehensive guidelines or attend trainings.
- The user should be able to learn by using the application and be able to discover functionalities easily.

Interruption Handling

- There are always interruptions to your mobile application, such as incoming phone calls, text messages, low memory or low battery warnings.
- The mobile applications need to handle those interruptions gracefully.
- It is important to communicate and define the expected behaviors clearly in the beginning of the project to align with user expectations.

Performance

- If the application involves network connections to a server, there are typically three types of performance issues that you need to consider and document as nonfunctional requirements and assumptions:
  - Client application performance
  - Server performance
  - Network performance

Accessibility

- Accessibility is generally known as adding alt text attributes in the HTML elements of the page so that the images or graphs within the page can be read by screen readers.
- However, voice over is just a small part of accessibility.
- It also covers areas like font sizes, color contrasts and readability of the text, which assist people who are colorblind to use the application.

Resources

- http://asmarterplanet.com/mobile-enterprise/blog/2014/05/four-mobile-project-requirements-usually-overlooked.html