Improving Product Usability thru Six Sigma

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What is Quality?

- Meeting requirements
- Stated & implied needs
- Defect Free
- Response time - Fast
- Availability
- Security
- Privacy

Do we include this in Quality?

- Good Aesthetic
- Intuitive/ Discoverability
- Adaptable
- Just enough options
- Accessibility
- Usability

How do we evaluate Quality?

- Testing
- Review
- Inspection
- Where are we done?
- What is the exit criteria?

What does user want?

- The uses need software solutions that
  - help them do their work
  - doesn’t confuse them
  - doesn’t slow them down
  - are easy to learn & use
  - doesn’t make harder to finish the job
  - right feedback/message for mistakes
  - cheaper, better, faster, simpler & flexible
  - predictable/consistent behavior - everytime

What we deliver

- A software that meets requirements
- Focus is on reducing defects, etc…
- 10% of the features are used by majority of the people (due to less discoverability)
- Too-techie or Too-basic user interface
- Flow/UI different in different applications
- May not take into consideration usage
- May not understand user needs

Usability

- Easy to use for everyone – without help/instructions
- Intuitive UI / discoverability
- Getting work done with less steps/inputs
- Understanding user needs and providing solution
- Focus on problem-solution, rather than software system flow/requirements
- Just-enough, precise actionable feedback at the right time

Usability - benefits

- Happy users
- Less roll-out cost
- Improves productivity
- Low support cost
- Great boon for accessibility

Usage Centric - usability

- Based on
  - typical needs
  - typical sequence of actions
  - frequency of usage
  - asking just-enough set of inputs
  - context based
  - fault tolerant
  - continuous feedback
  - Consistency, Repeatability & Reproducibility

Six Sigma in Usability

- **D**efine **M**easure **A**nalyze **I**mprove **C**ontrol
- For each feature/scenario follow the DMAIC approach

Define

- The first step is to define the use case scenarios which covers
  - Identify inputs/outputs/process & users (SIPOC)
  - What do the users want (VOC)
  - What is critical for this system (CTQ)
  - How each type of user is going to use it (Process-Map/flow-diagram)

Measure

- What are different ways to get to a *state*
- What are the minimum steps involved in getting to the intended *state*
- Collect data on each type of user on what steps they take to reach this *state*

Analyze

- For each type of users
  - Were they able to find the feature/state
  - Are they using the shortest possible path
  - What were the incorrect steps taken by the user while exploring the path
  - Did the system gave appropriate, actionable feedback for mistakes
  - Was the system tolerant for mistakes?
  - Do we need so many steps/input – can we reduce?
  - Are users happy with the usability

Improve

- Based on the analysis – come up with possible areas of improvement.
- Device improvement plan
- Evaluate multiple options (FMEA)
- Do risk/impact analysis
- Create prototype
- Pilot solution & collect data
- Make changes

Control

- Did we solve the right problem?
- Collect data on usage of the system
- Take corrective actions based on the usage data

True Usability

- Have most commonly used things available at single click
- Make it easy to discover new features
- Have a good “help” document which can search based on the natural language based questions
- Have wizards to aid users to accomplish complex tasks
- Ask the users for the right inputs and guide them in case of errors
- Keep it consistent

Questions?

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