ISO Standards for Usability
Painful Restrictions or Helpful Guidelines?

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Content

1. Overview on existing ISO Standards for Usability
2. Difference between Usability Standards and Technical Standards
3. Do Usability Standards restrict the Freedom of Designers?
4. Shortcomings of ISO Standards for Usability
5. Advantages of applying ISO Standards for Usability
Core ISO Standards for Usability

- ISO 9241, Parts 1 – 17
  “Ergonomic requirements for office work with visual display terminals”
  Parts 1…9: Hardware, Environment
  Parts 10…-17 Software

- ISO 13407
  “Human-centred design processes for interactive systems”

ISO Committee, responsible for development of usability standards:
  ➤ ISO Technical Committee TC 159 “Ergonomics”
  ➤ Sub committee SC 4 “Ergonomics of human system interaction”
  ➤ Working Group WG 5 “Software Ergonomics”
ISO Definition of Usability

The extent to which a product can be used by specific users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

Note: The aim of developing usable products is to enable users in achieving the results of their tasks by taking into account the impact of the product's context of use.
ISO 9241, Parts 10...17 - the software parts

Part 10: Dialogue principles
   Suitability for the task, controllability, …

Part 11: Guidance on usability
   Definition, Context of Use, Effectiveness, Efficiency, Satisfaction

Part 12: Presentation of information
   Organization of information, Graphical Objects, Coding Techniques

Part 13: User guidance
   Common Guidance recommendations, Prompts, Status Information, Error Management, Help

Part 14: Menu dialogues
   Menu structure, menu navigation, Option selection and execution

Part 15: Command dialogues
   Command structure and syntax, command representation, Command Input and Output

Part 16: Direct manipulation dialogues
   Manipulation of objects

Part 17: Form filling dialogues
   Form filling structure, input considerations, Form feedback, form navigation
<table>
<thead>
<tr>
<th>Part 11</th>
<th>Parts 10 / 12</th>
<th>Parts 13 - 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept of Usability</td>
<td>Dialogue and presentation of information</td>
<td>Dialogue techniques and product attributes</td>
</tr>
<tr>
<td></td>
<td>Design principles</td>
<td></td>
</tr>
<tr>
<td>Context - of - use analysis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ISO 9241, Parts 10...17**

- **Concept of Usability**
- **Dialogue and presentation of information**
- **Dialogue techniques and product attributes**
- **Design principles**
- **Context - of - use analysis**

**.generic** | **specific**
ISO 13407
“Human-centred design processes for interactive systems”

1. Identify need for human-centred design
2. Understand and specify the context of use
3. Specify the users and organizational requirements
4. Produce design solutions
5. Evaluate design against requirements
6. System satisfies specified user and organizational requirements

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Technical standards versus Usability Standards

Technical Standards
- typically contain requirements, e.g. “height of a dish washer”
- can be directly assessed for compliance

Usability Standards
- typically contain recommendations, e.g. “menus should be arranged in the order that users expect.”
- recommendations need to be applied within the “context of use”
- recommendations need to be transformed into requirements within the “context of use”
- compliance can only be achieved within the “context of use”

Note:
Usability standards are not style guides nor check lists.
They allow for a wide range of solution proposals across platforms.
Content

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The context of use defines the freedom of design

- The recommendations given in ISO 9241 aim at preventing users from usability problems, such as
  - unnecessary dialogue steps (suitability for the task)
  - user goes the wrong path due to misleading information (suitability for the task)
  - required information cannot be found (self descriptiveness)
  - unexpected reaction of the system (conformity with user expectations)
  - user cannot navigate the required direction from his perspective (controllability)
  - user makes a mistake and does not manage to recover from the mistake immediately (error tolerance)

- The recommendations given in ISO 9241 don’t prescribe specific solution proposals but rather help identifying design rationales.
Content

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Shortcomings of ISO Standards for Usability

- Principles and recommendations can easily be misinterpreted to be user requirements (which they are not).

- ISO Standards are “hard to read” and lack of illustrations.

- Context-of-use information is needed in order to apply the given recommendations.

- ISO standards for usability cannot be applied like simple check lists, since they require a clear understanding of
  - the concept of usability
  - design principles
  - context of use

- ISO standards for usability are never complete. They represent the state of consensus across countries.
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Advantages of applying ISO Standards for Usability

- Recommendations within ISO Standards shorten decision processes by offering existing guidance (ISO 9241-10…17 contains more than 400 recommendations.)

- Usability staff can refer to Internationally approved recommendations rather then getting “accused” for “pushing their opinions through”.

- User requirements can be based on commonly accepted recommendations in order to obtain design rationales.

- ISO Standards for Usability help to gather a common understanding and “code of practise” within and across design teams.
The German Standard Usability Test based on ISO 9241
(published by DATech - Deutsche Akkreditierungsstelle Technik e.V. 2001)

1. Context Scenario(s)
   Including the key tasks

2. Specification of user requirements on context level

3. Usability Inspection of Usability Problems On “Context Level”

4. Description of evaluated Usability Problems On “Context Level”

5. Participatory Observation of all key tasks (e.g. 1…3)

6. Identification of Usability Problems on “Dialogue Level”

7. Use Scenario 1
8. Use Scenario 2
9. Use Scenario “n”

10. Description of evaluated Usability Problems On “Dialogue Level”

Test Report

Basis for

Described By using