

MedInfo 2013 panel “Usability”

Measuring EMR Usability and Adoption

**From individual formative evaluations to
large-scale summative assessments**

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Background

- Large public organisations use information systems – and purchase new ones
- The amount of users is typically large
- Tiny issues may turn into major problems
 - E.g. struggling daily 10 min with information systems : 10 users, 100 users, 10000 users
- High usability enables fluent working
- Interest towards
 - understanding current usability-originated challenges
 - defining usability requirements and measuring them in public IT system procurement (comparison, selection)
- How to define and evaluate usability in such situations?

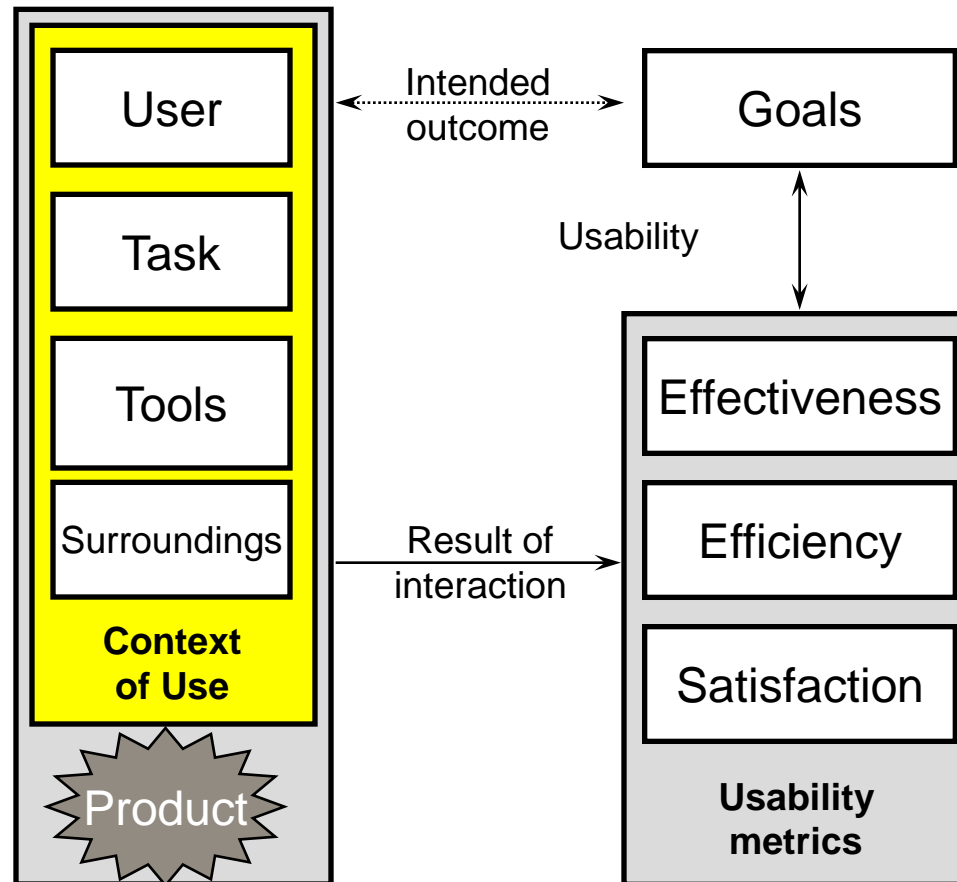
Usability

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

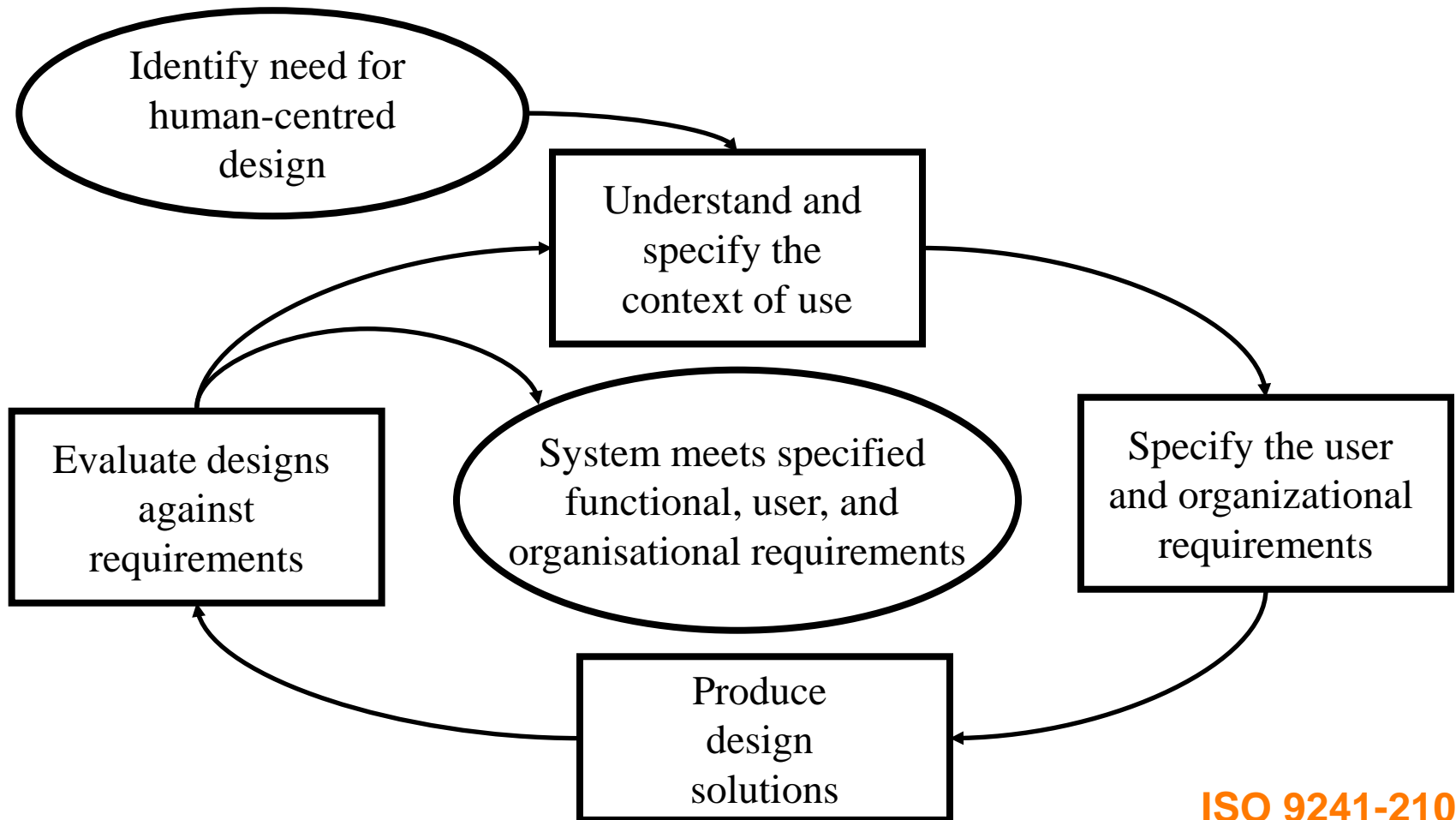
(ISO 9241-11: Ergonomic requirements for office work with visual display terminals (VDTs); Guidance on usability)

ISO TC 159 / SC4

Usability (ISO 9241-11)



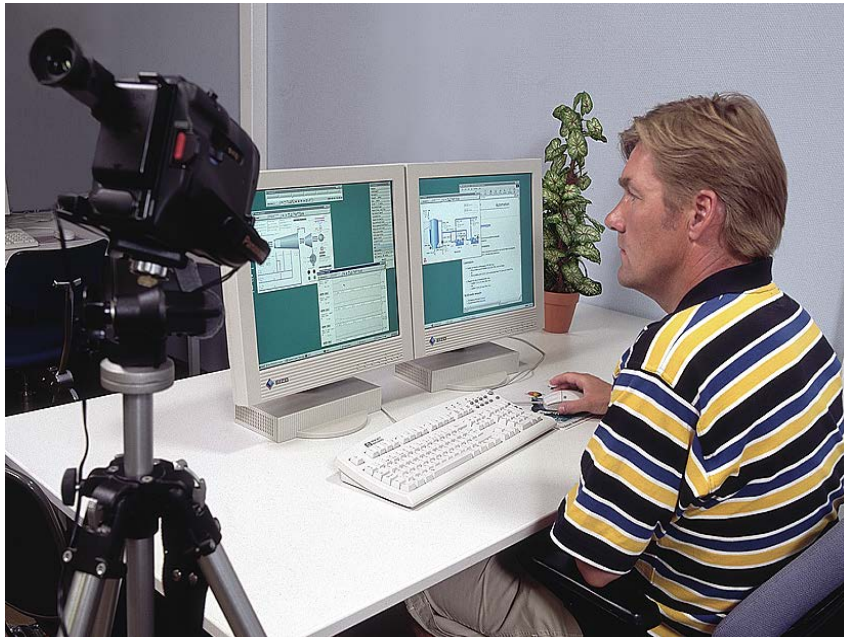
Human-Centred Design Process



ISO 9241-210

Usability Evaluation: Formative

For **forming** the system under development



laboratory



field

Usability Evaluation: Summative

For assessing the level of usability ("extent") of existing systems

QUESTIONNAIRE

	Strongly disagree				Strongly agree
1. I think that I would like to use this system frequently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
2. I found the system unnecessarily complex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
3. I thought the system was easy to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
4. I think that I would need the support of a technical person to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Summative Evaluation of Usability

Questionnaires such as System Usability Scale (SUS) may serve following purposes:

1. Providing a point estimate measure of usability and customer satisfaction
2. Comparing different tasks within the same interface
3. Comparing iterative versions of the same system
4. Comparing competing implementations of a system
5. Competitive assessment of comparable user interfaces
6. Comparing different interface technologies

Bangor et al. (2008) An Empirical Evaluation of the System Usability Scale

Evaluating Usability in the Large Scale

- Metrics for usability do exist (ISO 9241-11): effectiveness, efficiency, and satisfaction
- From formative individual system evaluation towards summative system-independent evaluation
- Challenge: How to operationalise usability metrics for comparable large-scale studies?