

MiLE+

Systematic Usability Evaluation Method

TEC-Lab (University of Lugano)
Web Site Evolution
Budapest September 26 2005

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Agenda

- **Background**
- **MiLE+ Introduction**
- **Application Independent Analysis**
 - **Technical Inspection**
- **Application dependent Analysis**
 - **User Experience Inspection**
 - **Scenario Based User Testing**
- **MiLE+ activities overview**
- **Conclusions**
- **Who we are**
 - *Timing 15 minutes presentation + 10 minutes questions & discussion*

Background

➤ Usability inspection methods

- *Heuristic evaluation & Pluralistic Walkthrough.*

➤ Drawbacks

- focus on "surface-oriented" features of the graphical interface
- dependent on the individual know-how, skill and judgment of inspectors

➤ Empirical Testing methods

- *Thinking aloud and Contextual Inquiry*

➤ Drawbacks

- the difficulty to properly select correct user samples,
- the difficulty to adequately train them to manage also advanced functions of a website
- the difficulty to reproduce actual situations of usage in a limited amount of time

➤ Two main approaches

- *heuristic-driven evaluation*
- *task-driven (scenario-driven) evaluation.*

MiLE + main Features

- Developed in cooperation between HOC-Lab (Politecnico di Milano) and TEC-Lab (University of Lugano).

- MILE+ (Milano-Lugano Evaluation) strikes a healthy balance between heuristic evaluation and task-driven techniques.

- Offers reusable tools and procedures to carry out both inspection and user testing within budget and time constraints.

- Two types of Inspection activities:

- **Application independent**

- **Application dependent**

➤ MiLE +: Application Independent Analysis

MiLE +: Application Independent Analysis

- Application Independent Analysis
 - The chairs example



- Application Independent Analysis
 - analyse the features that can be evaluated even without knowing the purposes and the users of the application.
 - There are technical aspects that should comply with general usability parameters (heuristics)

Application Independent Analysis

➤ TECHNICAL INSPECTION

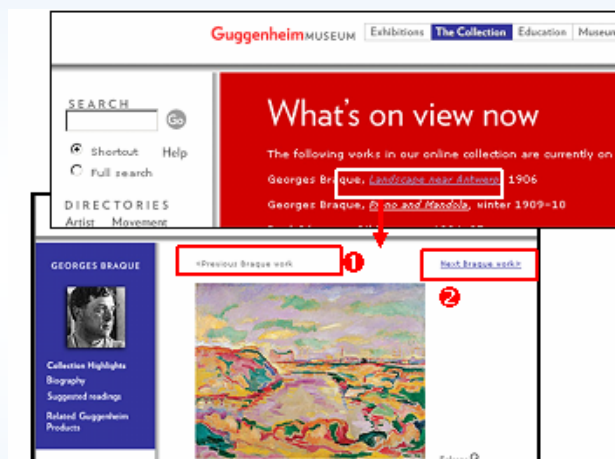
Technical Inspection / 1

- **Main goal:** identification of design problems and implementation breakdowns.
- The inspector evaluates the application from the design dimensions' perspective
 - **Content**
 - **Navigation**
 - **Technology**
 - **Interface Design**
 - **Semiotic**
 - **Cognitive**
 - **Graphic**

Application Independent problems evaluation

Dimension		Examples of Heuristics
Navigation		Consistency of the overall navigation
		Control of a guided-tour
Content		Text accuracy
		Multimedia consistency
Technology/Performance		System reaction to errors of a user
		Operations management
Interface design		
	Cognitive	Information overload
		Scannability
	Graphics	Font size
		Text layout
Semiotics		Ambiguity of string of characters
		Conventionality of interaction images

Backward Navigation



www.guggenheimcollection.org

➤ MiLE +: Application Dependent Analysis

MiLE +: Application Dependent Analysis

- Application Dependent Analysis
 - Again the chairs example



➤ **The Scenario of Use is needed!!**

- Application Dependent Analysis
 - determine if the user(s) are put in the right conditions for achieving its (their) goals.
 - the application can be effectively used in a specific context

Application Dependent Analysis

➤ USER EXPERIENCE INSPECTION

User Experience Inspection / 1

- **Main goal:** evaluating the scenarios (the inspector puts him-self in the shoes of the users)
 - With respect to Technical Inspection (where we evaluate problems application independent) in this inspection the inspector evaluates scenarios.
- The Inspector has to use:
 - **library of scenarios**
 - **library of User Experience Indicators (UEIs)**
 - Three categories of UEIs (corresponding to the different types of user interaction experiences)
 - **Content Experience Indicators**
 - **Navigation & Cognitive Experience Indicators**
 - **Interaction Flow Experience Indicators**

Examples of Content Experience Indicators

SCENARIO	Well-educated American tourist who knows he will be in town, he wants visit the real museum on December 6th 2004 and therefore he/she would like to know what special exhibitions or activities of any kind (lectures, guided tours, concerts) will take place in that day.
USER PROFILE	Tourist
GOAL	Visit the M useum in a specific day
TASKS	<ul style="list-style-type: none"> Find the events/exhibitions/lectures occurring on December 6th in the real museum Find information about the museum's location

UEIs:

- [Multilinguisticity](#)
- [Satisfaction on provided information](#)

Multilinguisticity

I'm an American tourist.
It does not exist the English version of the current exhibition's description?
And the description of the collection?

www.men.ch/expositions.asp/1-3-583-99-21337-99-32-4-1/

How to evaluate scenarios: the phases

1. **Performing the (selected) tasks**

- assess the feasibility of some "critical" tasks

2. **Evaluating the tasks through User Experience Indicators (UEIs)**

- For each attribute in relation to a specific task, the inspector has to give a score.

3. **Weighting the results according to user profiles and communication goals**

- the inspector has to establishing the "real quality" of each critical task with respect to their relevance.

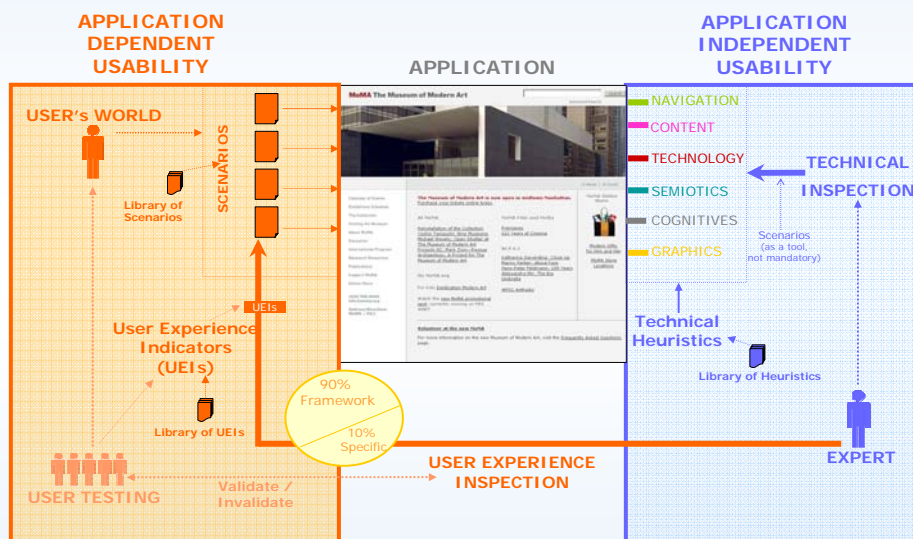
Application Dependent Analysis

➤ **Scenario-based User Testing**

Scenario-based User Testing

- **Scenario-based User Testing** is strictly related to the User Experience Inspection
- Empirically validate or invalidate the results provided by the User Experience Inspection.
- Select scenario to perform: their importance could be related to two main factors:
 - *Number and gravity of problems identified performing a specific scenarios*
 - *Relative importance of a scenario for the application*

MiLE+ Activities Framework (in a picture)



Conclusions

- Application Dependent & Application Independent analysis
 - different activities involved in each moment of the evaluation
- Ready to use tools
 - heuristics' library
 - user experience indicators.
- Re-usable methodology

- The methodology is continuously tested thanks to the interaction with usability experts and designers in order to understand the MiLE+'s breakdowns.

Who we are & What we do

- **TEC Lab (Technology Enhanced Communication Laboratory)**
- Faculty of Communication Sciences
University of Lugano (Switzerland)

- TEC-Lab is active in *research & education* concerning:
 - Methodologies for **user requirements analysis**
 - **User-centered design techniques**
 - **Usability evaluation methods**

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