



Aalto University  
School of Economics

# UXX Workshop

## What is UXX?

- Use Experience Index (=UXX) is a tool for evaluating UX
  - vis-à-vis particular user practices and prior experience
  - **both** the level of particular functions (or user interface aspects) **and** the product/prototype overall
- UXX can be used during different product development phases
  - prototypes
  - finished products



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## What is UXX?

- UXX is modular. The following modules can be combined or used independently:
  - evaluating UX in the context of certain new/improved **functions**,
  - evaluating UX in the context of certain new/improved **user interface aspects**,
  - evaluating UX in the context of certain new kinds of **auxiliary products/services** to be used in interaction with the products, *and/or*
  - ***all of the above***

## What is UXX? *Relevant insights from the interviews*

- Juha Hentilä, markets unit (strategy & excellence in the future), focus on consumer perceived quality
  - UX data is currently not “user specific”: developers/marketers cannot estimate well what kind of users have what kind of UX (although in services the data includes user contact information so that developers can call back)
  - Emotive data is not really collected or at least used, there is no way to express it as a development goal/requirement
- Harri Wikberg, member of an internal “UI design task force”
  - Software not properly evaluated by aesthetics, devices are (internally at least)
  - Design drivers are not followed throughout the development, they get lost at some point
  - Design issues cannot be properly put to paper or quantified, there is no tool to get them to decision making
  - Two “use scenarios” (always, with all products?) used: novice UI for easy operation, quick UI for efficient operation

## What is UXX? Some challenges?

Evaluating UX as (a) an inherent property of the product (same for all users) vs. (b) something experienced by each user individually

- We want to make UXX able to measure both, to some extent.
- However, more than measuring UX of individual users, the aim is to facilitate
  - identification of product functions&features, the UX with which contributes significantly to different users' overall UX with the product.
  - identification of different segments of users, whereby certain properties of the product perhaps differently affect the overall UX experience.

## What is UXX? Some challenges?

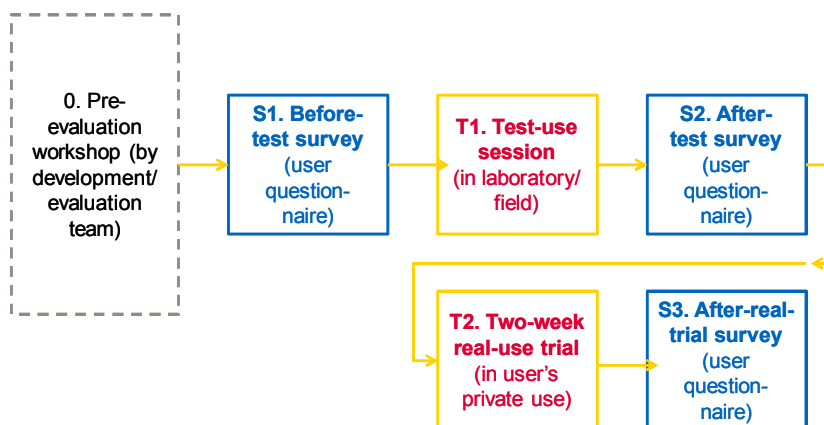
Evaluating (c) overall UX of a product vs. (d) function/feature-specific UX?

- We do want to make UXX able to measure not only the (vague) overall UXX of a product, but also UXX at the level of tangible functions/features.
- On the other hand, UXX will be based on tests with real users, whereby it's not possible to go through all the functions&features of the product.
  - Need to select certain functions&aspects for UXX evaluation.
  - UXX cannot replace expert walkthroughs of all the functions&features of the product.

## What is UXX? Some challenges?

Asking (e) one evaluative question per many functions/features  
 vs. (f) many questions per few most important  
 functions/features?

## Evaluation process overview



## Evaluation process overview

### 0. Pre-evaluation workshop

- Aim: to identify question items for the user questionnaires used in the evaluation – based on a pre-fabricated questionnaire formula

### S1. Before-test survey

- Aim: to gather information about users' prior experiences, expectations, and expertise concerning the product-to-be-tested (to serve later analysis of the moderating effects of these on UX)

### T1. Test-use session

- Aim: to make the users test the product (i) freely and (ii) with respect to certain new functions, user interface aspects, etc.
- **Simulating** real (a) in-store trial situation or (b) try-your-friend's device situation

## Evaluation process overview

### S2. After-test survey

- Aim: to gather information about users' assessments and evaluations concerning the product tested (as if the product had been tested in a store or a friend's device)

### T2. Two-week real-use trial

- Aim: to make the users test the product (i) freely and (ii) with respect to certain new functions, user interface aspects, etc. *in everyday-life use*
- **Simulating** real short- to medium term use experience

### S3. After real-trial survey

- Aim: to gather information about users' assessments and evaluations concerning the product tested after short-to-medium term use

## Selection of test users

### 0. Test users from within Nokia?

- E.g. 15 employees from the sales/marketing organization responsible for the target group/segment of the new product/prototype

### 1. Real test users from markets

- Have preferably 30-100 test users.
- Have at least "semi-representative" sample of the target group of the product
  - adequate representation of the targeted Nokia "*official segment(s)*"
  - adequate representation of the target segment in terms of *additional* demographic/psychographic/behavioral variables
- When contacting test users, be especially careful **not** to bias the sample excessively
  - towards technology geeks (who like trying/testing new things AND/OR new technologies in general)
  - towards Nokia users only (50 % should be other than current Nokia users)

## Desired output from the entire UXX evaluation?

1. Some kind of UX "index figure" (comparable across products)
  - for the user experience of the device overall
  - for particular **functions**
  - for particular **user interface aspects**
  - for co-use of **auxiliary products/services**
2. Some kind of measures of use intention/ word-of-mouth intention/ willingness to invest time money commitment
  - for the device overall
  - for particular **functions**
  - for particular **user interface aspects**
  - for co-use of **auxiliary products/services**

## Desired output from the entire UXX evaluation process?

3. Identification of factors/features that contribute (most or least) to the overall UX index figures *for the particular product evaluated*
  - E.g., structural equation modeling; fuzzy-set analysis
4. Identification of different user groups
  - e.g., Whether users with different prior experience with the device type, functions, UI, Nokia brand will have different post-use UX evaluation of the device?
  - e.g., Whether there are different user groups, wherein UX with particular functions or UI aspects differentially influence the overall UX (or willingness to pay)?

## Pre-evaluation workshop (by development/evaluation)

- Arrangements within the development team
  - facilitated by UX experts
- Applied to a certain focal product
  - A product prototype, OR a finished product
- **Intermediate outcome of the workshop: summary list of**
  - a) the main *new/improved functions* of the product – and most important *use practices/contexts* for these
  - b) the main *new/improved overall user interface aspects* of the product
  - c) the main *auxiliary products/services* used in *new kind of* connection with the product
- **Main outcome of the workshop: questionnaires** to be given to test users (1) before and (2) after a use test(s) of the product

The questionnaire is a result of inputting the **features, user interface aspects, and auxiliaries** – listed in the workshop – to pre-fabricated/standard questionnaires.

## Pre-evaluation workshop – How to?

1. Identify
  - a) the *new/improved* **functions** of the product
    - + 2-3 most relevant **use practices/cases/contexts** for each function
  - b) the *new/improved* overall **user interface aspects** of the product
    - + 2-3 most relevant function/use-context combinations in which each user interface aspect is evident (Note. Not necessarily new functions)
  - c) main **auxiliary products/services** with which the product is meant to be used in *new kind* of interaction
    - + 2-3 most relevant function/use-context combinations with which the auxiliary products are used. (Note. Not necessarily new functions)
2. Take the "pre-fabricated" questionnaire questions (provided by UXTools team) and insert the above points (a, b, c) to the questions
  - This involves, of course, "labeling" the functions, UI aspects etc in a way that questions can be asked about them.

## Pre-evaluation workshop → Intermediate outcomes

- a) A list of the new/improved **functions** of the product

- identified **function F1**
  - relevant **use practice/case/context F1U1**
  - relevant **use practice/case/context F1U2**
  - relevant **use practice/case/context F1U3**

- identified **function F2**
  - relevant **use practice/case/context F2U1**
  - relevant **use practice/case/context F2U2**
  - relevant **use practice/case/context F2U3**

- identified **function F3**
  - relevant **use practice/case/context F3U1**
  - relevant **use practice/case/context F3U2**
  - relevant **use practice/case/context F3U3**

- identified **function F4**
  - relevant **use practice/case/context F4U1**
  - relevant **use practice/case/context F4U2**
  - relevant **use practice/case/context F4U3**

### For example:

- F1. Navigation by walk
  - F1U1. Finding a tourist restaurant in an unfamiliar city
  - F1U2. Finding a business office in hurry
  - F1U3. Sharing a route with a friend's phone
- F2. Mobile TV
  - F2U1. Watching a favorite program while on bus
  - F2U2. Watching a favorite program outdoors in a park
  - F2U3. Entertaining oneself while in toilette
- F3. Publishing location-status on Facebook
  - F3U1. ...
  - F3U2. ...
- F4. Searching product/shopping information based on bar code
  - F4U1. ...

## Pre-evaluation workshop → Intermediate outcomes

### b) A list of the new/improved overall **user interface aspects** of the product

- identified **user interface aspect UI1**
  - relevant function/use context UI1x1 whereby UI1 becomes used
  - relevant function/use context UI1x2 whereby UI1 becomes used

identified **user interface aspect UI2**

- function/use context UI2x1 whereby UI2 becomes used

#### Note.

- The user interface aspects to be identified should mostly be aspects that affect the use of multiple functions of the products
- However, also such user interface aspects can be included that are specific to one or few functions

#### For example

UI1 New Navi button

UI1x1 Making a call while walking outdoors

UI1x2 Connecting to the Internet while sitting on a bus

UI1x3 Making a calendar entry while a call is on hold

UI2 Scrolling desktop and scroll effects

UI2x1 Scrolling desktop from Facebook to Calendar while walking

UI2x2 Scrolling desktop from one Internet page to another while showing the page to a friend

UI3 Sign-in into Ovi service

UI3x1 ....

## Pre-evaluation workshop → Intermediate outcomes

### c) A list of the **auxiliary products/services**

- identified **auxiliary product/service AP1**
  - function/use context AP1x1 with which AS1 becomes used
  - function/use context AP1x1 with which AS1 becomes used

- identified **auxiliary product/service AP2**

– function/use context AP2x1 whereby AP2 becomes used

– function/use context AP2x2 whereby AP2 becomes used

#### For example

AP1 Work laptop

AP1x1 Synchronizing calendar while in office

AP2x2 Backupping contact details while in taxi

AP2x3 Using phone as a remote controller or laptop presentation

AP2 Work email system

AP2x1 Installing the email service from home

AP2x2 Finding an email from a subfolder in taxi

...

## Pre-evaluation workshop → Main outcome

- see the attached "pre-fabricated" questionnaire questions
  - A. for before-test survey
  - B. for after-test survey
  - C. for after-2-week-trial survey

## A. (Pre-fabricated) Before-test questionnaire

## A. Before-test questionnaire

- I. Prior experience with the product/device category
  - prior experience with the product/device category in general
    - "involvement" with the category (personal relevance)
  - prior experience with Nokia products in the category
  - prior experience with other brands in the category
- II. Prior experience with the use practices/contexts (F1)U1, (F1)U2, (F1)U3, (F2)U1, (F2)U2, ...
  - a) Frequency of encountering the use cases/contexts
    - workdays
    - leisure time
    - vacations
  - b) personal relevance of each use practice/context

Need to "label" and briefly describe the use practices/contexts for respondents (in the survey text)

- However, do not yet refer to the product or product functions in any way!

## A. Before-test questionnaire

- III. Prior experience with the functions
  - Prior experience with function F1
    - a) *With Nokia device*
      - exp. with F1 in general + experience of F1 for use F1U1, F1U2, F1U3
    - b) *With other-than-Nokia device*
      - exp. with F1 in general + experience of F1 for use F1U1, F1U2, F1U3
  - Prior experience with function F2
    - a) *With Nokia device*
      - exp. with F2 in general + experience of F2 for use F2U1, F2U2, F2U3
    - b) *With other-than-Nokia device*
      - exp. with F2 in general + experience of F2 for use F2U1, F2U2, F2U3
  - Prior experience with function F3...

Need to "label" and briefly describe the functions for respondents (in the survey text)

## A. Before-test questionnaire

### IV. Prior experience with user interface aspects

- Prior experience with **user interface aspect UI1**
  - *With Nokia device*
  - *With other-than-Nokia device*
  - *With other product type/category*
- Prior experience with **user interface aspect UI2**
  - *With Nokia device*
  - *With other-than-Nokia device*
  - *With other product type/category*
- ...

Need to *visualize* to respondents what is meant with the UI's (e.g., desktop sliding, Navi button) – perhaps Flash animations in websurvey

## A. Before-test questionnaire

### V. Prior experience with auxiliary products/services

- Prior experience with **auxiliary product ASP1**
  - *With Nokia device*
  - *With other-than-Nokia device*
- Prior experience with **auxiliary product AP2**
  - *With Nokia device*
  - *With other-than-Nokia device*
- ...

Need to label and briefly describe the AP's

## B. (Pre-fabricated) After-test questionnaire

## After-test questionnaire

- I. Some general questions
- II. Expectations about the future use/relevance of **use practices/contexts** (F1)U1, (F1)U2, (F1)U3, (F2)U1, (F2)U2, ...
  - a) frequency of expected encounters with each use practice/context in
    - workdays
    - leisure time
    - vacations/holidays
  - b) personal relevance of each use practice/

Use only the "labels" of the use practices/contexts.

- Do not yet refer to the product or product functions in any way.

## After-test questionnaire

### III-A Test experience and evaluation of the functions

- 1) Test experience and evaluation of **function1**
  - a) Extent of use experience of **function F1** during the test
    - exp. of **F1** in general AND exp. of **F1** for use **F1U1, F1U2, F1U3**
  - b) "**Thought experiment about utility**": Assuming that you (the user) had not faced any practical/usability problems with **function F1**, what would have been the perceived personal relevance/value/utility of function **F1**
    - utility of **F1** in general AND ...utility of **F1** in use **F1U1, F1U2, F1U3**
  - c) "**Usability experience**": Taking into account potential practical problems in using/interacting with **function 1**, how did the user feel about the use (e.g., easiness, fluency, seamlessness)
    - usability of **F1** in general AND ...usability of **F1** in use **F1U1, F1U2, F1U3**
- 2) Test experience, evaluation, and expectations of **function2 ...**
- 3) Test experience, evaluation, and expectations of **function3 ...**

## After-test questionnaire

### III-B Expectation about the future use/relevance of the functions

- 1) Expectation about the future use/relevance of **function F1**
  - a) Expectation about the future use frequency/need of **function F1** if one had the product
    - workdays (expected use of **F1** in general AND of **F1** in use **F1U1, F1U2, F1U3**)
    - leisure time (expected use of **F1** in general AND of **F1** in use **F1U1, F1U2, F1U3**)
    - vacations (expected use of **F1** in general AND of **F1** in use **F1U1, F1U2, F1U3**)
  - b) Willingness to pay for **function F1**
    - a. as such
      - i. if incorporated into the user's current device
      - ii. when buying the product of the category next time
    - b. assuming that the usability problems are solved
      - » same i. and ii. as above
- 2) Expectation about the future use/relevance of **function F2...**
- 3) Expectation about the future use/relevance of **function F3...**

## After-test questionnaire

IV-A Test experience and evaluation of the user interface aspects

- *Analogously as for functions above*

IV-B Expectation about the future use/relevance use of auxiliary products/services

- *Analogously as for functions above*

## After-test questionnaire

V-A Test experience and evaluation of the use of auxiliary products/services

- *Analogously as for functions above*

V-B Expectation about the future use/relevance use of auxiliary products/services

- *Analogously as for functions above*

## After-test questionnaire

VI Overall test experience and evaluation of (whole) product

V. Similarly for auxiliary products/services

## ...Discussion questions about the questionnaires

- **Overall**
    - Should we ask **(e)** *one evaluative question per many functions/features* **vs. (f)** *many questions per few most important functions/features*?
  - **III.**
    - Should we ask about prior experience of using each function for each use for both Nokia and other-than-Nokia products? → too many questions
      - If not, what should we concentrate on? Not asking about each function and use case, but just for each function?
  - **III, IV, V**
    - Should we ask about the user's *expectations* about the utility / usability of the (III) functions or (IV) user interface aspects, (V) auxiliary products *prior to the test*?
-