

**UNIVERSITY OF CRETE
FACULTY OF SCIENCES AND ENGINEERING
COMPUTER SCIENCE DEPARTMENT**

**COURSE CS-564 (OPTIONAL)
ADVANCED TOPICS
IN HUMAN – COMPUTER INTERACTION**

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USER EXPERIENCE

Introduction to User Experience (UX)

The issues

- Listening to music
 - CD vs. mp3 vs. YouTube
 - iPod or a standard mp3 player?
 - Vinyl
- Windows XP vs. Windows Vista vs. Windows 7
- For smartphone users
 - Can you switch back to a standard phone?





Technology as experience: teen SMS

- Teenagers put a lot of effort into composing short messages that convey precisely what they feel and what they think will be understood by the recipient
- They seem to evoke the other person, how that person thinks and feels, while composing a message
- The constraints of the medium and teenagers' desire to express themselves clearly make text messaging very personal for them
- They collect personally significant messages to evoke the moment they were received, to recall, and to reminisce
- Some are reluctant to give up their old mobiles for a newer model because the old model holds messages that are dear to them. A downloaded or handwritten version would not do. The phone, display, and format of the text and the sensory activity of holding the phone and calling up a particular message all help to evoke the original moment
- They are like the wrapping and the card signifying that an object is a special gift—put away in a drawer, come upon every now and again, always evoking that moment. The enchantment of technology. And yet a prosaic experience for many teenagers and adults



What is user experience?

- The term 'user experience' (UX) is widely used but understood in many different ways
- The multidisciplinary nature of UX has led to several definitions of and perspectives on UX, each approaching the concept from a different viewpoint
- Existing definitions for user experience range from a psychological to a business perspective and from quality centric to value centric
- There is no one definition that suits all perspectives



Different perspectives of UX

- The field of UX deals with studying, designing for and evaluating the experiences that people have through the use of (or encounter with) a system. This use takes place in a specific context, which has an impact on, or contributes to, the UX
- UX can be viewed from different perspectives: it can be seen as a **phenomenon**, as a **field of study**, or as a **practice**.
 - To understand this distinction, consider the following analogy: health as a phenomenon, medicine as a field of study, and a doctor's work as a practice



UX as a phenomenon

- UX as a phenomenon can be described as follows:
 - UX is a subset of experience as a general concept. UX is more specific, since it is related to the experiences of using a system
 - UX includes encounters with systems – not only active, personal use, but also being confronted with a system in a more passive way, for example, observing someone else using a system
 - UX is unique to an individual
 - UX is influenced by prior experiences and expectations based on those experiences
 - UX is rooted in a social and cultural context



What is UX not?

- UX is not technology driven, but focuses on humans
- UX is not about just an individual using a system in isolation
- UX is not just cognitive task analysis, or seeing users as a 'human information processor'.
- UX is not the same as usability, although usability, as perceived by the user, is typically an aspect contributing to the overall UX
- UX design is more than user interface design
- UX differs from the broader concepts of brand/consumer/customer experience, although UX affects them and vice versa



UX definitions (1/3)

- ISO 9241-210:2010
 - UX is described as a person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service, and it includes all the users' emotions, beliefs, preferences, perceptions, physical and psychological responses, behaviours and accomplishments that occur before, during and after use
 - Furthermore, ISO 9241-210:2010 notes that user experience is a consequence of brand image, presentation, functionality, system performance, interactive behaviour and assistive capabilities of the interactive system, the user's internal and physical state resulting from prior experiences, attitudes, skills and personality, and the context of use.



UX definitions (2/3)

- Nielsen-Norman Group
 - “All aspects of the end-user’s interaction with the company, its services, and its products. The first requirement for an exemplary user experience is to meet the exact needs of the customer, without fuss or bother. Next comes simplicity and elegance that produce products that are a joy to own, a joy to use. True user experience goes far beyond giving customers what they say they want, or providing checklist features. In order to achieve high-quality user experience in a company’s offerings there must be a seamless merging of the services of multiple disciplines, including engineering, marketing, graphical and industrial design, and interface design.”



UX definitions (3/3)

- IBM's definition of User Experience Design
 - User Experience Design fully encompasses traditional Human-Computer Interaction (HCI) design and extends it by addressing all aspects of a product or service as perceived by users. HCI design addresses the *interaction* between a human and a computer. In addition, User Experience Design addresses the user's initial awareness, discovery, ordering, fulfillment, installation, service, support, upgrades, and end-of-life activities



Misunderstanding UX

- Employing the phrase “user-experience design” as a reminder or motivator to designers to pay attention to people’s experience of technology is one thing.
- Employing the phrase to indicate that a particular user experience can be designed is another thing altogether
- The latter suggests a return to the simplicity of a technologically determinist position on what experience is
- This neglects the agency of people interacting with technology

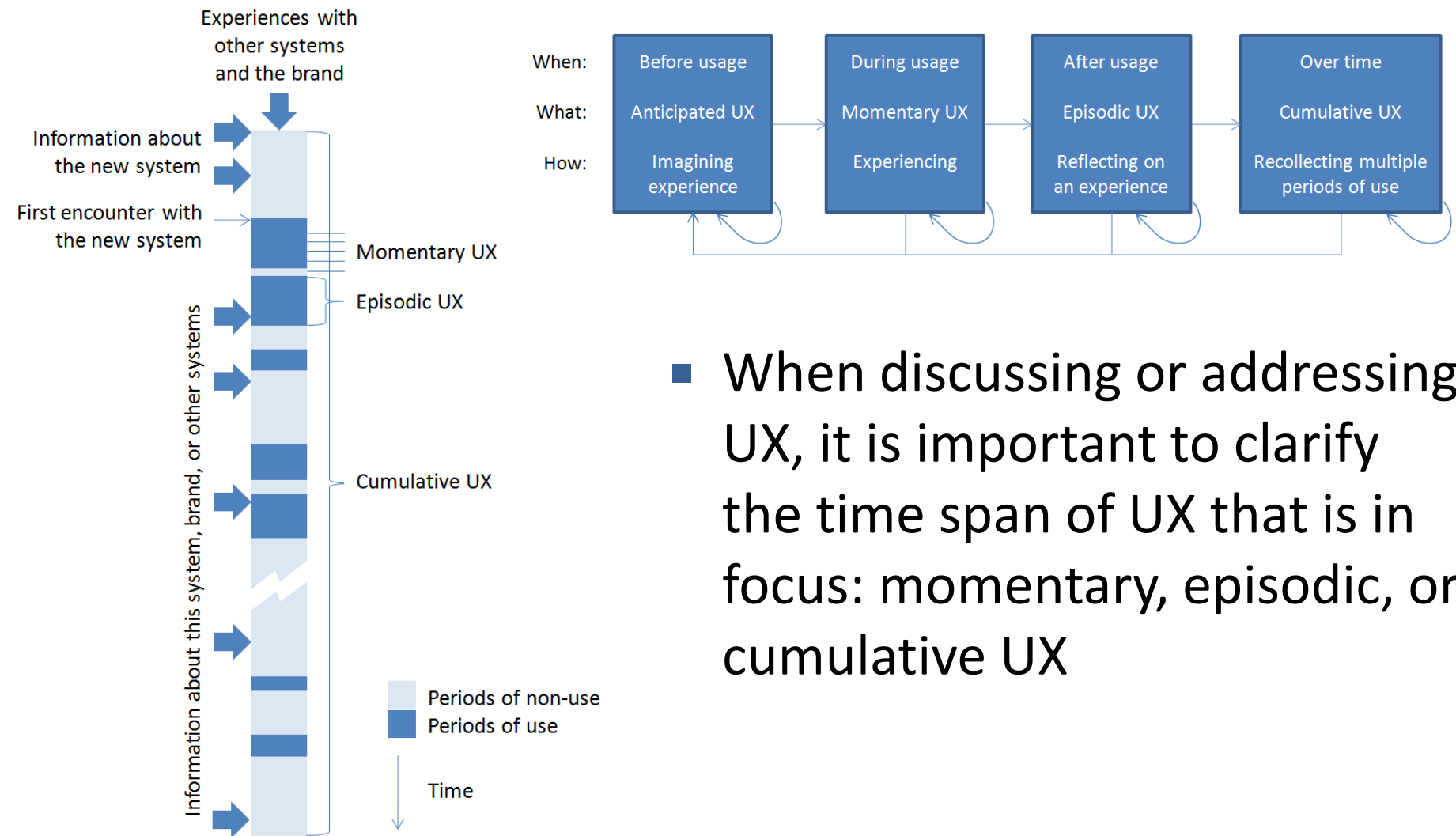


Time spans of user experience

- While the core of user experience will be the actual experience of usage, this does not cover all relevant UX concerns
- People can have indirect experience *before* their first encounter through expectations formed from existing experience of related technologies, brand, advertisements, presentations, demonstrations, or others' opinions
- Similarly, indirect experience extends *after* usage, for example, through reflection on previous usage, or through changes in people's appraisals of use



Time spans of user experience



- When discussing or addressing UX, it is important to clarify the time span of UX that is in focus: momentary, episodic, or cumulative UX



“The user” in HCI through the years

- Kuutti (2001) characterizes the history of “the user” in HCI
- The user in the 1970s:
 - The user as a cog in a rational machine
- In the 1980s:
 - The user as a source of error
- in the 1990s:
 - The user as a social actor
- Now:
 - The user as a consumer



The User as a Cog in a Virtual Machine

- 1970s – 1980s
 - Single user sitting in front of a computer screen performing a fairly well prescribed task
 - The computer was seen as a tool through which set work was accomplished
 - Underlying the scientific and organizational reduction was a model of the structure of action that was a deliberate simplification of action
 - Card, Moran and Newell (1983), GOMS model, Norman's seven stages of action (1988)



The user as a source of error

- 1980s – the ineffective cog
- Dominance of information-processing psychology
- Users are still considered similar to information processors like computers only hopelessly slower and unreliable
- The starting point where Human Computer Interaction really took off



The user as a Social Actor

- During the late 1980s and the 1990s the opportunistic or contingent aspects of everyday activity became the central focus of challenges to the dominance of information-processing psychology
- These challenges came mainly from the disciplines of sociology and anthropology and were geared toward asserting the salience of the social context of activity in discourse about people and technology
- Lucy Suchman (1987) and Jean Lave (1993) have been two of the most influential figures in helping to contextualize action in human-computer interaction. Their emphasis on the situatedness of action offers a radical alternative to the task-based, information-processing accounts of action characteristic of the single-user approach



The user as a consumer

- The 1990s saw the development of the dotcom companies and a multimillion-dollar games industry; strong penetration of computers into the home; the confluence of computer and communications technologies; and the beginnings of wireless, mobile, and ubiquitous computing
- The industry vision now is not of desktop computers or even laptop computers but of information appliances and interactive consumer products that will penetrate many aspects of our lives

Why now?

“The old computing was about what computers could do; the new computing is about what users can do. Successful technologies are those that are in harmony with users’ needs. They must support relationships and activities that enrich the users’ experiences.”

Ben Shneiderman (2002)



The user experience in the “consumer” model

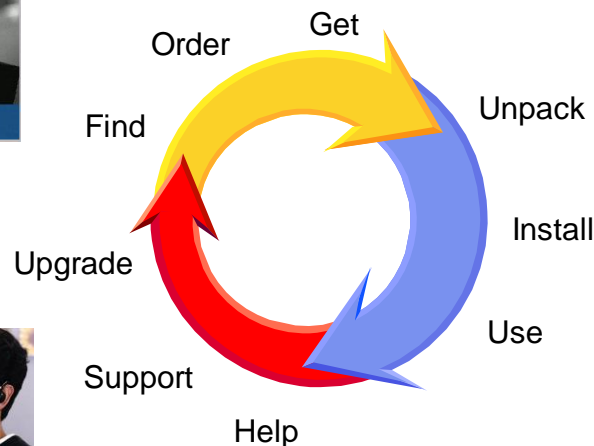
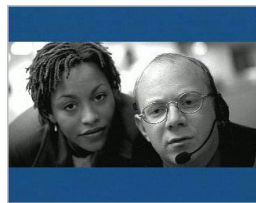
- Interaction with technology is now as much about what people feel as it is about what people do
 - It is as much about children playing with GameBoys, teenagers gender swapping, and elderly people socializing on the Internet as it is about middle-aged executives managing knowledge assets, office workers making photocopies, or ambulance controllers dispatching ambulances
- The emergence of the computer as a consumer product has been accompanied by very explicit attention to user experience
 - For example, a leading textbook presents user-experience goals as one of the sets of goals of interaction design, related to but not subsumed by the more readily recognized usability goals:
 - . . . user experience goals differ from the more objective usability goals in that they are concerned with how users experience an interactive product from their perspective rather than assessing how useful or productive a system is from its own perspective. (Preece et al. 2002, p. 19)



Computers as consumer products

- Computer manufacturers aspire to designing computers as full-fledged consumer products and as part of that process they are concerned with creating the total user experience

Everything the user sees, *hears*, and *touches*





Contributing trends to UX

- The Web design boom contributed to the combination of different disciplines: marketing, branding, visual design and usability
 - This is why several early user-experience publications focus on website user experience
 - More choices available (web boom) → usability and UX critical
- Technology changes (advances in mobile, ubiquitous social and tangible computing technologies) forced designers to take a much broader view of interaction and UX, compared to the desktop PC and WIMP interfaces

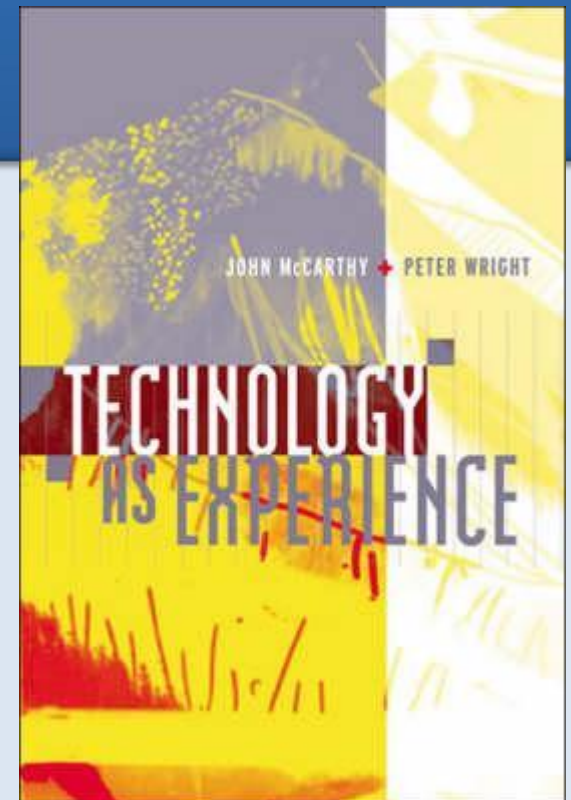


Apple as a game changer

- User experience, as a term, was brought to wider knowledge by Don Norman et al, in 1995:
 - “We describe the role of the "User Experience Architect's Office", which works across the divisions, helping to harmonize the human interface and industrial design process across the divisions of Apple”
- Jonathan Ive’s work with Apple provided mainstream examples of good design that encompassed the whole user experience (including aesthetics) rather than focusing on usability and functionality alone
- It was also Don Norman’s Emotional Design book that brought the issue of emotions and aesthetics to the forefront of the HCI community

Technology as experience

McCarthy, J. & Wright, P.C., (2004). Technology as experience. Cambridge, MA: MIT Press.





Four threads of experience (1/5)

- Four threads of experience
 - Sensual – visual, aural, tactile
 - Emotional – feelings, relationships
 - Compositional – integrity, coherence
 - Spatio-temporal – sense of time and location

***Threads: aspects, facets of experience**



Four threads of experience (2/5)

- **Sensual – visual, aural, tactile**
 - Our direct visual, aural, tactile and other sensations are our direct connection to the world and are an essential element of experience
 - A mechanic may hear the slight vibration that indicates a maladjustment or even impending failure in an engine, and you took the car to the garage because it feels odd under your hands. Of course computer processing and telecommunications often break the physical connections that make this possible



Four threads of experience (3/5)

- **Emotional** – feelings, relationships
 - Even everyday activities are invested with emotion, whether the momentary frustration of a stuck key or the general sense of having a good day
 - McCarthy and Wright cite a hospital study where nurses, doctors and managers viewed patients with very different values and emotions: people for personal relationships, subjects for professional action, or numbers for efficient allocation



Four threads of experience (4/5)

■ **Compositional** – integrity, coherence

- Experiences are powerful when they have integrity, when part and whole work together, tell the same story. If you see a cheap banner add on a professional web site the disparity causes tension
- As meaning seeking creatures we try to construct sensible and coherent meanings to our experiences; if this may be frustrated or enhanced by appropriate design. As well as the need for coherence of style and message epitomised by the cheap web banner, we can also look at the narrative structure, the way in which each interactive action flows more or less naturally from the last



Four threads of experience (5/5)

- **Spatio-temporal** – sense of time and location
 - Moments of intense emotion can seem to last for ever, or be over too quickly
 - Our sense of time is influenced by experiences, but likewise the positioning of an interaction in a particular place at a particular time can influence the sense of experience
 - This is most obvious in tangible or ubiquitous computing, but even in a plain GUI or web interface when you request or provide information does it 'make sense' for the user at that moment in the interaction?



Six processes of sense-making (1/6)

■ Anticipating

- We come to any interaction with expectations and these develop as we interact
- Note that it is precisely the disappointment of these expectations, which can be a problem if the compositional thread is not well designed
- Equally, if there is no sense of novelty or unfolding the interaction is likely to be boring



Six processes of sense-making (2/6)

■ Connecting

- This is the immediate pre-cognitive sensation – the sense of foreboding entering a darkened room, the pleasure of the touch of fur
- This connects very directly to the sensual and emotional threads



Six processes of sense-making (3/6)

■ Interpreting

- You need to make sense of the experience, allowing you to know what you can do, how things may unfold (linking back to anticipation).
- More complex emotion such as regret, embarrassment, arise at this level
- Furthermore problems in being able to interpret the experience may lead to a sense of puzzlement and frustration or possibly wonder and mystery



Six processes of sense-making (4/6)

■ Reflecting

- Even as we participate and move forward in an experience, we often also look back:
 - Was it as we expected, better or worse?
 - Perhaps we were frightened but it was still fun
 - Why did I enjoy that experience, was it the thing itself or perhaps more the companions sharing it?



Six processes of sense-making (5/6)

■ Appropriating

- As you reflect, the experience starts to get interwoven into the broader fabric of your life:
- The previous enjoyable experiences you have had with the same friends, the fairground visits as a child
- The experience is not just something that happened, but something that happened to you as part of your life story



Six processes of sense-making (6/6)

■ Recounting

- As we tell back the experience to others or even as we remember it and tell it back to ourselves, we re-experience it in a different way, perhaps highlighting things that were almost unnoticed at the time.
- We do this in the light of previous reflection, but also continue to reflect on the recalled experience
- Of course, if the retelling is in a social situation that situation is itself a new experience and itself becomes integrated with the original story, the mundane event may become more value laden after recounting to others



The value of the sense-making processes

- The order of the above is not simply linear, but there is also a sense of progression between them
- Not surprisingly notions of 'experience' can be elusive and it is hard to turn the descriptive frameworks of experience into more pragmatic principles for design
- However, in areas such as film-making, similar more descriptive frameworks have proved valuable not as formulae for making successful films, but as **ways to discuss and to bring to the surface issues**
- There may not be an obvious rule for 'Connecting', but we can ask ourselves what would be someone's immediate feelings when they pick up a product or visit a web site

Designing experience

Designing experience

- Crackers case study (Dix)
 - Real crackers
 - Cheap and cheerful
 - Bad joke, plastic toy, paper hat
 - Pull and bang
 - Virtual crackers
 - Cheap and cheerful
 - Bad joke, web toy, cut-out mask
 - Click and bang





The crackers experience

| | Real cracker | Virtual cracker |
|----------------------------|-----------------------|--|
| Surface elements | | |
| Design | Cheap and cheerful | Simple page/graphics |
| Play | Plastic toy and joke | Web toy and joke |
| Dressing up | Paper hat | Mask to cut out |
| Experienced effects | | |
| Shared | Offered to another | Sent by e-mail message |
| Co-experience | Pulled together | Sender can't see content until opened by recipient |
| Excitement | Cultural connotations | Recruited expectation |
| Hiddenness | Contents inside | First page – no contents |
| Suspense | Pulling cracker | Slow ... page change |
| surprise | Bang (when it works) | WAV file (when it works) |



Designing for peak experience

- Good enough
 - It is impossible to have one choice that represents the peak experience for everybody
 - Instead, a choice that nobody hates or is deemed satisfactory by all is favoured
- Peak experience
 - The best, favourite or most appropriate choice for an individual
 - Varies from person to person (or team to team)
- Peak experience will always be better for an individual



How to design for peak experience

- Traditional interface design
 - User profiles, central personas
 - Average and typical
 - Process and methods
 - from need to solution
- Design for peak experience
 - Individual user
 - Niches, extreme personas
 - Specific and eclectic ideas and inspiration
 - from concept to use



When to seek peak experience

- Individual choice involved
 - As opposed to corporate choice
- User experience central
 - A mobile phone
 - For calling people: most models will do
 - For a sense of “special”: UX highly important
 - like in the case of the iPhone, whether as a trendy, cool gadget or as a fun phone to use
- The long tail
 - It is impossible to satisfy all but each group that shares interest is large enough to make it worthwhile to develop an application for their needs
 - Facebook apps that cater to vastly different people are a prime example and they are ideal examples of peak experience design opportunities.

User Experience Evaluation



A new field

- Whilst the notion of user experience is not entirely new, what can be considered new is the emphasis on its importance over traditional usability
- There exist a number of usability evaluation methods (UEMs) and UX evaluation methods with the former being more mature, given years of research efforts in collecting, documenting and categorizing them systematically
- In contrast, similar work is only now being done for UX evaluation methods



Survey of UX evaluation methods

- Vermeeren et al. (2010) conducted a survey of the UX evaluation methods available in academia and the industry and identified 96 different methods
- It was evident that it is impossible to identify a standard method for UX evaluation, nor even a trend among methods, at least for the time being
- Methods include psychophysiological measurements, various types of interviews, observations, checklists, diary studies etc. and combinations of them
 - A collection of UX evaluation methods can be found at various websites, e.g.:
 - ENGAGE (an EU project):
<http://www.designandemotion.org/society/engage/>
 - All about UX:
<http://www.allaboutux.org>



UX evaluation method survey process

- Vermeeren et al. processed the dataset of the collected methods quantitatively, for identifying interesting patterns in what types of methods are scarce or abound
- Then, in content analyses, strengths and weaknesses of the methods were analyzed, identifying needs that should be addressed in future UX evaluation method development



UX evaluation requirements (1/2)

- UX is generally understood as inherently dynamic:
 - given the ever-changing internal and emotional state of a person
 - differences in the circumstances during and after an interaction with a product
- Therefore, UX should not only be seen as something evaluable **after** interacting with an object, but also **before** and **during** the interaction
- While it is relevant to evaluate short-term experiences, given dynamic changes of user goals and needs related to contextual factors, it is also important to know how (and why) experiences evolve over time



UX evaluation requirements (2/2)

- In addition, users' values affect their experiences with products and services, and thus this relationship has to be considered in the design process right from the beginning
- It is essential to look beyond static aspects and to investigate the temporal aspects of UX – how UX changes over time
- A thorough understanding of users' experiences, be they positive or negative, a product evokes is at the core of UX evaluation



Distinguishing UX from Usability Evaluation Methods

- The relationship between usability and UX is intertwined
 - Attempts have been undertaken to demarcate or even dismiss the boundary between them, conceptually and operationally
- Usability is subsumed by UX
- The implication is that UX evaluation entails the augmentation of existing methods for usability evaluation
- Usability tests tend to focus on task performance whereas UX focuses on lived experiences
 - As UX is subjective, objective usability measures such as task execution time and the number of clicks or errors are not sufficient measures for UX: we need to know how the user feels about the system
 - Although the subjective component of usability (i.e., satisfaction) can be seen as part of UX evaluation, UX addresses a range of other subjective qualities
 - A user's motivation and expectations play a stronger role in UX than in traditional usability



Distinguishing Evaluation from Design Methods

- A sharp distinction between design and evaluation methods is sometimes hard to make
- Design methods are often called inspirational or generative methods and aim at bringing inspiration for developers when they create new products and designs
- We are interested in finding the means to evaluate UX of existing concept ideas, design details, prototypes, or final products
- The main focus of evaluation methods is to help in choosing the best design, to ensure that the development is on the right track, or to assess if the final product meets the original UX targets



Categorisation of UX evaluation methods (1/2)

- Origin of the method
 - Academia (70%), industry or collaboration between them
 - Industry rarely publishes their methods, many remain unrevealed
- Type of collected data
 - Quantitative, qualitative, both
 - Evenly distributed (1/3)
- Type of application
 - Web services, mobile, PC, hardware, other (e.g., games)
 - for each listed type of application an equal number of methods is available, 22 methods are application-specific, 2/3 are application-independent
- Information sources
 - 79/96 can be used with single users
 - Expert methods (13 methods, 6 require users additionally)
 - User groups (16 methods)



Categorisation of UX evaluation methods (2/2)

- Location
 - About half of all methods can only be used in one location:
 - in the lab
 - in the field
 - online
 - 20 methods can be used in all of the above
- Development phases
 - Fully or partially functional prototypes
 - Non-functional prototypes
 - Conceptual design ideas in very early phases of the design process (25%)
- Special requirements
 - Requires special equipment, can be done remotely, requires trained researcher, does not require training
- Period of experience (see next slide)



Period of experience

- Methods deemed uniquely applicable to a specific period (e.g., before, during or after usage) apparently are sensitive to the characteristics of that period
- Thus, there is a differentiation between methods, applying the attribute Period of Experience, which consists of five predefined values:
 1. Before Usage (prior to interacting with a product/service)
 2. Momentary (snapshot, e.g., emotion)
 3. Single episode in which a user explores design features to address a task goal
 4. Typical test session (e.g., one hour in which a user performs some tasks)
 5. Long-term usage (e.g., interacting with a product/service in everyday life)



Attributes to assess UX evaluation methods and findings (1/2)

- Scientific quality
 - Psychometric properties: reliability and validity of the related tool and process
 - Many methods use questionnaires, which are often abused and lack scientific validation, esp. those that measure short term usage
- Scoping
 - Coverage of various facets of real-life UX (e.g., emotion types)
 - There is a need for early-stage methods, expert evaluators practicing Immersion (imagining the experience of specific tasks daily in different situations) is the only available method at the moment



Attributes to assess UX evaluation methods and findings (2/2)

- **Practicability**
 - Usability (e.g., ease of use), feasibility (e.g., equipment/expertise required) and motivation (e.g., fun)
 - Streamlining data analysis for online methods is desirable since some methods collect unstructured data and the analysis is tediously time-consuming
- **Utility**
 - Usefulness of evaluative results to stakeholders (e.g., industry/stakeholders)
 - Concerns are expressed regarding the cost-effectiveness of expert-based methods and the problem of finding the right-domain expertise, which is an issue debated in traditional expert-usability evaluations as well
- **Specificity**
 - Target at certain domains or user groups
 - Group methods exist but the evaluation focuses on single users, so there are needs for group methods, particularly for the early stages of development and especially since social media and online communities are so popular



UX evaluation methods (1/5)

- **Aesthetics measurement** (Lavie & Tractinsky, 2004)
 - An instrument initially developed for measuring web sites aesthetics as perceived by their users, along two dimensions, namely classic aesthetics and expressive aesthetics
 - classic aesthetics: aesthetic, pleasant, clear, clean, and symmetric design
 - expressive aesthetics: creative, fascinating, original and sophisticated design, design using special effects
 - Each of the aesthetic dimensions is measured by a five-item scale



UX evaluation methods (2/5)

- **PrEmo** (Desmet, 2005)
 - PrEmo is a non-verbal self-report instrument that measures 14 emotions that are often elicited by product design
 - Of these 14 emotions, seven are pleasant (i.e. desire, pleasant surprise, inspiration, amusement, admiration, satisfaction, fascination), and seven are unpleasant (i.e. indignation, contempt, disgust, unpleasant surprise, dissatisfaction, disappointment, and boredom)
 - Instead of relying on the use of words, respondents can report their emotions with the use of expressive cartoon animations. In the instrument, each of the 14 measured emotions is portrayed by an animation by means of dynamic facial, bodily, and vocal expressions



UX evaluation methods (3/5)

- **Psychophysiological measurements** for evaluating game UX (Mandryk, Inkpen, & Calvert, 2006)
 - The study recorded users' physiological, verbal and facial reactions to game technology, and applied post-processing techniques to correlate an individual's physiological data with their subjective reported experience and events in the game. The physiological measures recorded were:
 - galvanic skin response, which is a linear correlate to arousal and reflects both emotional responses as well as cognitive activity
 - cardiovascular measures, reflecting emotional activity and stress; respiratory measures, related to emotional arousal or relaxation
 - and electromyography on the jaw detecting tension
 - The study was mainly exploratory towards understanding how the body physically responds to enhanced interaction and the authors recognize the need for a continuation of similar benchmark studies in order to have a valid methodology for objectively evaluating user experience with entertainment technologies



UX evaluation methods (4/5)

- **The fun toolkit** (Read & MaFarlane, 2006)
 - The toolkit has been used to assess children's experience with computer applications. The toolkit comprises the following tools:
 - smileyometer, a discrete Likert type scale with five items represented by smiley faces, ranging from awful (sad smiley) to brilliant (happy smiley)
 - funometer, which is similar to the smileyometer but uses a continuous scale, and has seldom been used due to its resemblance with the smileyometer
 - again-again table, which asks children to indicate whether they would do an activity again
 - and the fun sorter, which allows children to rank items against one or more constructs



UX evaluation methods (5/5)

- **UXCurve** (Kujala, Roto, Väänänen-Vainio-Mattila, Karapanos, & Sinnelä, 2011)
 - The method aims at assisting users in retrospectively reporting how and why their experience with a product has changed over time
 - Users are given a template for drawing a curve describing how their relationship towards the product has changed from the first time they used it until the current day. The template includes an empty two-dimensional graph area and lines for writing on and briefly describing the reasons for the changes in the curve. The horizontal axis represents the time dimension from the beginning of use to the current moment and the vertical axis represents the intensity of the users' experience
 - In order to facilitate users in reflecting about the product, the tool asks them to draw one curve for each one of the following: general experience, perceived attractiveness, ease of use, utility, and degree of usage of the product



UX evaluation methods future needs and research questions (1/2)

1. Methods for the early phases of development
 - How to evaluate concept ideas and non-functional prototypes, when evaluating real use cases in real contexts is not possible?
2. Validated measures for UX constructs
 - Improve the validity of measure-based methods by providing validated measures for different experience focuses and domains, and even for cross-cultural studies
3. Methods for social and collaborative UX evaluation
 - There is a need for methods to address experiences of groups of individuals. How to evaluate user experience of a group employing online social software in a distributed environment?



UX evaluation methods future needs and research questions (2/2)

4. Attention for practicability of methods

- For methods to be usefully employed in product development, issues such as resources and skills required, ease of use, ease of data analysis, applicability of results for the development, should be considered.

5. Effective multi-method approaches

- Which methods work well together? How to effectively collect and analyze the data from different sources?

6. Deeper understanding of UX

- Development of methods and measures quite often takes place even if the domain itself and theories in the domain are still immature
- However, it is important to realize that methods and measure development can substantially be supported by some sound models: as Kurt Lewin already realized: “Nothing is as practical as a good theory”



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- Read, J. C., & MacFarlane, S. (2006, June). Using the fun toolkit and other survey methods to gather opinions in child computer interaction. In *Proceedings of the 2006 conference on Interaction design and children* (pp. 81-88). ACM.



Additional Reading (2/2)

- Ego, Emotion and Experience / Aesthetics, Persuasion and Motivation
 - Draft of Chapter for next edition of Dix, Finlay, Abowd Beale, Human–Computer Interaction, Prentice Hall
- Emotion and Experience, Alan Dix (2012/13)
 - Unit 4 of HCI Course



The End

Questions?