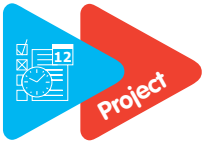
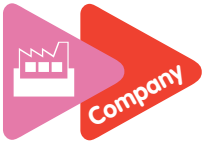
Recommendations for usability in practice
(or how I would do it)





25 recommendations

This card set contains 25 recommendations for usability in product development practice. They are the outcome of my PhD research project and a companion to my thesis 'Managing Product Usability; how companies deal with usability in the development of electronic consumer products'. In these recommendations I discuss how I would organize a product development group if the goal is to make usable electronic consumer products. So am I speculating here? Yes, to some extent. But the recommendations are based on evidence found through three case studies: on actual practices found within companies I studied or on suggestions by experienced product development professionals. In addition I used literature on usability in practice as a source.

Types of recommendations

The recommendations range from very pragmatic and easily applicable (e.g., use guerrilla HCI techniques) to more high-level and challenging (e.g., align the organization with user needs). As a consequence, per recommendation the target audience might differ: upper management, product managers, managers of NPD teams, interaction and product designers and - of course - usability specialists.

Build-up of the recommendations

Each recommendation starts with a summary that outlines why the recommendation is relevant and what is required to execute it. The recommendations also contain quotes from the interviews I conducted. On some cards references to more information on the subject can be found on the back of the card at the bottom.

DESIGN for USABILITY

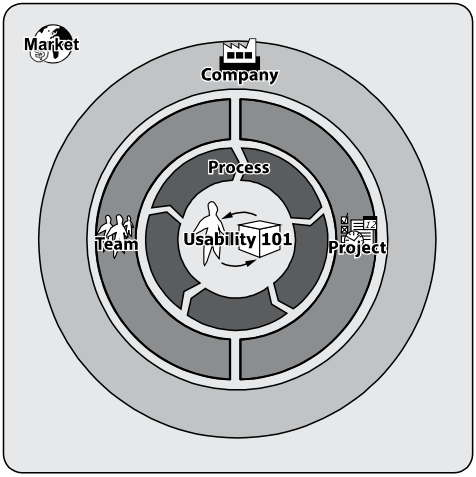
Categories
The cards are labeled with colour-coded icons that indicate the category of the recommendation (see front of this card). The figure on the right side is a visualization of how the categories are related. The categories are:

- Usability 101: how to define usability and assess its consequences?
- Process: what does a user-centred product development process look like, and what methods to apply, and how?
- Team: how to assemble a team that is capable of executing user-centred product development?
- Project: how to organize, facilitate and plan user-centred product development?
- Company: how to organize a company so that it facilitates user-centred product development?
- Market: what are appropriate marketing and sales strategies for companies that make usable products?

Online
The recommendations can be found online at:

> **http://www.uselog.com/2010/09/recommendations-for-usability-in.html**

'User testing' the recommendations
To assess to what extent the recommendations made sense and were relevant to product developers over the course of five weeks I published the recommendations on my weblog



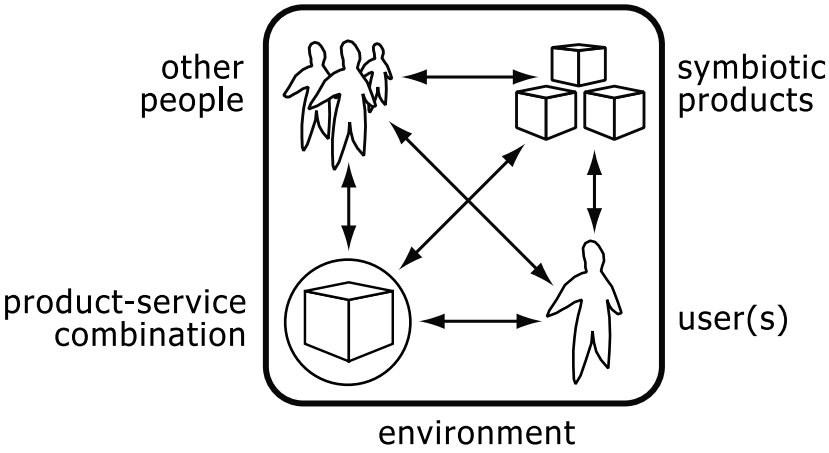
(www.uselog.com) and readers were invited to comment. Based on two rounds of feedback I made adjustments to the recommendations.

A big thank you to the product development practitioners and researchers who took the time and effort to comment on the recommendations: Jim Drew, Bas van Elk, Rich Gunther, Dave Gustafson, Lilian Henze, Samantha Hosea, Frederik Hoolhorst, Janne Kaasalainen, William Lidwell, Meike Mak, Alex, Tim Selders, Froukje Sleeswijk Visser, Marieke Smets, Brian Tidball, Esther Toet and Onno van der Veen.

References

> **Jasper van Kuijk (2010) Managing Product Usability: how companies deal with usability in the development of electronic consumer products. PhD Thesis: Delft University of Technology, The Netherlands.**

Understand usability and what it means for your products



Because

- Usability is considered ungraspable and fuzzy
- Reaching a goal requires an understanding of the goal

Requires

- Discussing what usability means for your products
- Discussing stories and examples
- Involving all disciplines
- Staff with communication skills

Fuzzy and ungraspable

Product developers often describe usability as fuzzy and ungraspable. But in order to reach a goal, you have to know what the goal is. In order to improve usability, you need a shared understanding of it.

Shared understanding across disciplines

Because creating usable products requires cooperation of many disciplines, the understanding of usability should extend beyond the interaction designers and usability specialists. Establish shared understanding of usability across all disciplines, from the marketing manager to the development engineers. And if you're working for an external client (e.g., in the case of web or software development), make sure the client gets it too. But keep in mind that usability is not the only property that makes products succeed. Acknowledge this, or other disciplines might feel you're just another monomaniac usability evangelist.

ISO definition

The ISO 20281 definition of usability of everyday products (ISO, 2007) can serve as a starting point for creating shared understanding about usability: "Usability is 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." Admittedly, due to its somewhat generic formulation this definition does need to be made more specific to be useful. Defining usability is one approach, but creating shared understanding might not require establishing a formal, explicit definition. Achieving a common understanding of what usability is can also be done by storytelling, by examining examples.

"I am convinced that we make good hardware. It's just that the link to the software on the computer, and the content... it can be painful." (Product manager)

What does the context of use look like?
As the ISO definition indicates, usability is highly context-dependent. Based on the framework of human-system interaction (Shackel, 1991), human-product interaction can be said to be influenced by the following elements (see illustration on front, from Wever et al., 2008):

- User(s): the person who is/are at that time operating the system;
- Product: what the user applies to achieve a goal;
- Other people: people that can influence or be influenced by usage;
- Symbiotic products: the network of other products and services that a product needs to function;
- Environment: the physical, psychological and social context for the interaction.

For each of these elements, consider their diversity, and whether they change over time and per usage phase. For example, explore who the user group is, how diverse they are, and whether their needs and goals change over time.
What does usability mean for your products? Should you focus on performance aspects (effectiveness, efficiency) or on experienced usability (satisfaction about use)? What type of usage problems have you noticed or do you consider likely to occur? Are the usability issues cognitive, sensorial or physical in nature? How can you see, measure or detect whether a usability problem has occurred? Do the different phases of use pose different challenges (e.g., installation versus long-term use)?

Which components are involved?
Electronic consumer products are made out of three categories of components:

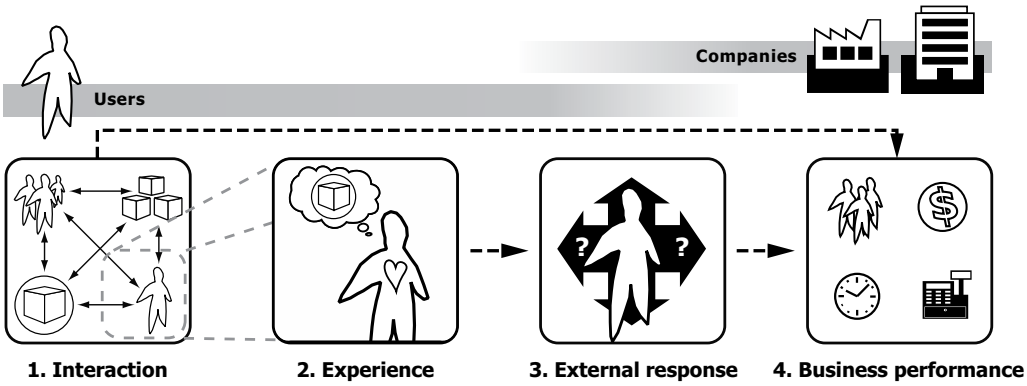
- Product: input (controls), output (auditory, visual, haptic), embodiment, technological platform (hardware + software).
- Extended product: accessories, manual, packaging.
- Ecosystem: symbiotic products, software, services and content.

These are sources of potential usability issues in your products. But more importantly: these are the things you can change. Outline the whole system and explore which components are related to which usability problems. And also indicate over which components you have control and over which you don't (i.e., whether can you make changes to them).

References

> ISO (2007) ISO 20282-3: Ease of operation of everyday products -- Part 3: Test method for consumer products. ISO 20282. Geneva, Switzerland, International Organization for Standardization.
> Shackel, B. (1984) The concept of usability. In: Visual Display Terminals. J. Bennet (Ed.). New Jersey, Prentice-Hall.
> Wever, R., J. van Kuijk and C. Boks (2008) "User-centred design for sustainable behaviour." International Journal of Sustainable Engineering 1 (1): 9 - 20.

Analyse the consequences of usability for your company



Because

> Usability is prioritized if its (business) consequences are understood and visible

Requires

> Analysis of what usability means to your company

Manifestations and consequences of usability
Based on the definitions, examples, stories and analyses from recommendation #1, take stock of how usability manifests itself in your products in:

- Human-product interaction: quantity and quality of output, errors made (effectiveness), time and effort required (efficiency);
- The user experience: to what extent the product is living up to or going beyond expectations about the interaction and user experience (satisfaction about use).

And consequences this may have for:

- The users' external response: customer support requests, complaints, product returns, word-of-mouth;
- Business performance: financial costs, staff, repeat sales, cross-purchases, productivity, extra equipment required.

Effects are likely to be long-term
Note that the consequences of usability are most likely long-term: there is nothing that prevents a product with poor usability from being launched in time, and poor usability may not affect sales performance (at first). However, as usability is about consumer satisfaction, in the long run usability might affect repurchase intent and cross-purchasing, product returns, demand on customer support and brand perception.

"Because at that time it was also decided, somehow, that we decided to keep it as is. As it would not cause any returns. Since this is a just a one time operation." (Usability specialist)

Anticipated consequences influence priority
Analyzing the potential consequences of usability is essential, because anticipated consequences of usability play an important role in the prioritization of usability. The effects of usability can be communicated by means of a quantitative analysis, documenting for example product returns and customer satisfaction scores, but also through videos of user-product interaction or by having product developers and upper management experience their own products.

References

- Bias, R. G. and D. J. Mayhew (1994) Cost-Justifying Usability, Morgan Kaufmann.
- Reichheld, F. F. (2003) "The one number you need to grow." Harvard Business Review 81 (12): 46-55.
- Donoghue, S. (2006) "Dissatisfied consumers' complaint behaviour concerning product failure of major electrical household appliances – a conceptual framework." Journal of Family Ecology and Consumer Sciences 34.

Decide whether usability should be a priority

Because

> User-centred product development requires a significant investment and support from upper management

Requires

> Understanding of usability and its consequences for your company
> Understanding of the potential benefits of usability for your company
> Discussing the requirements for user-centred product development
> Understanding the required investments for implementing user-centred product development

Will you benefit?

Usability does not come cheap. Implementing a user-centred product development process is likely to require a significant investment in resources, organizational changes and support from upper management (cf. Vogelstein, 2008). Thus a conscious choice should be made whether usability should be a priority at all. Based on the aforementioned analysis of usability (card #1), and of the consequences of usability for your company (card #2), decide whether usability should be a priority. Even if you do consider usability an important issue for your products, consider whether your company will be able to make the required investment.

Costs and benefits of usability differ

This also depends on your company's brand position and product position. An established, premium brand may suffer more from dissatisfied customers than a C-brand, and if a company has

a high-end product position it will have more resources to ensure design freedom than a company with a fast-follower, value-for-money product position. Also, if your company is still struggling to ensure product quality or is very much focused on sales numbers and less on customer satisfaction, you are less likely to be able to prioritize usability during development, as other, short-term issues will probably take precedence.

"That's the whole philosophy of our brand: that it has to be easy to use, for everyone."
(Market intelligence manager)

How to make it happen?
This step is about putting your resources where your mouth is. If you decide that usability should be a priority for your company, discuss the requirements that places on your way of working. Are changes to the product development process required? Do you need additional skills in your development teams? And how can each discipline within the company contribute to usability? For example, how can the mechanical engineers or the graphic designers contribute to usability, and how is their work related?

References

> **Vogelstein, F. (2008) Weapon of mass disruption: the untold story of the iPhone - and how Apple transformed the wireless industry forever. Wired. New York, Condé Nast publications.**

Process

A development process that facilitates user-centred methods

Because:

> Creating usable products requires user research, user-centred synthesis, usage evaluations, and iterations

Requires

> Sufficient time to execute methods for user-centred design in all phases of product development
> A product development process that is equipped to deal with the outcomes of user involvement

What is a process?

The structure of a product development process should facilitate the integration of user-centered design methods. Davenport (1993) defines a (business) process as:

> "A structured, measured set of activities designed to produce a specific output for a particular customer or market. It implies a strong emphasis on how work is done within an organization (...). A process is thus a specific ordering of work activities across time and space, with a beginning and an end, and clearly defined inputs and outputs: a structure for action."

The spine

Consider the product development process the 'spine' to which all the individual steps are attached. This spine should thus feature sufficient time, resources and staff to execute methods for user-centred design, but also be designed as to

integrate the outcomes of these activities. If there is no space on the spine for new limbs, you will not grow the limbs for a hands-on approach to user-centered product development.

"Up to now it mainly was the UX team trying to initiate things. We are now formalizing the way we commission user research and evaluations and also the way in which we deal with the results of that research."
(Requirements manager)

Facilitating user-centered design methods
If your company has a standardized product development process, ensure that it facilitates:

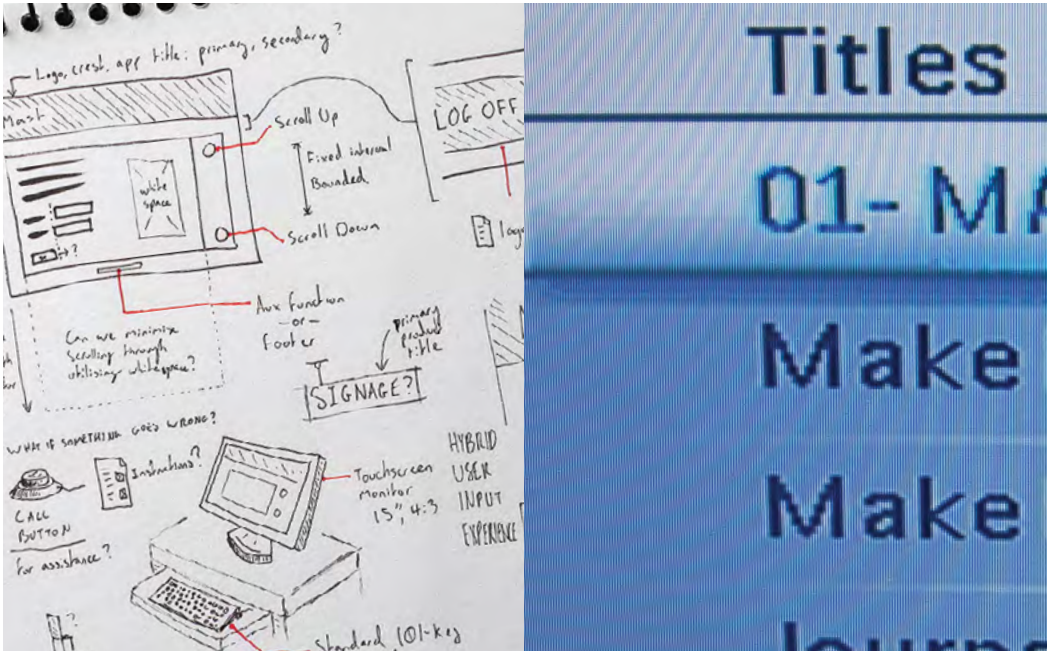
- The execution of (early) user research;
- Thorough user-centred synthesis steps;
- Evaluations of product usage, and,
- The opportunity for redesign(s) and implementation of these, as the value of a usability evaluation is in the follow up. A usability test as such does not increase the usability of a product, implemented (re)-designs do.

References

> Buijs, J. (2003) "Modelling Product Innovation Processes, from Linear Logic to Circular Chaos." Creativity and Innovation Management 12 (2): 76.
> Davenport, T. (1993) Process Innovation: Reengineering work through information technology. Boston, Harvard Business School Press.
> ISO (2008) ISO DIS 9241-210:2008. Ergonomics of human system interaction. Part 210: Human-centred design for interactive systems (formerly known as 13407). Switzerland.

Process

Think concept as well as detail



Because

- The choice of UI concept determines the hypothetical maximum level of usability
- How well a UI concept is implemented determines how close you get to that hypothetical maximum

Requires

- Development of multiple UI concepts
- Prototyping of multiple UI concepts
- Comparative evaluation of UI concepts
- Attention to detail
- Multiple iterations of evaluation and redesign
- High design freedom
- Interaction designers as well as user interface designers

Choose a concept and don't compromise
To develop usable products carefully select the appropriate UI concept, and then refine and implement it without compromise.

A concept is a promise
When selecting an interaction concept move with caution, as some concepts offer a much higher potential level of usability than others. Especially when selecting a UI concept that will be implemented throughout a product line, the consequences of selecting an inferior interaction concept can be severe. To be able to select the most appropriate UI concept, design and simulate concepts in sufficient (maybe even in full) detail, and subject them to a comparative evaluation.

Delivering on the promise
Once a UI concept has been chosen, improve it through (many) iterations of evaluation and

Photo (left): NathanaelB @ Flickr

redesign, each time zooming in further on properties of the product that can be improved. Implement the optimized design without compromising it, which requires sufficient design freedom (resources + ability to change the design).

> **"Our products tended to be for geeky people, people that like to sit and play with their computer. We wanted something that perhaps my mother could have, bought from the shop, switch it on and it was simple to use. But that required us to completely rethink our product."** (Hardware development manager)

Fixing problems versus overhauling the concept
Especially when working on a new version of an existing product - in which case a UI is already in place - it might be tempting to focus on fixing the known usability problems of the predecessor product. However, it might be that overhauling the underlying concept is the appropriate way to go, because that would improve the overall usability of the product much more. Whether changing the UI concept is possible, however, depends on the design freedom, goals and planning of a project.

Both interaction and UI designers
In order to get this attention to concept as well as detail you need people that can analyse usage situations and synthesize designs with the usability of the product as a whole and its ecosystem in mind, as well as people who like the nitty-gritty work of perfecting the details of the user interface, such as optimizing transitions, icons and text labels. In other words: interaction designers, as well as user interface designers.

Think development rather than design

Because

- It is about usable products, not about usable designs
- An 'ok' design that gets implemented is more usable than a dream design that gets compromised beyond recognition

Requires

- Truly collaborative product development, involving all disciplines
- A development team that is conscious of limitations
- Product manager responsible for whole product innovation cycle

Don't create unfeasible designs

A design of an extremely usable product is worthless if your company does not have the skills and means to implement the design. Interaction designers and usability specialists should be conscious of the limitations posed by resources, technology and business models. This is facilitated by all disciplines working 'under one roof' (see card #13). On the other hand, interaction designers and usability specialists should also challenge limitations, push the envelope (some engineers may be inclined to say "no" to any request that implies change), in order to ensure design freedom (see card #17). But in the end, an 'ok' design that gets realized is more desirable than a dream-design that gets mutilated beyond recognition.

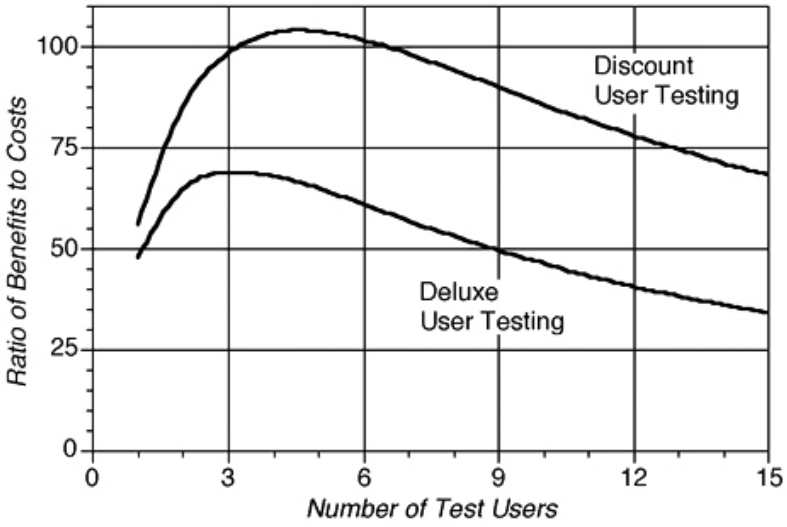
One person responsible from start to end

The product manager or planner should be responsible for the whole product innovation

cycle, from design brief formulation to product in use. If the person that manages the early stages of product development - creating the design brief, requirements, concept, design - is also responsible for delivering the actual product, he or she will think twice about coming up with a design that's all but impossible to implement. Secondly, if a product manager is responsible from the product's conception up until providing customer support s/he is also confronted with the consequences of design decisions, ensuring a feedback loop and thus learning.

"The products can look good on paper, but then they go through a process, where this happens: 'Look, you can't do this because of costs, and you have to take this functionality out because it would be too expensive' or 'it's going to take too long to do this, other type of market and we don't have the supplier to do this and this and this.'" (Market intelligence manager)

Apply guerrilla usability techniques



Because

> **Multiple, small-scale, fast iterations are more effective than one half-hearted 100% 'reliable' iteration**

Requires

> **Knowledge of and experience with guerrilla user-centred design methods**
> **Company culture open to qualitative methods**

Pragmatic considerations

In product development practice pragmatic considerations, such as required time, staff and costs, are very dominant considerations for choosing which methods for user-centered design to apply. More important even than the perceived effectiveness of a method. Practitioners benefit more from methods that are widely applicable and mostly accurate, than from methods that are hundred percent reliable and accurate, but hardly ever applied. Many small-scale evaluations and iterations are preferable over a single, late and half-hearted iteration.

Guerrilla usability methods

Jakob Nielsen (1994) presents methods for user-centred design that can be applied in a limited amount of time, by a limited amount of people, and at limited costs, which he refers to as 'guerrilla HCI' or 'discount usability engineering'. Successfully applying discount methods does require a company culture that is open to qualitative analysis and evaluation techniques.

"Usually we try to do the testing in English-speaking countries, primarily because of the costs. Because doing this stuff is really expensive." (Market intelligence manager)

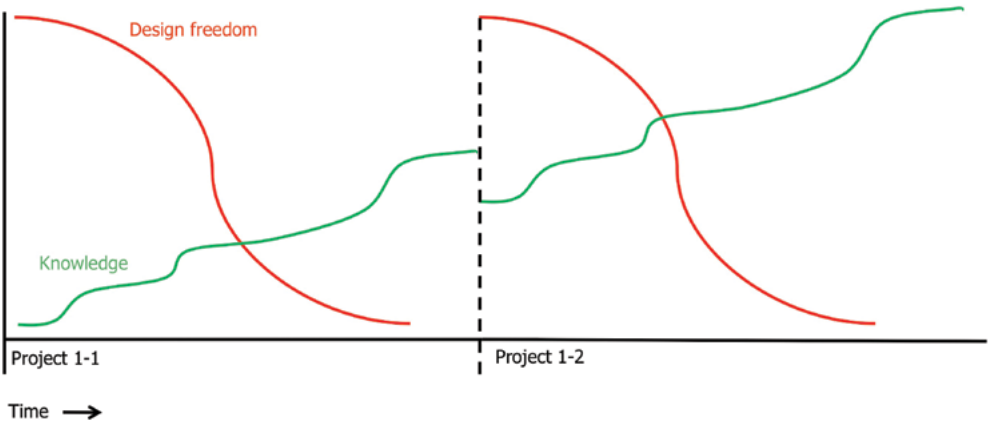
Image: www.useit.com, Jakob Nielsen, Nielsen Norman Group.

References

> Nielsen, J. (1994) Guerilla HCI: Using Discount Usability Engineering to Penetrate the Intimidation Barrier. Cost-Justifying Usability. R. G. Bias and D. J. Mayhew. London, Academic Press.

Process

Early user research, usage simulation and evaluation



Because

> Early knowledge = high design freedom

Requires

> Conduct user research previous to project start
> Early prototyping & testing
> Usability inspection methods
> Transfer of information from previous projects
> Apply after sales feedback from previous projects
> Similarity over product generations
> Keeping product development teams intact over generations
> Accepting that you can't - and don't need to - quantify everything

Early phases = high design freedom
Early in the product development process design freedom (design mutability + available resources) is still high (see figure above). This explains the desire for the early availability of user research - in order create a usable design - and early usability evaluations - to be able iterate this design.

User research before official project start
As product development projects usually hit the ground running and time pressure remains high throughout, it is recommendable to already execute the user research for a new project during the implementation phase of the previous project. In the later phases of product development usability specialists and interaction designers should still be involved, but more in an advisory capacity. So they are available to start conducting the user research needed for the next generation of the product.

Early evaluation = early simulation
As in the early phases the design is not yet detailed, early evaluation implies using simulations that may not be representative for the final product and that are not very mature, such as paper prototyping and physical mock-ups (Buchenau and Fulton Suri, 2000). To ensure that evaluations are conducted, apply 'low cost' evaluation methods, such as usability inspection methods (e.g., cognitive walkthrough (Rieman et al, 1995), heuristic evaluation (Nielsen, 1992)) and 'quick & dirty' user testing (see card #7).

"And if you don't do this in an early stage, in a majority of the cases it simply is not possible to change it in a later stage. (...) At the moment we are trying to do that more."
(UI manager)

Information from previous projects
The results from usability tests conducted in previous projects can contain important information, as often not all usability problems that were identified could be dealt with within that project. After sales feedback (e.g., reviews, helpdesk calls, satisfaction surveys) on previous generations of the product is also a very valuable source of information on usability issues. For after sales feedback to be useful, there needs to be a certain degree of similarity between product generations, and the 'resolution' of the information needs to be high enough for designers to base design decisions upon.

References

- Nielsen, J. (1992) Finding usability problems through heuristic evaluation. SIGCHI conference on Human factors in computing systems, Monterey, California, United States, ACM Press.
- Rieman, J., M. Franzke and D. Redmiles (1995) Usability evaluation with the cognitive walkthrough. Human factors in computing systems Denver, Colorado, United States ACM Press.
- Buchenau, M. and J. Fulton Suri (2000) Experience prototyping. Conference on Designing interactive systems: processes, practices, methods, and techniques, New York City, New York, United States, ACM press.

Inside-out approach to user research and usage evaluation

Because

- Early knowledge = high design freedom
- Resources are limited
- You can't look inside other people's heads

Requires

- Personally exploring a product (user research) or a evaluating a design (user evaluation)
- Understanding of and empathy with the user group
- Compensating for participants not being similar to the projected user group
- Compensating for designer bias
- Compensating for bias due to personal experience

The only head you can look into is your own

For both user research and usage evaluations, take an inside-out approach. When conducting user research for a new product, start by using the product yourself. For one, this is often relatively easy to arrange, and secondly, this is the only way to experience first hand how it is to interact with a product (category): you can't look inside anyone's head except your own. Exploring a product first hand will sensitize you to the issues that are important for interacting with this product. Next, you can observe and interview colleagues at work, and after that you can - informally - study family and friends. Finally, user research can be conducted among people that are thought to be representative for the actual user group.

The same approach goes for usage evaluations: a design can first be evaluated by the designer, then by his/her team, then by colleagues outside

Photo: jlcwalker @ Flickr

the team, then by friends and family, and finally with a group of test participants considered representative for the user group.

You are your own first checkpoint
The idea is that both for user research as well as for usage evaluations the initial first 'inside' steps provide high-resolution information and require limited investment of resources. And though the results may not be completely representative, they do sensitize the development team to the most important issues. And it increases the chance that by the time a full-fledged user test is conducted you can focus on the more detailed issues as the most obvious ones have already been filtered out.

> **We have to iterate by looking at foam models. (….) We're looking at, for example, keys. Are they separate enough (…) or will they be accidentally pressed? Or the side keys are they buried enough, or are they sticking out a lot?** (Industrial designer)

Bridge the designer-user gap
When going through the 'inside' steps, be aware that you are not the user. Try to compensate for this designer-user gap (Nielsen, 2008) with techniques to invoke empathy. For example by simulating how it is to be a user very different from yourself, as with the third age suit (Hudson, 2002), and with the help of usability inspection techniques, such as cognitive walkthrough and usability heuristics. Secondly, being aware of the context of use of actual users can help designers to better be aware of the differences between them and the user, and help to better anticipate future usage (van der Bijl-Brouwer and van der Voort, 2009). This can enable you, for example, when evaluating a prototype, to be aware that real users might feed the dog while using your product, and not give it the dedicated attention that you do.

Designer bias
Be aware that because you have defined, designed and/or developed the product, you have infinitely more knowledge about how it works than the user has. In their book 'Made to Stick' the Heath brothers call the inability to unlearn what you have learned and thus being less able to explain things to others the 'Curse of Knowledge'. Also, when conducting user research or usage evaluations with colleagues and/or friends and family, be aware of the differences between you and the projected user group. And that participants' reactions might be influenced by the fact that they know you and/or the company you work for.

Personal experience bias
Another pitfall of the inside-out approach is that because you encountered certain usability problems when trying the product yourself, you already 'know' what usability issues others will encounter. You may become 'blind' to new, emerging usability issues. Try to stay open minded.

References

- Hudson, W. (2002) "Simulating the less-than-perfect user." Interactions 2002: 7-7.
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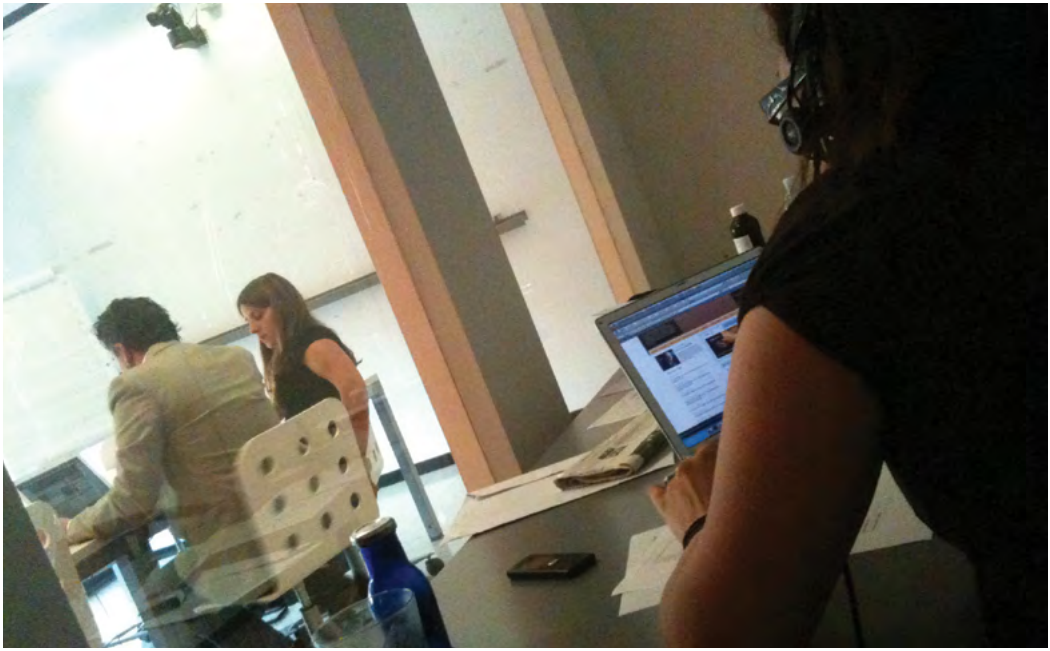
Process

Rich communication of user research and usage evaluations



Because

> Designers need detailed information for design decisions
> Facilitates understanding, acknowledgment, empathy and engagement

Requires

> Capturing user research and evaluations on video
> Integrating video clips when presenting user research or usage evaluations
> Involving designers in user research and usage evaluations
> Presence of team members at user research or usage evaluations

Understanding, acknowledgement, empathy

Human-product interaction is very hard to capture in words, let alone numbers. Communicating the results of user research or usage testing to development teams in a 'rich' way (Sleeswijk Visser, 2009) - by the team being present at user tests or at least by showing them videos - increases a team's understanding of the results, as well as their trust in and empathy with them. When communicating user research and usage evaluations within a product development team check whether you are establishing:

- Understanding: comprehending the usability issue;
- Acknowledgement: believing it's actually a problem;
- Empathy: identification with (people having) the problem;
- Engagement: feeling responsible for the problem;
- Action: dealing with the problem.

Photo: Luca Mascaro @ Flickr

Rich communication ends discussion
Communicating user research and usage evaluations in a 'rich' way ends discussions. There is no denying that a problem actually occurred when it is happening right in front of you. And it's a lot harder to blame the test participants when you've seen for yourself that they are not complete morons.

> **"We asked software engineers to sit in during the consumer tests (...) to have them see this is really something that people experience. (....) I think that for some of them it was something like a turning point in how they see things. After that they got a very proactive attitude."** (Product manager)

Communicates unsolicited information
Secondly, communicating the results of user research and usage evaluations in a rich way offers the development team much more information than just the issues the research was setup to uncover. For example, videos of a field study don't just show how people have set up their stereo equipment (if that is the focus), it also shows how people talk about those products and what their homes look like. When making decisions designers integrate huge amounts of - often tacit - knowledge. Through rich communication of user research and usage evaluations you may feed them very important information for design decisions in the current project as well as in the next.

Designers as user researchers?
One of the most effective ways to communicate user research and usage evaluations to designers may be to have them execute it. It doesn't get any richer than doing it yourself. Usability specialists could involve industrial and interaction designers in the execution of user research and evaluations. Or maybe the roles should not be separated, and there should be what Boivie et al. (2006) refer to as the 'Usability Designer': someone that is proficient in all aspects of the user-centred design cycle, not just in user research and/or evaluations.

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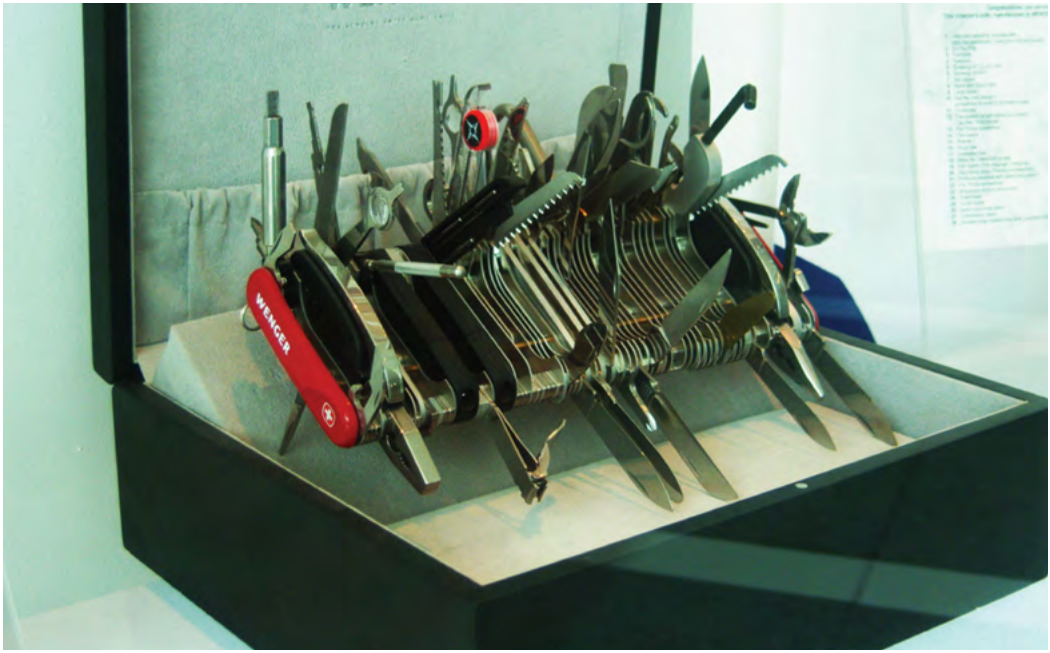
Process

Select the appropriate functionality



Because

> Products with extensive functionality are more prone to be unusable as well as harder to develop

Requires

> Knowledge about the user group (needs and preferences)
> Knowledge about product usage (usage frequency of functions)
> Looking at a product from the user perspective (and not the buyer's or the geek's)
> A functionality evaluation and selection method
> Ianus prioritizations of functions: from both a sales and usability perspective
> Prioritizing quality over quantity of functionality

Twofold negative effect

Equipping a product with extensive functionality can have a twofold negative effect on usability. A product with many functions is likely to be less usable because:

1. The user has more functions to learn and choose from, and
2. The development team has more functions to design, implement, and integrate into a fluent whole.

Functions, not features

We're talking functions, not features. Functions are what the product can do for the user, such as cleaning clothes or playing music (Shackel, 1984; Grudin, 1992), while features are the identifiable aspects of a total product offering that a critical reference group perceives and evaluates as an 'extra' to a known standard among comparable products (Thölke et al., 2001).

Fewer functions, less buyer appeal
Although in general it is probably beneficial for a product's usability to prioritize quality over quantity of functions, a product's functionality should not be kept to a minimum per se, as this is likely to make it harder to sell. There are many 'simple' products that were never heard of again (e.g., Philips Easy Line, Microsoft Works, Vodafone Simply).

Fewer functions ≠ more usability
Secondly, a product with more functionality can be used for a larger variety of goals, which - considering the definition of usability (see card #1) - in some respects makes the product more usable. For example, putting a camera, calendar, and MP3 player into a mobile phone is indeed likely to make it harder to just make a call. However, for the goal of carrying around as few devices as possible, a product with all the aforementioned functions is more usable in comparison to having to carry around a digital camera as well as a PDA, MP3-player, and a mobile phone.

> **"The view from marketing was that every year you had to offer new features. But at some point this has to stop. You can't put more and more features in the same product every year."** (Interaction designer)

Ianus-prioritization: sales and usage
As electronic consumer products are sold for a large part based on the functionality they offer, but an excess of functionality is likely to lead to a less usable product, a Ianus-prioritization of functionality should be made, highlighting the sales as well as the usage perspective, and thus capturing and separating which functions are important to:

1. Sell the product, and which
2. Contribute to a satisfying user experience.

And don't kid yourself, these lists are not necessarily identical.

Identifying versus selecting
It is much easier to identify possible functions than to select the right ones. New functions can be identified through user research, studying competitor products, focus groups, etc. However, few methods are available to subsequently converge on an appropriate set of functions, one of the few being the Conjoint Analysis.

Prioritizing use cases by frequency and impact
Selecting the functions that are most important for usage - and that thus most attention should be paid to while developing a usable product - should be done based on usage frequency (how often a function is used) as well as on usage impact (how important it is if it is used). An example of a use case with a high usage frequency would be playing a song on an MP3-player. A use case with high impact would be activating the emergency brake on a train. Based on usage frequency and impact the use cases can be labelled primary, secondary, etc. This prioritization can be used to direct attention and resources when designing, evaluating and implementing the product.

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User-centred design skills on the team early and throughout

Because

- Early phases = high design freedom
- Early perspective on human-product interaction
- Transfers knowledge from previous user involvement
- Enables execution of user research
- Allows designers to be sensitized to the assignment and restrictions

Requires

- Early and throughout involvement of interaction designers and usability specialists
- Usability specialists and interaction designers present in organization
- Product development process facilitates methods for user-centred design
- Sufficient staff
- Budget

Early presence of user-centered design skills
User-centred design skills should be present in the team throughout the product development process, from the very first start. User-centered design skills means knowledge of and the ability to execute user research, synthesize usable designs, prototype designs, and evaluate them.

Early phases = high design freedom
In the early phases of product development important decisions with regard to product definition and the technological platform are taken. Usability specialists and interaction designers should be involved in, or at least be informed about, these decisions. Maybe the UI in itself is not designed in this phase, but the interaction definitely is. This is issue is especially relevant for electronic consumer products, as, in contrast with most web and software products, for electronic consumer products the hardware, operating system, software, and the controls

are custom-made, and decisions about these components are taken early on. As design freedom is highest in the early phases, user-centered design methods should be applied early on (card #17), which in turn implies that user-centered design skills need to be present.

Customer-centered ≠ user-centered
The roles that are most likely to provide a product development team with user-centered design skills are usability specialists and interaction designers. The knowledge of usability specialists differs from that by product managers or market researchers, as the latter roles usually focus on the buyer and not on the user. For them the primary goal is to know why people buy a product, not what properties of human-product interaction (dis)satisfy the user.

> **"I think that it is good to involve people like us, the usability people, in an earlier phase, when you define how the user interface will look like, the wording, etc. It doesn't mean that we have to be a checkpoint, but we can say: 'This looks strange.' Obvious problems can be identified way earlier, without the user telling us."** (Usability specialist)

Usability specialists
Setting user-centred requirements is a lot easier if you have conducted user research. And setting requirements is done rather early. Which means that user research has to be conducted even before that. Which means: bringing in the usability specialist (or whoever conducts user research) from the start. Secondly, even in the earliest phases of product development usability evaluations are possible, for example on usage scenarios, on paper prototypes or through cognitive walkthroughs. Usability specialists can provide the team with the knowledge and skills to apply these methods and techniques. Finally, usability specialists have often witnessed many user tests and have (possibly) acquired a thorough understanding of the user group through previous user research. They should provide input in the early phases to be able to apply the knowledge they have gained in previous projects.

Interaction designers
Interaction designers should be on the team from the start so they can be involved in setting requirements and constraints: they can anticipate what these will mean for the interaction. Many usability problems arise as a consequence of decisions about a product's ecosystem or technological platform. If the interaction designer is only involved in designing the user-interface, his/her design freedom is extremely limited. Being involved in an early phase allows designers to point out potential problems. And to be aware of these limitations when they synthesize the UI. Both software engineers and interaction designers can tell stories about how frustrating an exercise it is to compromise a 'dream design' into oblivion.

Designing is more than synthesis
Do not bring the interaction designer on board only when the actual design needs to be synthesized, because to make a good design, you need a deep understanding of users, the product category, and technological limitations and possibilities. It is unlikely that a designer can develop just as good a solution if s/he joins the team by the time the design needs to be made and then provide a list of requirements. Designing is just as much about thorough analysis as it is about creative synthesis.

One roof: all disciplines in one room throughout the process

Because

- Informal communication is efficient and effective
- Facilitates cooperation between industrial/interaction designers, software/hardware developers
- Facilitates shared understanding
- Allows all team members to learn from their actions

Requires

- Team members being present
- Office architectures that facilitate both project spaces and departments
- One central product development location
- Being in one project room (or having regular work sessions)
- Budget
- Staff

A shared space for project teams

The development of usable products requires the involvement of all disciplines: from the interaction designer to the product manager, from the usability specialist to the development engineer. In product development of electronic consumer products these disciplines are usually seated in separate departments. Try to let them work in truly collaborative project teams. Especially in the phases in which the product is defined and designed, but also during implementation. Let project teams work in a shared project space to allow for continuous informal communication. On the other hand, team members should also keep in touch with their departments, as this enables them to share experiences and knowledge regarding their specific discipline.

Software/hardware, interaction/industrial split

It is fairly common in the development of electronic consumer products that the

Photo: Andreea Collet @ Flickr

development of software and hardware are separate projects and teams, between which collaboration can be cumbersome. Though far from optimal, in the light of concurrent engineering one can imagine this happening. Surprisingly, however, often also industrial designers and interaction designers hardly cooperate, and even can be based in different departments. Again, there may be arguments for doing this, but it is hardly beneficial for alignment between the physical and the on-screen UI.

"Everyone must have experienced it: if you sit in a corner, with a small team, separate yourself from the rest and work closely together, then you move much quicker."
(Designer of user manuals)

Informal communication
It is about alignment, about different disciplines understanding each other, as well as having a comprehensive picture of the product they are developing. True collaboration happens best in an informal, day-to-day mode, which is most likely to arise when located together physically. Working together also results in a more positive mindset, focused on solutions and understanding each other's perspective, instead of underlining problems, disagreements and company politics.

One roof
Yes, there is collaboration software for distributed teams, but nothing works quite as well as simply sharing a room. And that does not mean a meeting. A meeting only allows team members to learn about a specific topic, while by being in the same room team members learn things about the product and other disciplines that may not directly influence their particular assignment, but it will allow them to make a better contribution.

Work sessions instead of meetings
If being situated full time in the same space is not an option, as a fallback option you could regularly hold work sessions. There is an important distinction between holding a meeting and working together. The latter is focused on sharing information, talking through issues and challenges, the first is focused on working through design challenges together, as a (multidisciplinary) team.

Design and engineering
Collaboration between those who make the design and those who have to implement it: that can be painful. As argued earlier, if interaction designers are involved early on, they can point out the consequences of requirements and early (platform) design choices (card #12). And interaction designers being aware of the properties of the technological platform limits complications during implementation. But it also works the other way around: during implementation interaction designers and usability specialists should be available to the engineers on a day-to-day basis. No design is perfect, and usually changes are required for it to be implemented. Development engineers should have quick, informal access to a person who can answer their questions.

Learning from evaluations
Finally, it is important for the whole team to learn about evaluations (e.g., user tests, cognitive walkthroughs) of their product, as this enables them to learn about the consequences of their decisions, but also because they can provide input for possible solutions. Again, this is more likely to happen if a team sits in one room.

Feed the 'feel for the user' - communicate feedback to teams

Because

- Increases the 'feel for the user', which is essential for user-centred design proficiency
- People take pleasure in seeing the result of their work

Requires

- Communicating the results of user evaluations and after sales feedback to the whole product development team in an engaging manner

Feedback to the whole team

Make sure the results of usage evaluations are not only communicated to the product managers and usability specialists, but also to the interaction designers and product designers, and preferably to the whole team. Invite them to witness a user test or the presentation of results, even if they are at that time no longer a part of the product development team, work in different departments, in a consultancy-like role, or if they don't work on the user interface. The same goes for after sales feedback. Don't let customer complaints, field studies, and customer satisfaction studies stop at the product manager, but share them with the whole development team. They'll learn from it.

The 'feel for the user'

Providing this feedback will foster their 'feel for the user': their intuition about what makes a usable design, which can improve the next generation of products tremendously. Besides, no one likes to see the results of their work disappear into a black hole and never learn how people think about the products they worked on.

Illustration: ok-cancel

"Designers rarely have the opportunity to see outside people interacting with their product, so when they do they become very inspired by what they see. (...) They get a tremendous amount of empathy for the user. So that's why they just need to see the user test."
(Usability consultant)

www.designforusability.org

Team

Get and keep experienced people

Because

- Experience fosters 'feel for the user'
- Domain knowledge is crucial
- Enables knowledge transfer

Requires

- Keeping project teams intact (over projects)
- Low personnel rotation

Experience matters

Experienced product developers have a better understanding of the intricacies of a product category and over time they can develop a 'feel for the user' that is very hard to transfer from person to person. Secondly, having gone through several development projects increases a team member's understanding of the development process and of other roles in the team.

Keep teams intact

Keep product development teams intact over projects. Consider a product launch a release of a version, not of the definitive product. Keeping the development team intact is the best way to ensure communication of usability issues and suitable design solutions from one project to the next.

Reward expertise

This requires low personnel rotation, which in turn requires a company culture in which being in product development is not considered a first start or stepping stone. Keeping product development roles attractive to experienced product development professionals can be facilitated by a personnel policy that offers experienced specialists just as much of a path to grow and similar rewards as managers.

Photo: Nick DeWolf

"The worst that can happen to a product is a new product manager and a new interaction designer, because they'll want to leave their mark and have no idea yet what users want." (Product manager)

A warning

A potential pitfall of having experienced people in a development team may be a lack of ambition for innovation. If you have a lot of experience and domain knowledge you know about all those things that have been tried and that went wrong. That might make experienced team members somewhat risk averse. From this respect it may be beneficial that new team members are somewhat naive; with it come new perspectives and insights.

Don't let designers do their thing

Because

- Large (potential) impact of design on usability
- Some designers want to be artists
- Some designers believe they represent the user

Requires

- Designers educated in human-product interaction principles and methods
- Analytical designers, or intuitive designers embedded in a user-centred process
- Learning: seeing user tests, after sales feedback
- User-centred product designers (as well as interaction designers)

Design can make a difference

Synthesizing the design is one of the most influential and yet most ungraspable steps in the development process. In the synthesis step all requirements and information are integrated. This is where designers can make a huge difference: given the same amount of resources, one design may fulfil all (user) requirements, while another one falls short. But give three designers the same briefing and chances are you'll end up with three completely different designs. So it matters which designer you pick for the assignment.

The analytical, the intuitive and the artistic

When allowing prejudices to prevail one could distinguish three breeds of designers: the analytical, the intuitive and the artistic designer. The analytical designer works systematically: analyze, synthesize, evaluate and iterate. The intuitive designer's way of working is less method-driven, but does take into account

the goals that were set. The artistic designer considers designing an art. In other words: it's a kind of magic. Again, being blunt, I would say that the first two types of designers want to make something that works - be it via different paths - while artistic designers want to make something they like.

Analytical does not mean boring

But creative is not the same as artistic. It takes a tremendous amount of creativity to - when faced with limitations - come up with a solution that works; constraints can actually be a source of creativity (Dadich, 2009). As the Dutch poet Jules Deelder put it: "Inside the box the possibilities are just as big as outside of it."

> **"Making design decisions based on assumptions is very bad for usability. It is good to have a gut feeling about something, but you need to verify the assumptions you base your design upon. You need to ask users, observe them, and give them the design to test it."** (Industrial designer)

"I know what the user wants"

And then there are some designers (both industrial and interaction) that consider themselves the 'representative of the user', without actually looking at the user. Without conducting user research and user evaluations they believe they understand what users need and want. For them, being user-centred is designing a product based on their own knowledge and experiences. Product, interaction and user interface design is not about 'doing your thing'. Whether you think you represent the user or not.

Don't let designers do their thing

Designers should be less like gods and more like servants. If your goal is to make usable products, hire designers that lean towards the analytical and that have thorough knowledge of user-centred design methods. Or embed intuitive designers with a positive attitude towards user-centred design in a user-centred design process (card #4) and team (card #12), which ensures their intuition is fed (card #14) and verified (card #7). And then leave your designers alone; don't try to manage how they synthesize. It really comes down to not to let designers do their thing, but do let them do their thing.

Making things that work

To paraphrase an old HCI adage, 'cool' is not a good adjective for user interfaces. Designing for usability is not about making something that's cool in the designer's book; it is about making something that works for the user (and that the user may find cool). That requires a lot of knowledge about the user group, about methods, about design techniques. And it requires the attitude of putting the user centre stage, while acknowledging that you are not the user. And, yes, it also requires a little bit of magic, of talent, of je-ne-sais-quoi. Some designers just get it.

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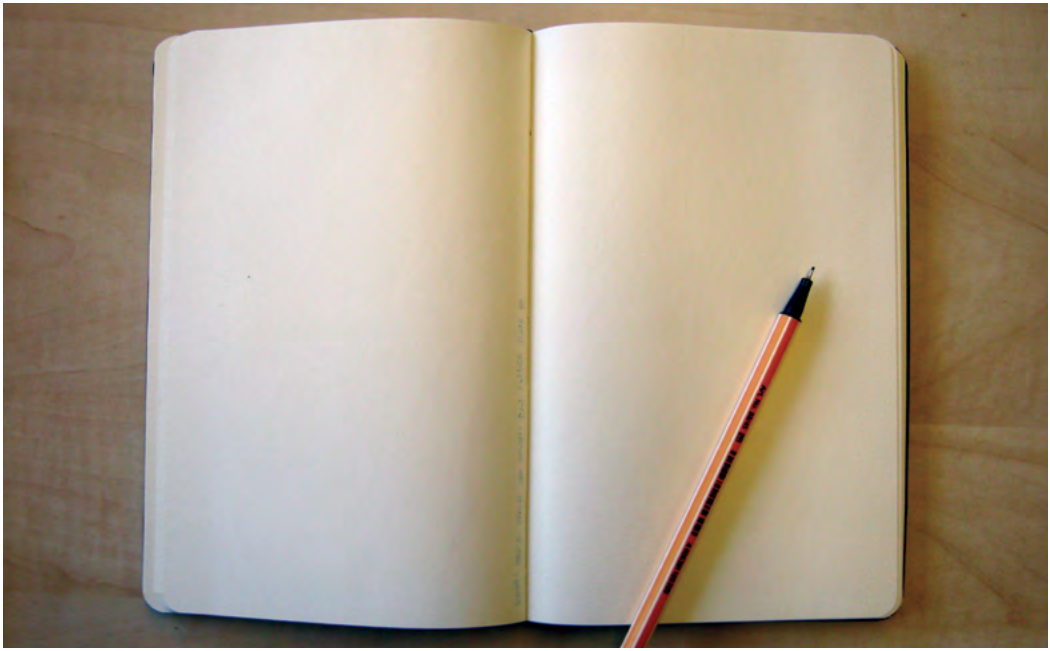
Increase design freedom



Because

> Knowledge & user-centred design proficiency are useless when not applied

Requires

> Sufficient resources to design and implement a user-centred design (time, staff, budget, equipment)
> Development team has control over the technological platform
> Flexible hard/software architecture
> Ownership of the UI (not depending on suppliers)

Mutability and resources

You can feed all the knowledge you have about the user group, potential design solutions and usability issues into an extremely sophisticated user-centred design process, executed by the most user-centred team imaginable, but if they can't apply their knowledge and talents, it's all useless. If you're not allowed to change a component to begin with, for example because it is produced by a third-party supplier, you cannot improve it. If you are not given time, budget, or staff to work on an issue, you cannot improve it. To make use of a team's knowledge and user-centered design proficiency, product developers need 'design freedom': the combination of sufficient resources (budget, staff and time) and design mutability (being allowed and able to change a design). To draw a parallel, if you are sketching, the amount of empty space on your paper is the degree of mutability, and the crayons and time you can spend are your resources.

Control the technological platform

For electronic consumer products, design mutability can be improved by developing a technological platform with a flexible hardware and software architecture, as this facilitates the implementation of changes late(r) in the development process. Design mutability can seriously suffer if the product development team cannot influence the development of the technological platform, because, for example, the engineering department works in isolation or because development of the technological platform is outsourced. In these situations the product development team is often not involved in setting requirements for the platform, and because late stage changes require considerable investments these are often not executed.

> **"That product was built on predecessor models, so you start from a legacy. That's like carved in stone, and any changes to the legacy are difficult." (UI designer)**

Do not outsource the UI

In situations where the development team has little control over the development of the technological platform, it should at least retain ownership of the user interface. A technological platform in which the user interface is integrated, and which thus forces the development team to completely rely on a third-party supplier for changes, is a barrier for design mutability. In outsourcing strategies it is usually not recommended to outsource core business activities or strategic components (Jiao et al., 2007), and companies that aim to make usable products should consider the UI a strategic component.

References

> Jiao, J., T. Simpson and Z. Siddique (2007) "Product family design and platform-based product development: a state-of-the-art review." Journal of Intelligent Manufacturing 18 (1): 5-29.

Don't innovate the UI; think generations and families

Because

- User interfaces take years and generations to optimize
- Time pressure too high to design from scratch for every product
- UI paradigms capture what's good, transfer knowledge

Requires

- User interface paradigm (suitable for a product category)
- Design freedom to implement a UI paradigm: control over the UI
- Cross-range and between-generation consistency
- Continuous improvement of UI paradigm

A UI from scratch is unfeasible

In the electronic consumer products sector the speed of product development is so high and the product portfolios are so large that it is impossible to develop the user interface for each product from scratch.

UI innovation = high risk

Secondly, as usability can be influenced by a large number of product properties, ranging from the high-level (such as the lack of a function) to the minute (a button label that is hard to interpret), introducing a new function, content, interface or an entirely new product increases the risk of poor usability. Often user interfaces take many years and generations of products to optimize (Buxton, 2007, p. 56-57) and it is preferable by far to improve them in evolutionary fashion. Innovating a product or a UI, that is making changes to them that you have no previous experience with (e.g., in other products)

Photo courtesy of Nokia

decreases a development team's knowledge of the usability issues in their product. The value and applicability of the knowledge gained about the usability of the predecessor product, through user testing and after sales feedback, is dramatically reduced if a new design is made.

> **"It would be way too much work to develop a UI for each new product. We have a number of UI platforms. It takes time to develop a new UI carefully."** (Interaction designer)

UI paradigm: easier to develop

To prevent having to make a user interface design from scratch for every product, using a shared UI paradigm as the basis for the UIs of individual products is an appropriate solution, especially if your company has a considerable portfolio of fairly similar products. A UI paradigm is a platform-based approach (Jiao et al., 2007) to the development of user interfaces, which allows a company to quickly develop user interfaces for individual products, and use the learnings from the user test of individual products for the improvement of the UI paradigm (Lindholm et al., 2003).

Cross-product consistency

Additionally, as a consequence of basing each product's UI on a shared UI paradigm, users will encounter similar UIs on the different products of a company. This makes it easier for them to learn how to use a product, which in time may become an argument for repeat sales, as it was for a while for Nokia phones ("All Nokias work the same way...").

Conditions for a UI paradigm

However, to be able to apply a UI paradigm, there are a number of conditions. First of all, the UI paradigm must be suitable for the product category to which it is to be applied. Don't try to fit the same UI paradigm to all your products if these range from mobile phones to high-end televisions. Secondly, to be able to base individual UIs on a UI paradigm, within and between-generation consistency of products is needed. Within-generation consistency means that the products within a product line of one year are similar, so the same UI can be applied to the different products in the range. Between-generation consistency means that the product lines don't differ too much from year to year, which allows the learnings from one generation to be used for the improvement of the next, and the same UI paradigm to be used over a number of generations.

Innovate (only) when you have to

Sometimes you should innovate the UI. Because your product simply has a poor UI or you can see that due to changes in your product category the current UI (paradigm) is outdated. In those cases, innovate, but then with your full weight behind it. Only innovate when you have to, and when you have to, make it count.

References

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Project

Don't prescribe methods for user-centred design

Illustration: Michael Stoll @ Flickr

Because

Prescribing methods may

- **lead to inappropriate methods being applied**
- **lead to a check-box mentality**
- **cause teams to look for workarounds**

Requires

- **Development team with knowledge of methods for user-centred design**
- **Development team that prioritizes usability**
- **Product development structure that facilitates the integration of user involvement**
- **Exchange of knowledge about and experiences with user-centred design method**

The danger of a check-box mentality

Prescribing what methods for user-centred design a team should use in the development process can ensure user involvement. However, it may also lead to a situation where a team does not apply the right method but the prescribed method. Or to a check-box mentality: instead of actually being interested in the results of user involvement, a development team may simply conduct a step because the official process prescribes it and they can't pass a milestone without having executed that step.

That, not which

The product development process should indicate that user involvement is desired or required, however, which method for user-centred design is appropriate to apply should be left up to the development team. They have most knowledge about the assignment, resources and team skills, and thus are the best judge of what methods can

and should be used. This way of working does require a thoroughly user-centred attitude within the product development group, a willingness to make usable products.

> **"As an agency we try to provide the test setup that will help our client best. And that may mean applying methods we are not experienced with or that are not routine. And then we try to organize that."** (Human-centred design consultant)

Don't push methods, get the team to pull
Instead of pushing teams to conduct user involvement by prescribing methods for user-centred design, create a 'pull': in a company with a sufficiently user-centred culture product development teams are likely to start looking for possible ways to conduct user involvement. This does require thorough knowledge of user-centred design methods.

Prescription ends process innovation
An important advantage of not prescribing specific methods is that you are fostering grass-roots process innovation: because teams can explore, test and share new methods, the user-centred design proficiency of your company as a whole can evolve and improve over time. Whereas when you prescribe a process, all improvements have to be conceived, tested and sanctioned by the 'methodology people'. That's a lot of weight to carry.

Align the organization with user needs

Because

- Products keep changing (integration required)
- Product usability > interface usability
- System usability > product usability

Requires

- Ownership of the product's ecosystem
- Development groups within company cooperating
- High-level visionary
- Product development groups in one location
- Budget
- Guts

Electronic consumer products are networked
Electronic consumer products are becoming more and more networked. Many of the most serious usability problems are caused by the system as a whole, not by user interfaces of the individual products. Ensure that your product works well in the ecosystem (Buxton, 2007, p.50) in which it will be embedded. Either by creating industry-wide standards (hard to achieve, not always upheld) or by making sure your company owns all components of a product's ecosystem (costly). Owning the ecosystem ensures you can coordinate the application of user experience design guidelines, and deal with connectivity and interoperability issues.

Limited collaboration between product groups
But even if your company as a whole develops all components of the ecosystem, there is no guarantee that development will be in a coordinated fashion, as these components

are often developed in separate development groups, between which collaboration can be limited.

> **"To be honest, to provide a proper user experience, we should have integrated their product with our own. Or ours with theirs. But they were in a different division."** (Product manager)

Cutting through the silos

Companies should be willing to cut through the silos of their organizations in order to create a great product experience. Product development companies' raison d'être is to develop products. In the end the organization should be designed to create successful products, products should not be designed to fit the existing organization. Alignment and collaboration between development groups requires involvement of upper management. And it is facilitated considerably if all development groups are in one single location, as for true collaboration there is no alternative to meeting face-to-face on a day-to-day basis.

Company

Upper management that gets and prioritizes usability

Because

- Product development = compromising and upper management decides about resources
- Upper management can ensure development groups within a company cooperate
- Upper management influences company culture

Requires

Upper management that:

- understands its products
- understands (and prioritizes) usability
- is involved in or informed about product development

Photo: Google

Power brokers

One of the most influential factors to determine whether a company can successfully deal with usability is upper management (development group managers as well as corporate managers). First of all, managers decide about the resources that are assigned to development projects and groups. Secondly, upper management is the only actor that can ensure different product development groups cooperating on a product or product family. Finally, the attitude of upper management can seriously impact company culture. If management is seen to prioritize usability, product development teams are more likely to do so as well.

Upper management that understands products

For upper management to prioritize goals (product quality, usability) over resources (time, money, staff) they will need to understand their own products. If it is not clear to them

how a product works, they will not understand how certain design decisions impact product quality. And thus they will prioritize concrete, short-term effects (i.e., resources, process) over ungraspable, long-term ones (i.e., product quality). Also, to have an effect on the individual product development projects, upper management will need to be involved in, or at least have knowledge about, product development projects.

> **"Usability is very important for our products. We have a board member who's always saying: 'If my wife can't use it, it's not good enough.'"** (Product manager)

Appoint a creative director

In the movie industry, apart from the producers, who ensure that making the film runs smoothly from a financial and project management point of view, there usually is a creative director, who is ultimately responsible for the quality of the creative work. If upper management in a company does not understand its own products, appoint a creative director, who balances the process and resource-oriented view of other managers. Bear in mind that the word 'creative' in creative director refers to the process of creation, not to being responsible for thinking outside the box.

Establish a user-centred company culture

Billboard by Dutch telecom provider Tele2 Business reading: 'Service is not a department but a mentality.'

Because

- Product development = compromising
- User-centred product development requires a significant investment

Requires

- Knowing if and why usability is important
- Team members seeing the results of their work
- Customer satisfaction as performance indicator
- Viable product proposition and stable technical platform
- Upper management that gets and prioritizes usability
- Usability (perceived as) part of a company's brand promise

Positive attitude towards usability

Product development means compromising. Development teams have to weigh product requirements and then figure out how to realize as much of them as possible with the available resources. To create usable products, usability should be prioritized in at least some of the decisions. This can be positively influenced by a user-centred attitude among product developers, which in turn can be fostered by a user-centred company culture. In addition, running a user-centred product development process can require a significant investment of resources (time, people, money), which is unlikely to happen in a company that does not consider usability important.

Enabling a user-centred company culture

A user-centred company culture is enabled by product developers understanding and appreciating usability (see card #1), seeing the

Photo: Bram Koster

results of their work in user tests and after sales feedback (see card #14), and having customer satisfaction (which is impacted by usability) as a key performance indicator. A user-centred company culture is also fostered by upper management prioritizing usability (see card #21) and if product developers perceive usability to be a part of their company's brand promise. As such, a company's brand position does not only communicate to potential customers what to expect, but also to product development teams what promise they have to live up to.

"You should really get your people to care about usability, and that requires making a strong case about why usability is important. It should not be something that comes up now and then; it should really be at the core." (Usability specialist)

Prioritization of usability

As usability is a long-term non-quantifiable product quality (Guldbrandsen, 2006), it is unlikely to be prioritized if more short-term, quantifiable product properties, such as system stability, production quality, aesthetics and functionality are not yet at a sufficient level. If the short-term quantifiable product properties are at a certain minimum - satisfactory - level, that increases the chance of usability becoming a priority.

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Market

Merge 'buy' and 'try' in retail

Because
> Usability must be experienced

Requires
> Usable products
> Fully functional products at sales points
> Customers can access products freely
> Knowledgeable sales staff
> Optional: product appearance that reflects a product's usability

Experience usability before purchase
Because consumers can have a hard time judging a product's usability before purchase usability is usually considered a long-term benefit: initially it may not increase sales numbers, but it can increase customer satisfaction (Reichheld, 2003), thus brand loyalty, and thus may lead to repeat sales. But sales numbers could benefit directly from products being usable. If you believe your products really are usable, you might want to make that usability visible to buyers. One strategy can be to enable buyers to experience the products before and during purchase; what Lincoln and Thomassen (2007) refer to as 'merging buying and trying'.

Fully functional products on display
This requires products to be fully functional and accessible to users when on display at sales points, including other components of the ecosystem being hooked up (see card #1). What also helps is sales staff that is actually knowledgeable about the products they are selling, and that can guide potential buyers while trying a product.

Appearance can give hints about usability
A second - but somewhat risky - strategy is to

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give potential buyers a hint about the usability of your products by giving these an appearance that conveys their level of usability (van Kuijk et al., 2009): align expected usability with actual usability. But then you'd better be sure you live up to what you promise, because if you set expectations too high, it becomes harder to satisfy users.

"There are what we call self-select environments, where (...) you pick the box up and you take it to the cash register. (....) But in many of the more advanced retail environments there are people that who actually go through a service cycle with you, who will demonstrate the product." (Product marketing manager)

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Control your sales channels

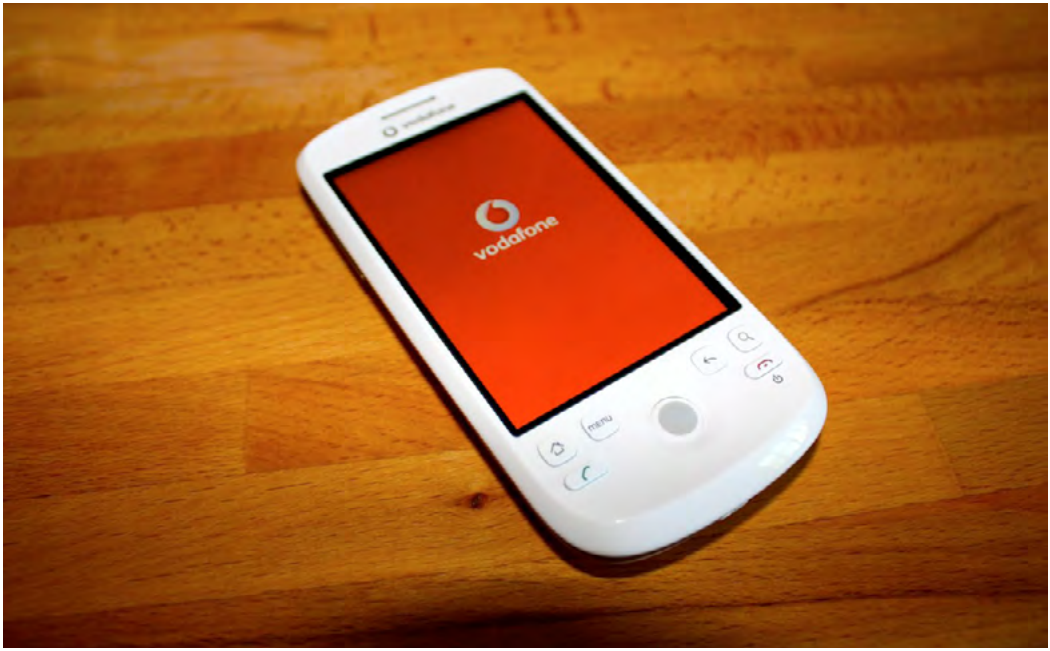

Photo: Jon Hume @ Flickr

Because

- Third-party sales channels may demand non-user-centred requirements
- Provides control over how products are presented

Requires

- Setting up own sales channels
- Owning a product that third-party resellers need to have in their store

Sales channels have their own preferences

Companies that in the end sell a product development group's products to consumers, such as retailers and service providers, often have their own ideas about what a product should do, based on their own interests. For example, a telecom service provider makes money by users making calls and would not be terribly delighted by a phone with a built-in voicemail box. And as in electronic consumer products retail functionality often is a primary sales argument, retailers may demand a large amount of functions (see card #11) including functions that, from an interaction and user experience perspective, are unnecessary.

Control your sales channels

One strategy for a product development company to become less dependent on third-party resellers is to set up its own retail, in the form of retail stores, shop-in-shop concepts, and online shops. This also enables more control over the way products are presented (see card #23). Secondly, though it is hard to implement this as a pro-active strategy, if a product development company has an extremely well-known product, retailers will need to have this product in their stores, as buyers will come in and ask for that

specific product, and otherwise they will go somewhere else to get it. This can enable a product development company more freedom to make a product that they believe offers the best user experience.

"Network operators are very interested to have things in phones that force people to use the network to download something onto the handset. So for example, a network operator may prefer a handset to ONLY support music that is downloaded. (....) Often operators will ask us to limit certain features and functions in a handset to force the consumer to use network based services."
(Product marketing manager)

Market

Don't explicitly advertise usability

Because

- > 'Easy to use' products can stigmatize buyers
- > Usability is not an important purchase consideration
- > Advertising usability raises expectations

Requires

- > Having other purchase arguments besides usability
- > Buyers experiencing the product in-store
- > Marketing message that implies usability and highlights the benefits
- > Marketing message that blames products for being unusable, not people for not understanding them

Advertising usability is no guarantee for success
There have been a considerable number of electronic consumer products marketed specifically 'as easy to use', such as for example the Philips Easy Line and Vodafone Simply. They never seem to last or achieve mainstream success. In terms of the Kano-model of satisfaction (Matzler and Hinterhuber, 1998), usability is a must-be requirement; people expect a product to be usable. Advertising a product as usable is like saying: "Hey people, we did NOT fail this time."

Usability is not a purchase consideration
It is doubtful whether usability should be used as an explicit sales argument because usability is usually not an important purchase consideration for buyers. Long-term satisfier: yes, initial purchase consideration: no. In addition, by advertising a product's usability as a unique selling point you run the risk of stigmatizing its

buyers, and you are raising expectations with regard to usability. Usability is about customer satisfaction, and customer satisfaction is about expectations. If these expectations are too high, it is hard to outperform them. Instead, sell a product based on qualities that can be perceived already in the shop, such as functionality, aesthetics and performance.

> **"People always talk about ease of use, but I think it's more... I don't think it gets into the play in the buying process. It's more of a dissatisfier, I guess..."** (Market intelligence manager)

Except when usability has led to frustration
There's one case in which usability might be used as an explicit sales argument: if a wide audience is very conscious of a usability problem with a certain product category. And if this issue is top of mind as they are walking into the store. Apple started to explicitly highlight the usability of its Macintosh computers in its Switch campaign. But only with its Get a Mac campaign, when people's frustration about Windows Vista peaked, did it really seem to strike a chord. TomTom assessed that the frustration of not being able to find your destination resonated with people, even before using the product, so it adopted the slogan: 'Find your way the easy way'. But using a TomTom product does not send the message that you as a user are technology-averse.

You can take further advantage of people already being frustrated by the usability of a certain product (category) if you allow buyers to experience the - superior - usability of your products in the store (see card #24).

Simple, not easy
Even if usability is a purchase consideration among buyers, I would shy away from explicitly billing a product as 'easy to use' or 'ergonomically designed'. 'Easy to use' basically implies: "Hey, even you - being a complete dummy - could figure this out!" and 'Ergonomically designed' communicates that there's really nothing else to this product than correct physical dimensions.

If you do want to highlight usability in a marketing message, I would position a product as 'making sense' or as 'it simply works'. And highlight the benefits of the product being usable: Fun! Results! As the Flip Video is advertised: "As simple as it is fun." Note that it reads simple, not easy.

References

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