



Innovation and Usability

User-centered Innovation

Andreas Bleiker
Interactive Dialog Systems (IDS)
C-LAB, Paderborn



About us

C-LAB



- Innovation Laboratory
 - Co-funded R&D projects (long-term perspective)
 - Commercial R&D projects (medium- and short-term)

More about C-LAB:
<http://c-lab.de/>



What this Presentation is About

What are user-driven innovations?

What role does usability play for the commercial success of an innovation?



What is Innovation?



Innovations are new approaches that address specific user needs
(New products, services, processes or new combinations or applications of existing solutions)



What is Innovation?



Not all needs are shared by large parts of the population.
(Target group is not always the population → success in niches)

Source: <http://www.flickr.com/photos/coisanakka/3056147095/>



User-Driven Innovation



«Lead Users»: Very visible in the domain of Sport
(snow boards, mountain bikes, sport nutrition etc.)

Source: <http://www.zeroprestige.org>



User-Driven Innovation



Source: <http://www.mobility-canopies.co.uk>

In many other domains such as medicine, accessibility, mobility or computer software (open source), **necessity is the mother of invention.**

© 2010 Siemens AG und Universität Paderborn

7

Webmontag / 26. April 2010; Andreas Bleiker



User-Driven Innovation

Back around 1990, Wim Ouboter quit his job at a Swiss Bank.

He then realized that his favourite butcher had become too far away to walk, yet not far away enough to take the car or bike out of the garage.

So he built his own little vehicle...



Ten years later, he produced 80.000 micro scooters - a day.

© 2010 Siemens AG und Universität Paderborn

8

Webmontag / 26. April 2010; Andreas Bleiker

User-Driven Innovation

Michael Näf encountered considerable coordination problems when trying to arrange for a dinner with his friends.

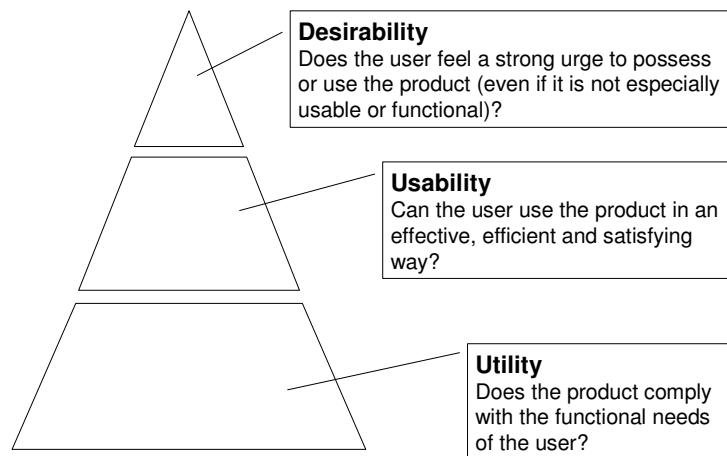
So, one day back in 2003, he sat down and set up a little web service.

		Dezember 2008																				
		Fr	Sa	So	Mo	Di	Mi	Do	Fr	Sa	So	Fr	Sa	So	Mo	Di	Mi	Do	Fr	Sa	So	
		12	13	14	15	16	17	18	19	20	21	12	13	14	15	16	17	18	19	20	21	
Andreas		OK	OK	OK					OK	OK	OK											
Melanie		?	?							OK	?	?										
Maria K.		OK	?	?				OK	OK	OK	?	?										
markus					OK				OK	OK	OK	OK										
Karsten				OK																OK		
Andreas Bleiker																						
Anzahl		1	1	2	1	0	1	3	4	2	3											

Doodle®

As of today, more than half a million people a month use his service doodle.ch

Quality Aspects of a Product

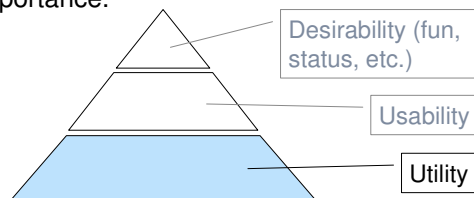


What role does Usability play in Innovation?

"Lead Users":

1. have needs that "normal" users have not yet discovered
2. have high personal and direct benefits from a new functionality

- Strong intrinsic motivation to use a solution even if it is not very usable.
- Utility (functionality) comes first.
- Usability (for third parties) is of secondary (or no) importance.



What role does Usability play in Innovation?



Source: <http://nihonsekal.ru/images/shindogu/5.jpg>

For the majority of future users, pure utility is not everything.





What role does Usability play in Innovation?



Other users with the same needs must recognize a functional solution and be convinced that they benefit from it, too.

Source: <http://www.mydigitalife.info/2007/05/19/5-outrageous-inventions/de/>

Webmontag / 26. April 2010; Andreas Bleiker

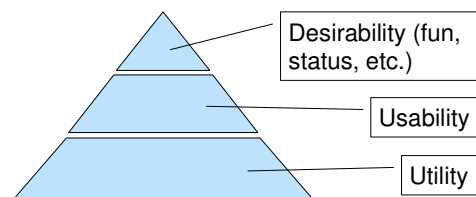


What role does Usability play in Innovation?

Companies

1. have an indirect motivation for innovation (sell products to as many customers as possible)
2. often fail to correctly anticipate the exact future needs of the market

→ For a company, usability and user experience of its innovations are (apart from the utility) crucial for success



© 2010 Siemens AG und Universität Paderborn

14

Webmontag / 26. April 2010; Andreas Bleiker



How to ensure Usability in Innovation Process?

In the early phases of the innovation process, the scope is to discover potential benefits of new concepts and to decide on the most promising options to proceed.

- Use methods that produce constructive artefacts
 - Ethnographical Studies / Field research / Requirement Analysis
 - Persona and Scenarios of Usage
 - Co-Design with users (Lead Users, Lead User Workshops)



How to ensure Usability in Innovation Process?

In the early phases of the innovation process...

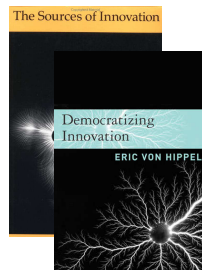
- be aware of standard usability-testing
 - Tests generally focus on failures and shortcomings in order to improve "firm" concepts
 - Tests rarely deliver input for revolutionary new ideas.
 - Unfamiliar (yet promising and potentially revolutionary) solutions often fail in direct comparison with established concepts
- At later stages of development (when a concept has to be improved), testing is often the method of choice.



Read more

Saul Greenberg, Bill Buxton. *Usability Evaluation Considered Harmful*. In ACM CHI'08 proceedings, p.111-20.

Christensen, C. *The Innovator's Dilemma*. Harper Business School Press, (1997).



Prof. Eric von Hippel

Head of the Innovation and Entrepreneurship Group, MIT Sloan School of Management

Download his books for free:
<http://web.mit.edu/evhippel/www/index.html>



Besten Dank für die Aufmerksamkeit

Andreas Bleiker
 Usability-Consultant

Andreas.Bleiker@c-lab.de (+49 5251 606137)
<http://www.c-lab.de/usability>

Über das C-LAB:

- Forschungskollaboration zwischen der Uni Paderborn und Siemens IT Solutions & Services (SIS)
- Innovationswerkstatt von Siemens SIS und Uni Paderborn



Usability-Dienstleistungen des C-Lab

Methodenkompetenz

- Focus-Groups
- Usability-Tests
- Expertengutachten
- Nutzerstudien und Bedarfsanalysen
- Papier- und Klickprototypen für einzelne Interaktionsprozesse, Websites, RIAs und Software
- ...

Beratung & Prozessbetreuung

- Workshops & Schulungen
- GAP-Analyse
- Prozesseinführung



Der User-Centered Designprozess

Anforderungsanalyse

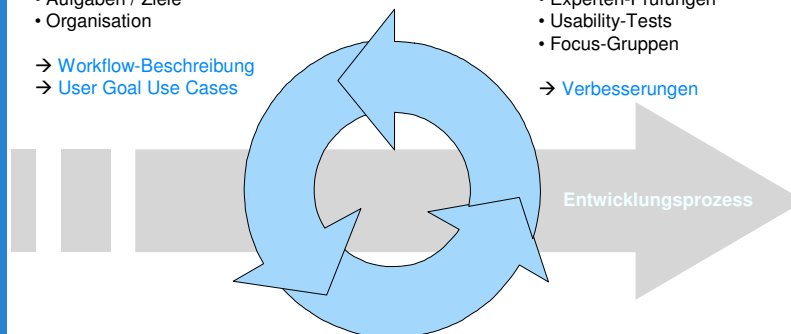
- Benutzer (-gruppen)
- Aufgaben / Ziele
- Organisation

→ Workflow-Beschreibung
→ User Goal Use Cases

Evaluation

- Walkthroughs
- Experten-Prüfungen
- Usability-Tests
- Focus-Gruppen

→ Verbesserungen



Entwurf und Gestaltung

- Interaktionskonzepte
- Navigationskonzepte
- Prototyping
- Interface-Design

→ Konzepte / Prototypen