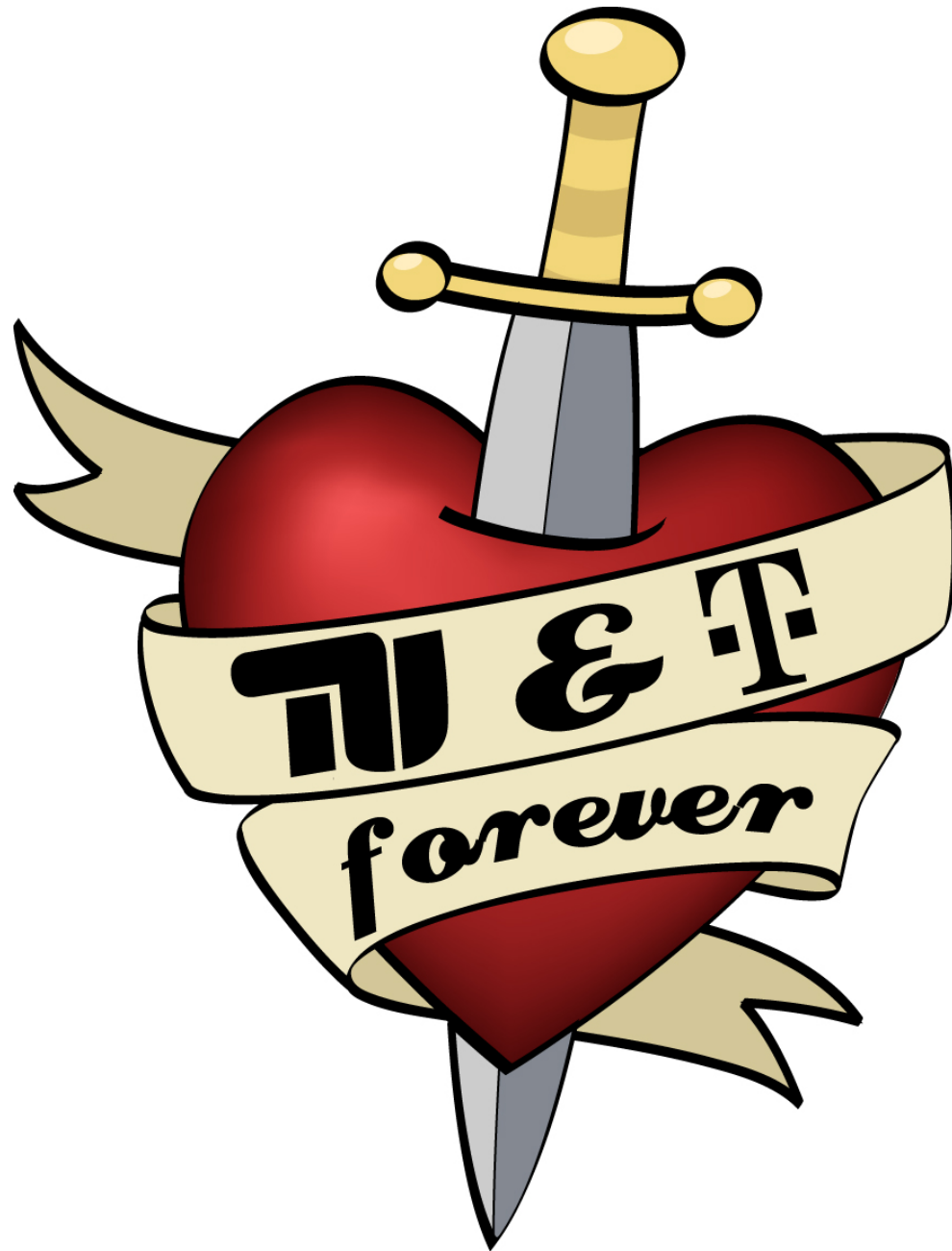


Research rocks!

Design Research as Innovation Driver

Prof. Dr. Gesche Joost

Münchner Kreis, Innovation Beyond Technology, 18.11. 2008

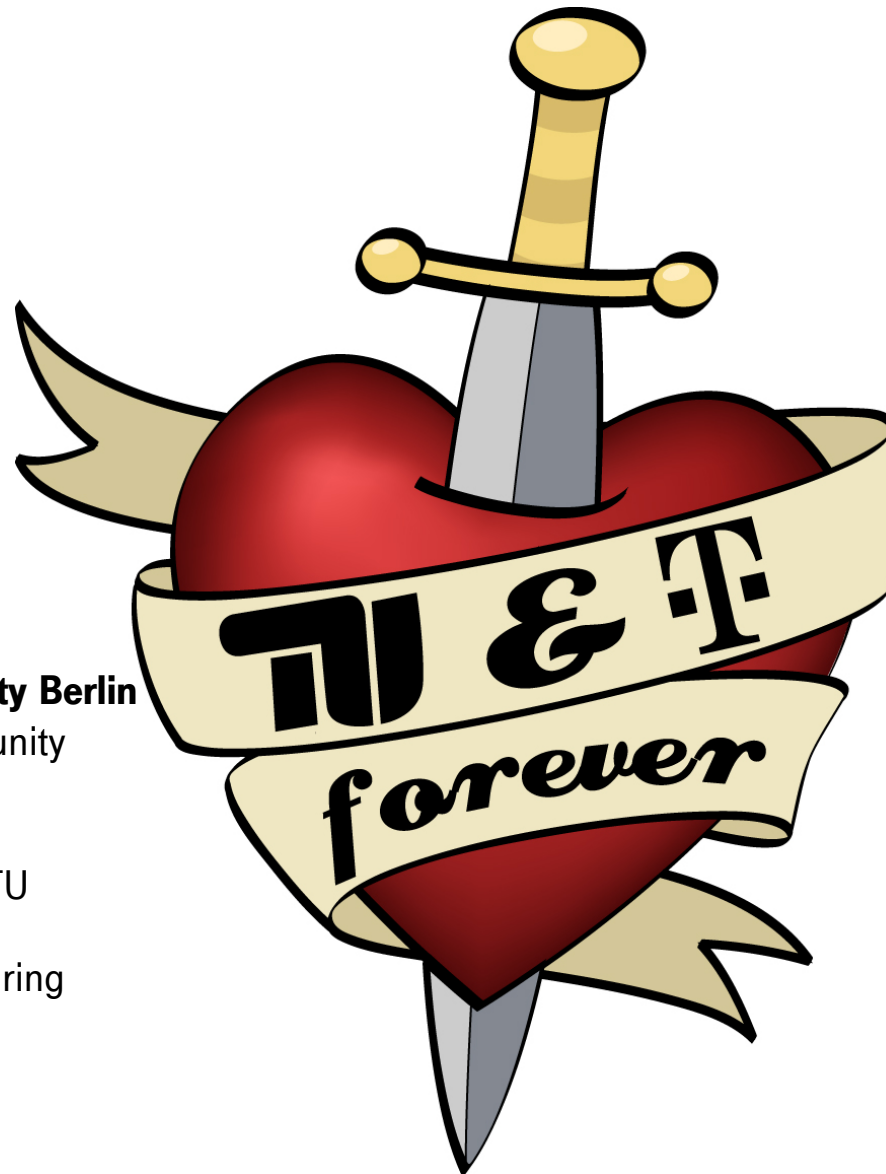


T-Labs are an „An-Institut“ at TU Berlin.



Technical University Berlin

- Scientific community
- Establishment of professorships
- Integration into TU curriculum
- Attraction of aspiring young scientists








Deutsche Telekom AG

- Links to customers and industry
- Funding

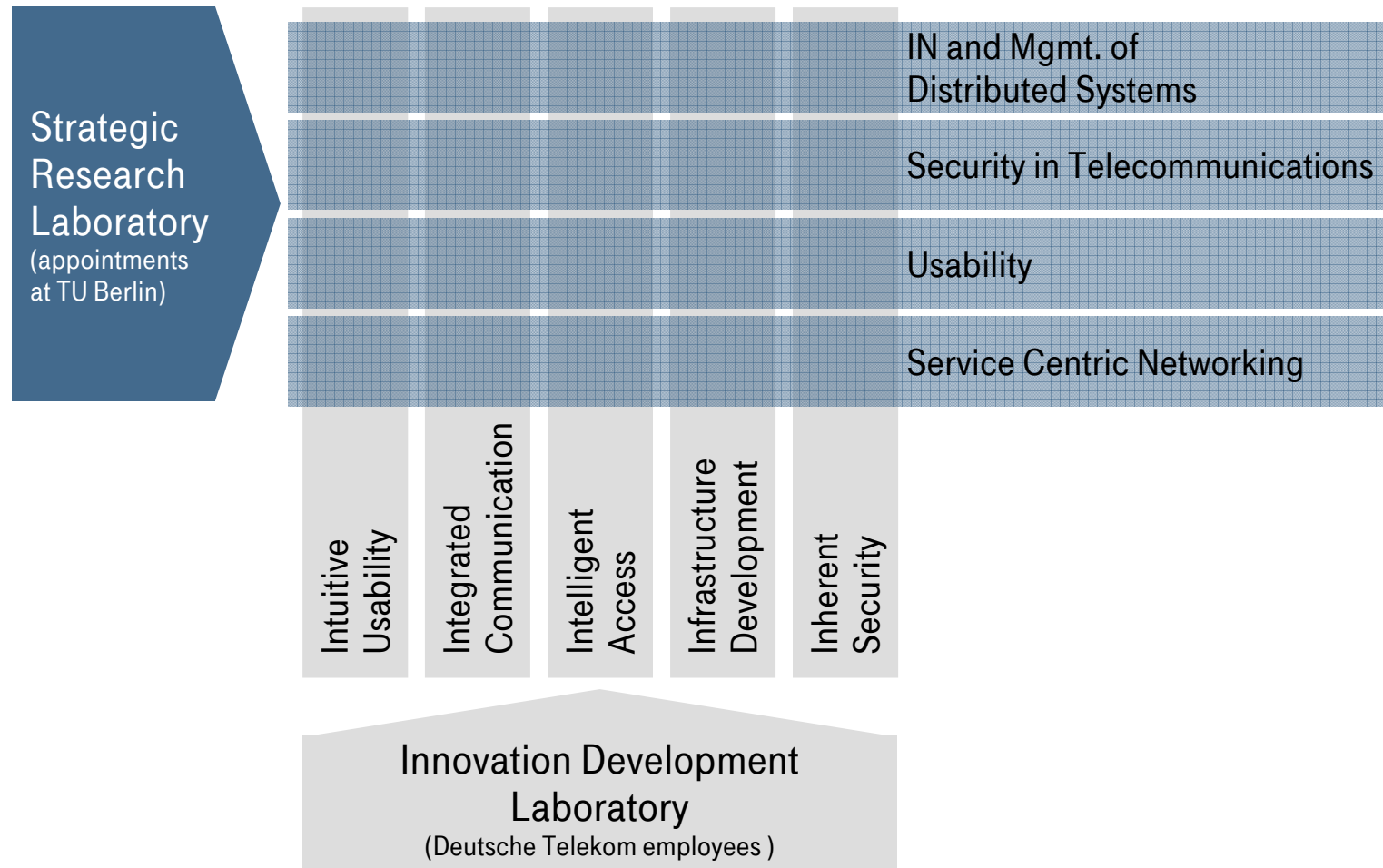
Framework of innovation activities.

Focus fields of innovation.

Focus fields (5i)	ICT spectrum	Technology trends	Innovation guidelines
Integrated Communication	 A hand holding a mobile phone with the word "Service" overlaid.	<ul style="list-style-type: none"> - Addressability of items - Home networks - Meta languages & protocols 	"Everything talks"
Intuitive Usability	 A man in a suit looking at a laptop with the word "User" overlaid.	<ul style="list-style-type: none"> - Automated personalization - Multimodal interface - Sensor technology 	"Simplify your life"
Intelligent Access	 A network switch with blue cables and the word "Delivery" overlaid.	<ul style="list-style-type: none"> - AAA - Service handover - Device adaptation 	"Always best connected"
Infrastructure Development	 A network diagram with the word "Network" overlaid.	<ul style="list-style-type: none"> - Core network - Access network - IT infrastructure 	"High quality at reasonable cost"
Inherent Security	 A metal padlock with the word "Usage" overlaid.	<ul style="list-style-type: none"> - Identification - Trustworthy regions - Network-based security tools 	"Trusted IP networks"

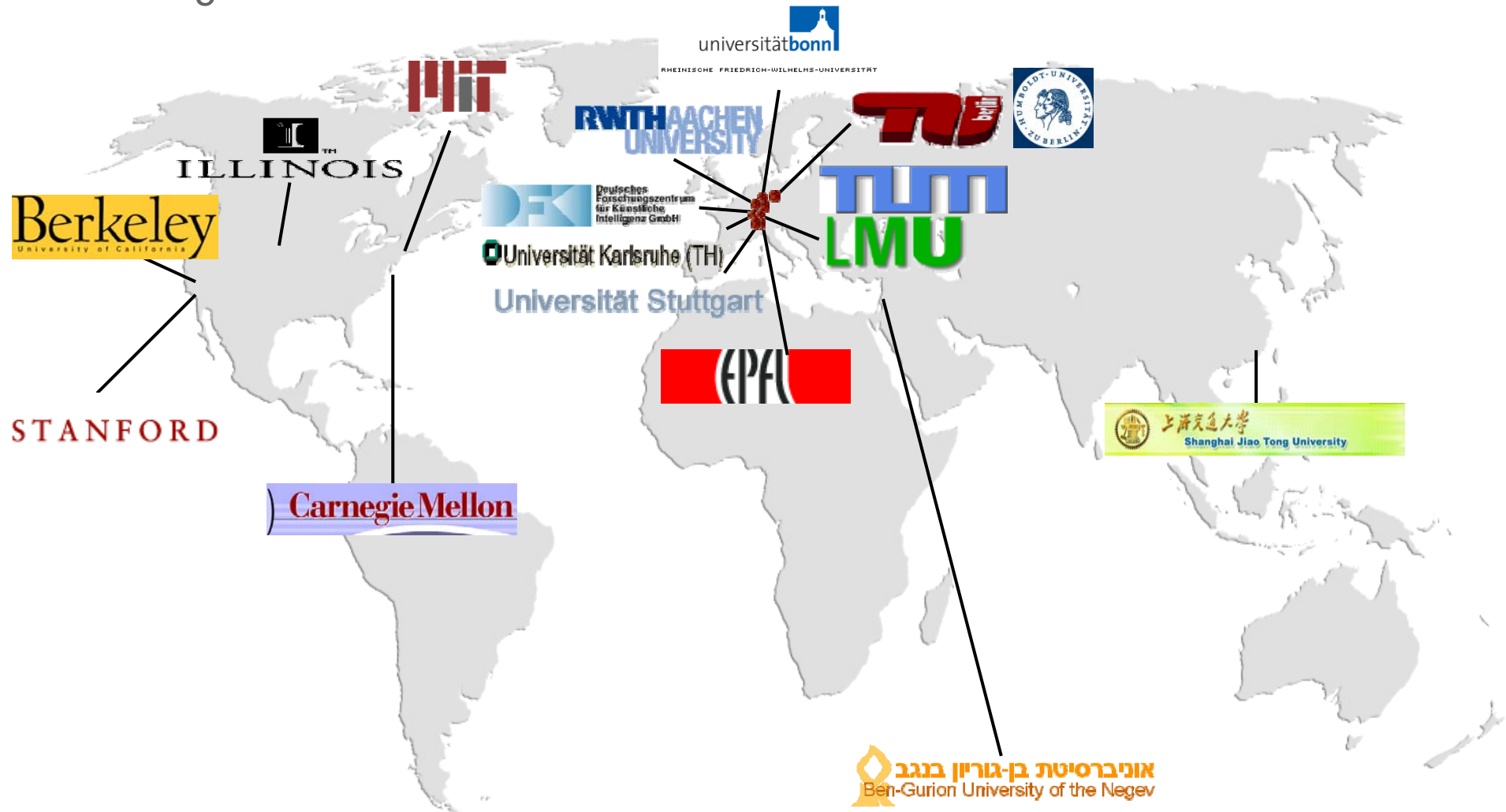
T-Labs - Organisation.

An ideal environment für collaboration among industry and academia.



(Re-)activated international R&D network.

Innovation Development works closely with 17 selected research organizations.



Creation Center.

Methods for Customer Insights and Ideation.

Observation impressions - Getting close to the customer



Observation Methods.



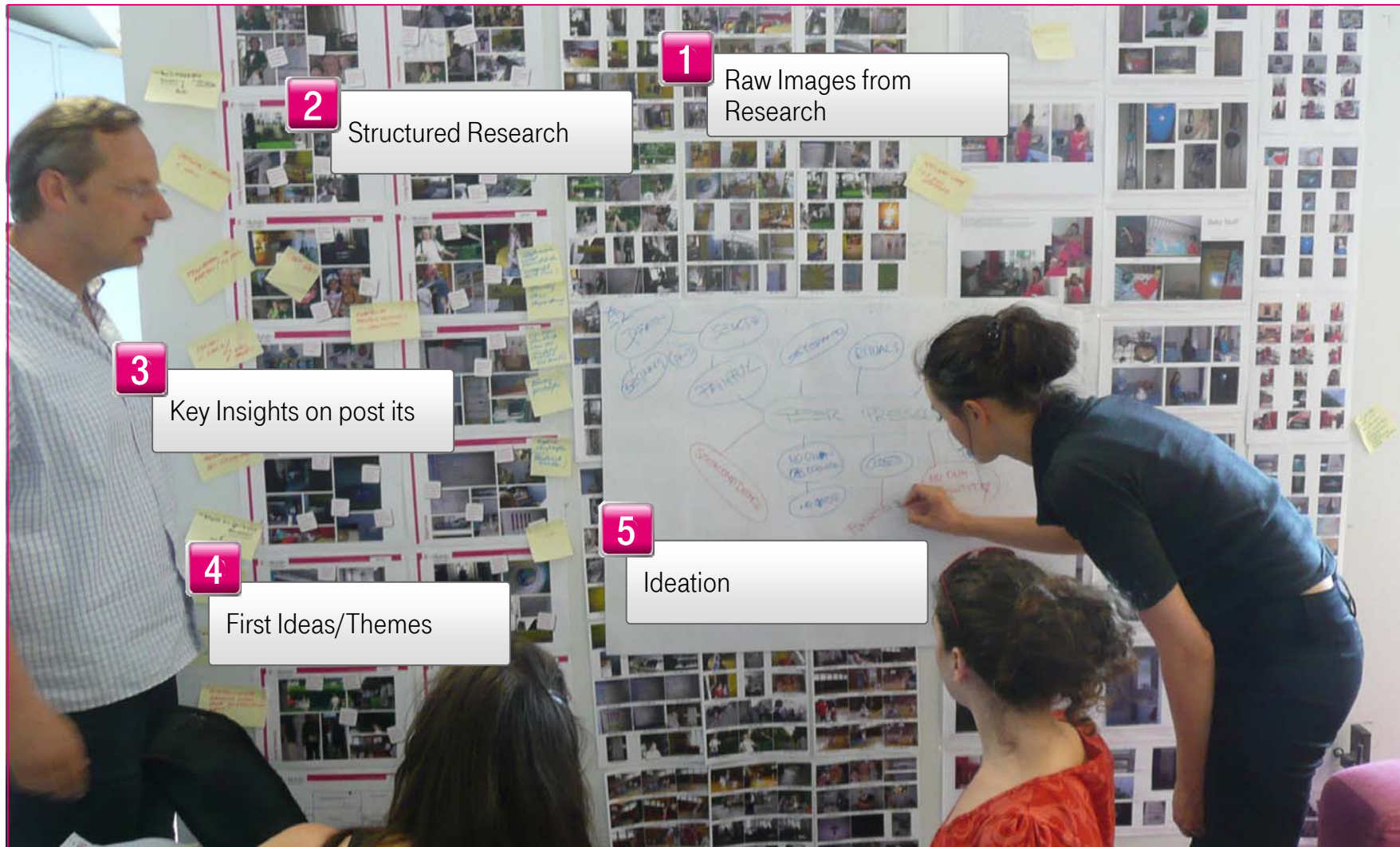
Ideation impressions



Generating over 100 ideas in a day

Clustering key insights

Ideation – Research is the basis

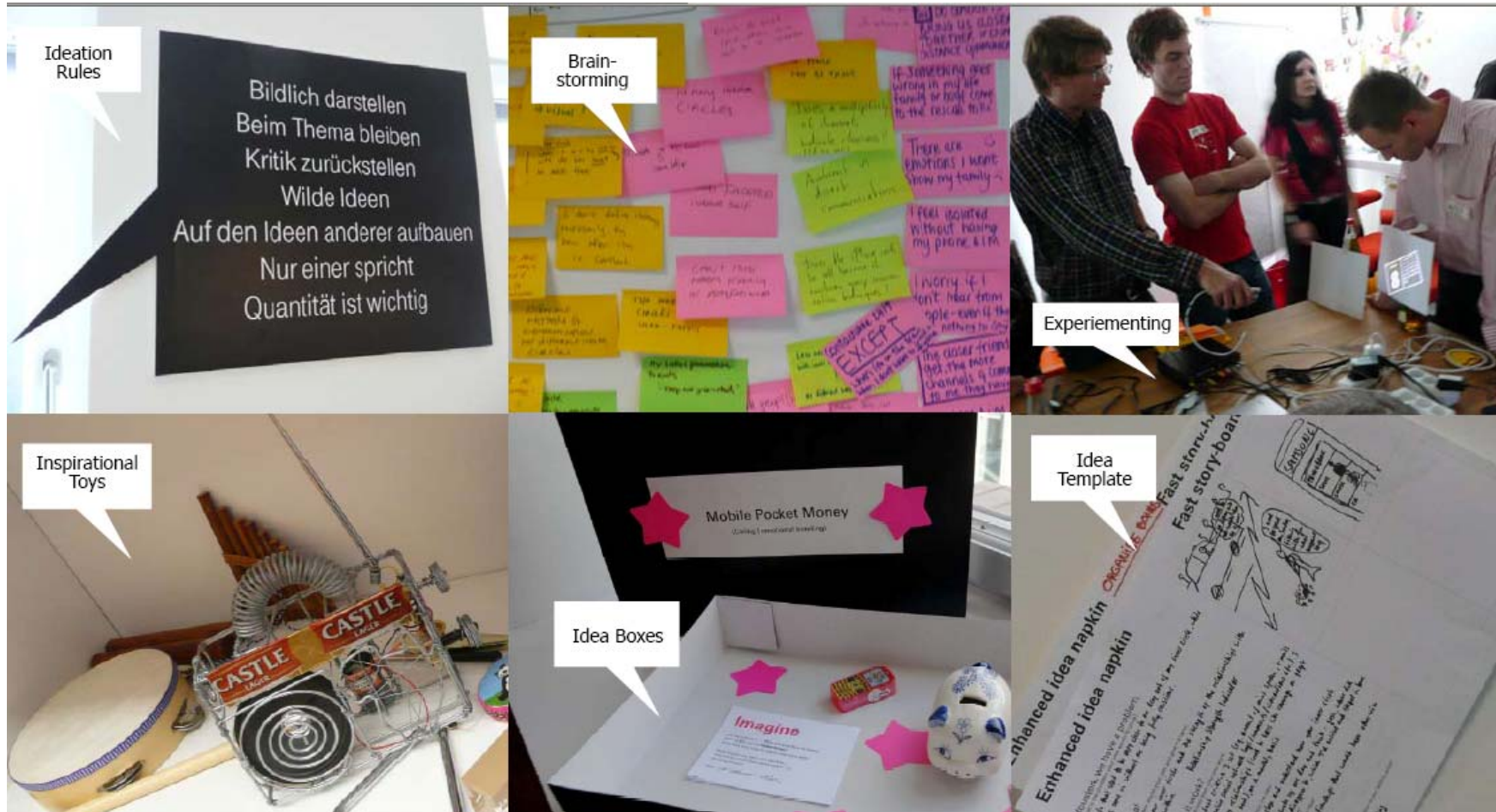


intro

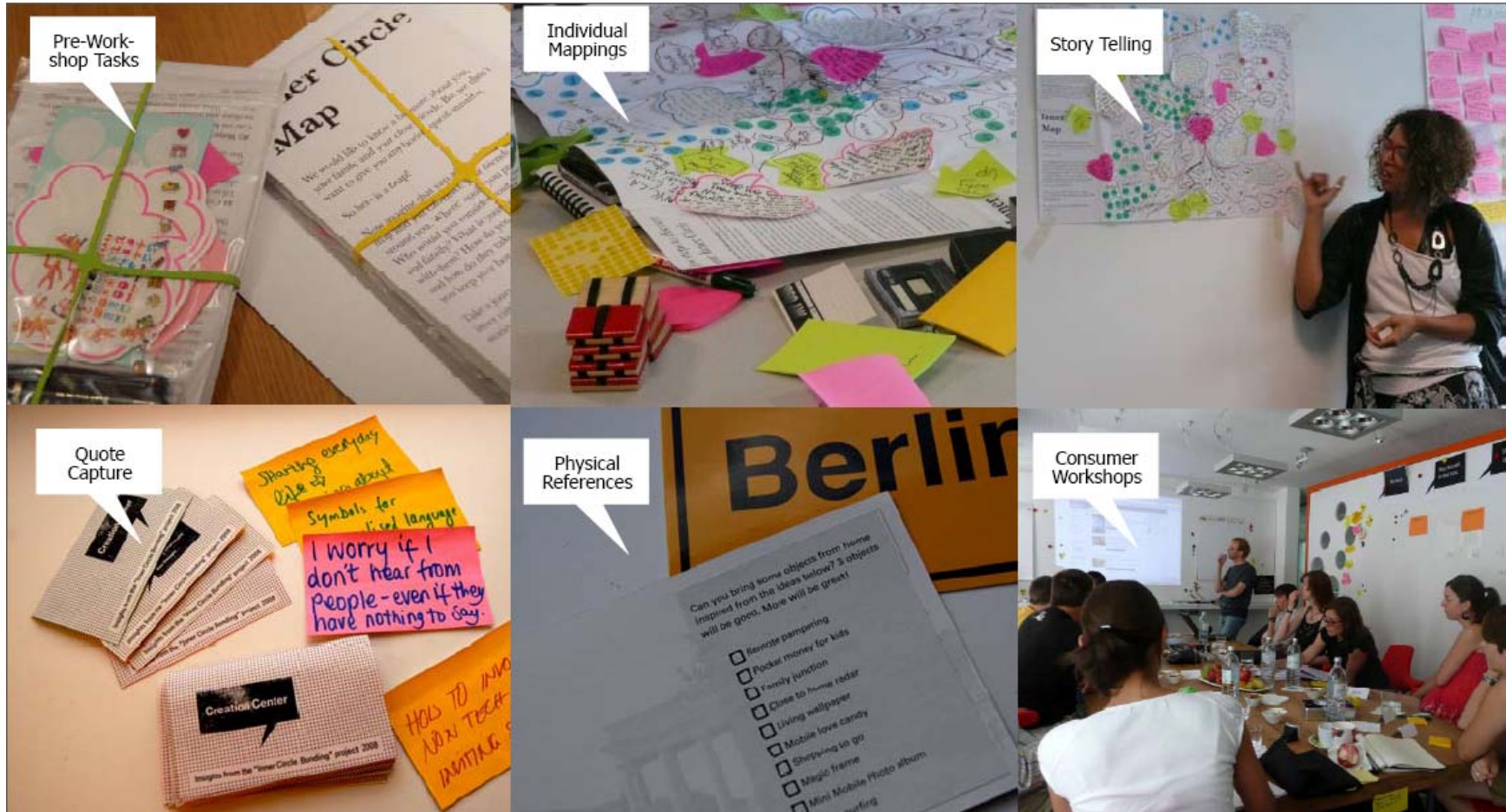
insights

concepts

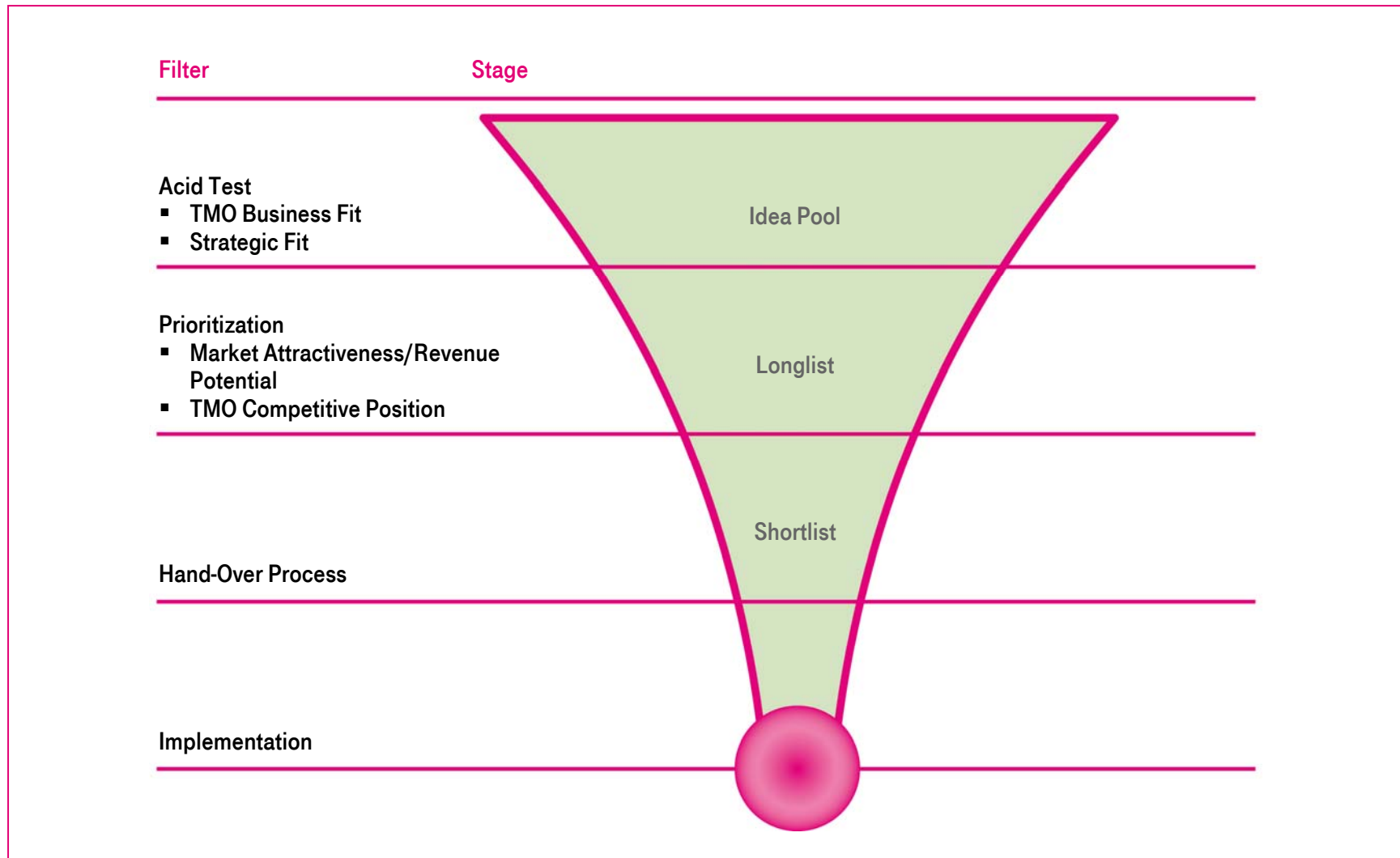
Ideation Process.



Ideation Tools.



Filtering ideas using the innovation funnel



Design Research Lab.

“Soft Factors” in technical driven Research.



Research is
our passion.

■ ■ ■ **T** Deutsche Telekom
Laboratories

Design Research Lab.

Connecting Research & Development at T-Labs.

DR Lab is complementing the technically driven activities in an interdisciplinary approach.

DR Lab has proven to develop relevant research output that is also valid for SBUs (e.g. 50+ dect phone, Woman's Phone, Touch It!, Green IT).

- Started 3 years ago with 1 designer
- Today: 1 Juniorprofessor and team of 7 scientific researchers
- 16 Research Projects running
- Last year:
 - 30 conference papers, 5 journal articles, 3 books
 - 4 patents for new interaction principles with mobile devices
 - 2 product launches (dect phone 50+ and female phone)

Woman's Phone

Motivation of Project Idea.

Shrink it and pink it?



Research Sample.

First Test Group started in January 2008.

- 7 female participants
- Aged between 25 and 35
- All employed
- All with academic education
- All (heavy) users of mobile devices
- All worked with the cultural probes toolkit
- All joined a workshop to build their own mobile device



Variety in different styles and preferences already within this small group! „Pink“ is not enough...

Cultural Probes. Toolkit.

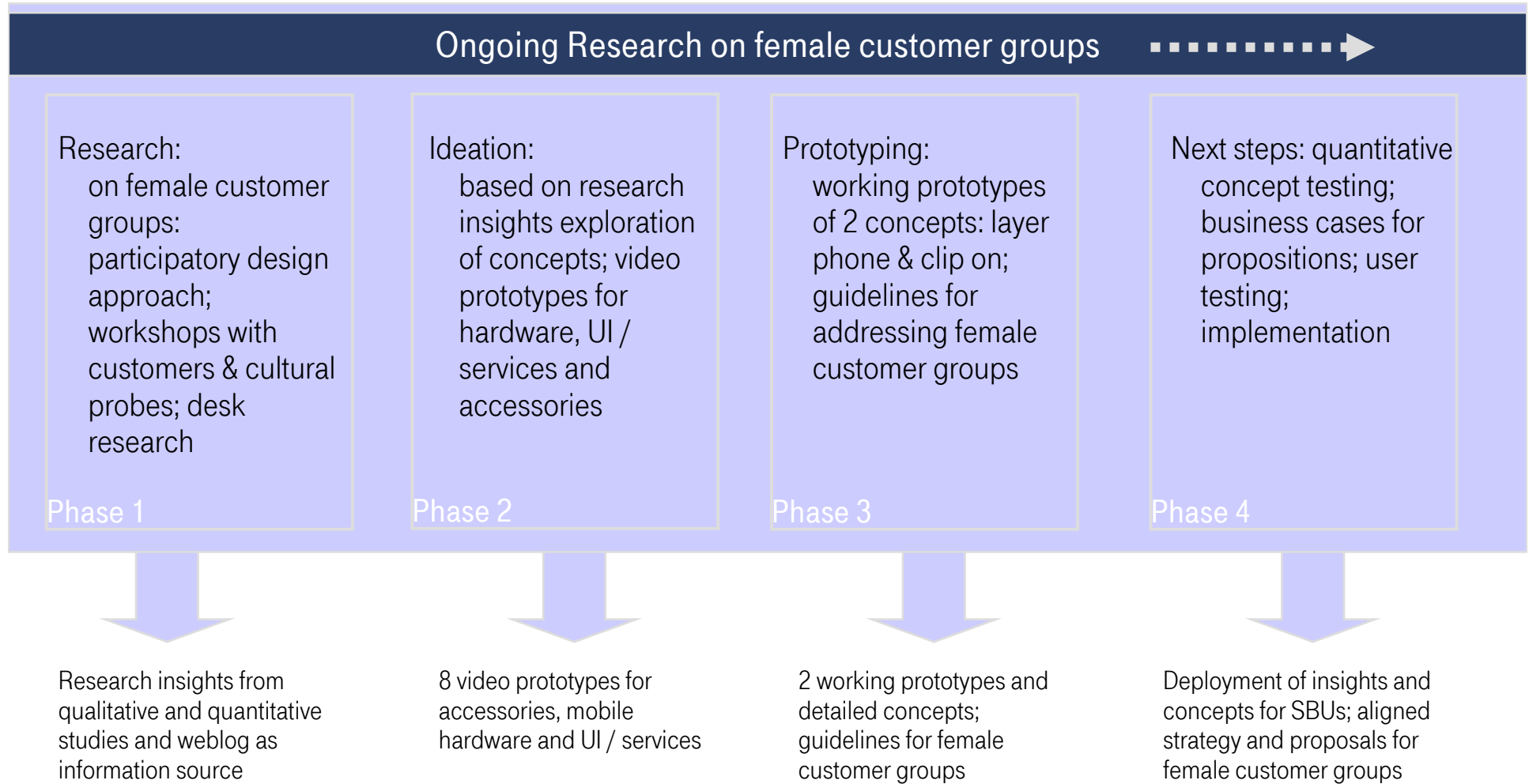


Impressions. Women at work.





Research Process and outcome.



First results.

Insight	Proposition
<p>Women want to see more variety and wider assortment when it comes to form, color, material and multi-sensorial experience.</p>	<p>Provide mobile devices in different colors and materials like: felt, modeling clay, rubber, textile, leather, velvet in glossy colors and metallic look, in light colors like beige, white, in shiny colors like red, orange, pink, yellow</p>
<p>“I’d like to have a phone that I can find in the depths of my bag while it’s still ringing!” „I want to be sure that my phone is set to mute without having to double check.“</p>	<p>Clip on: Wearable alarm for incoming calls; Cancel calls without using your phone; Physical indicator for “silent mode” Vibrating Jewelry: A bracelet with a built-in vibration alarm that lets you mute your phone without missing calls. The moment the strap is disconnected from the phone, the phone is set on mute. The strap is now used as a bracelet. Incoming calls will be communicated through vibration in the bracelet.</p>
<p>“Talking on the phone can inhibit communication within a group, makes others feel isolated.” “All headsets I know are ugly and make people look like cyborgs.”</p>	<p>Clouds: A necklace that makes headsets an attractive gadget and lets friends more easily participate in conversations (based on a bluetooth connection)</p>
<p>„With my phone, my family and friends are always with me, it’s like they are inside of my phone and always in reach. That’s so reassuring.“</p>	<p>Buddy Bracelet: A bracelet that keeps your friends within reach – via small hangers that represent your closest buddies and family. When one of my close friends is calling, “his” or “her” bead starts blinking. I can call my friends by pressing the related bead. I can even call myself, when in an uncomfortable situation (a bad date...).</p>
<p>„In my everyday life I have different roles depending if I am at my job, with my family or with my friends. My phone should adapt to these roles and support me in any of these situations.“</p>	<p>Layer Phone: A modular phone that offers different modes of use, according to conditions, environment and needs. The layer phone consists of three stackable hardware solutions: one for office, one for leisure and one for nights. Each layer has different features and rules e.g. regarding my availability. This could also be designed as a UI solution.</p>

Initial Concepts Woman's Phone

Stills from Video Prototypes



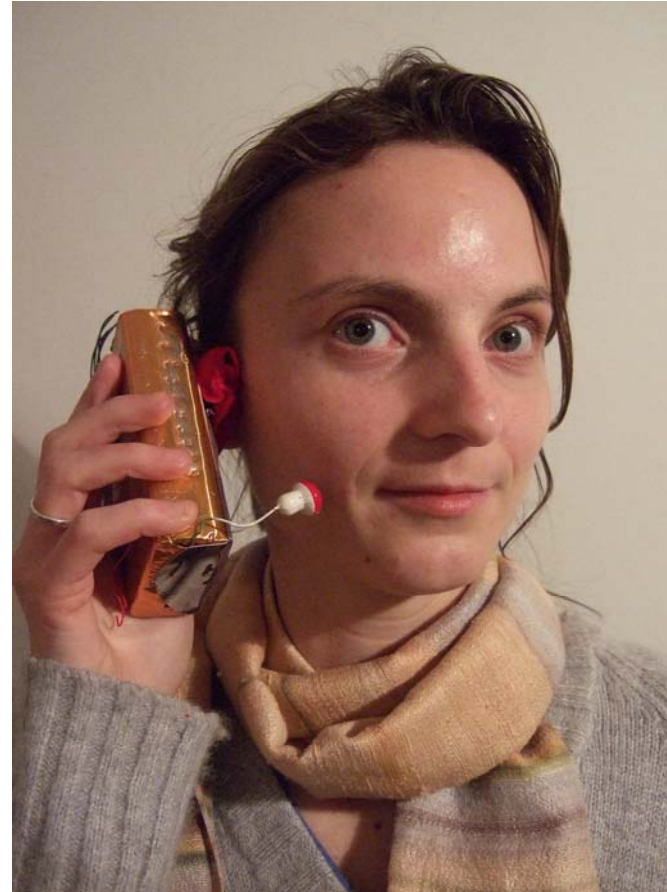
Concept: Share&Shame

Insights

„There' s a cute guy at the disco, but I don' t want to give him my „real“ number.“

„I am so disappointed about Mike, I want him out of my life! I wished I could take my number off his phone so he cant call me anymore.“

„Sometimes I wake up in the morning and feel embarrassed, vaguely remembering all those overly emotional sms I sent at night.“



Keeping power over one's personal data is an aspect of security and intimacy for women.

Concept: Social Accessories Insights.

„With my phone, my family and friends are always with me, it's like they are inside of my phone and always in reach. That's so reassuring.“

„It is a good feeling that my family and close friends can always reach me and vice versa.“

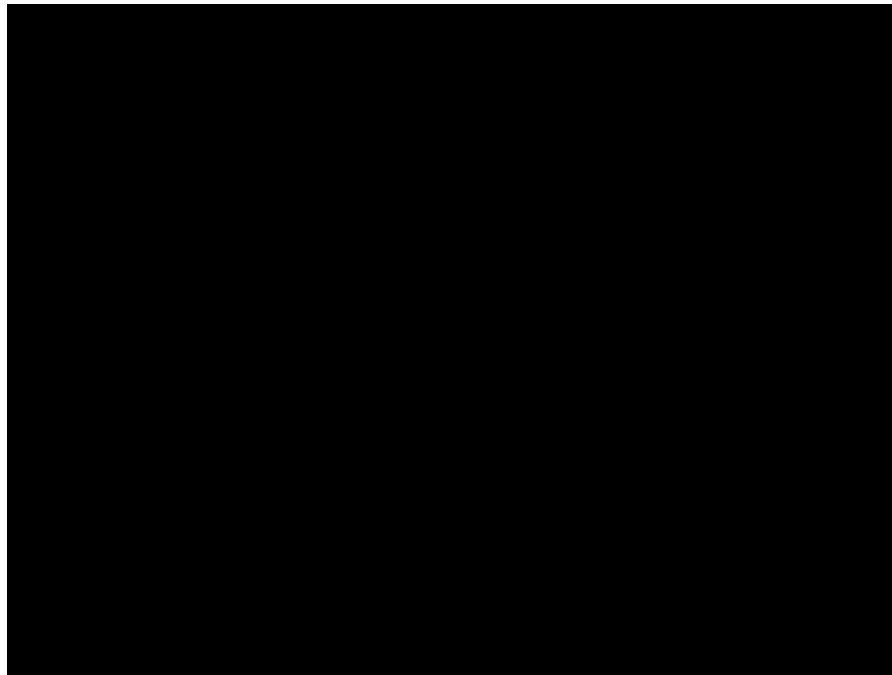
„Sometime I play around with my mobile, be busy with typing an sms just to avoid a smalltalk.“



Women use their mobile phones mostly for being in touch with their family and friends.

Concept: Share&Shame

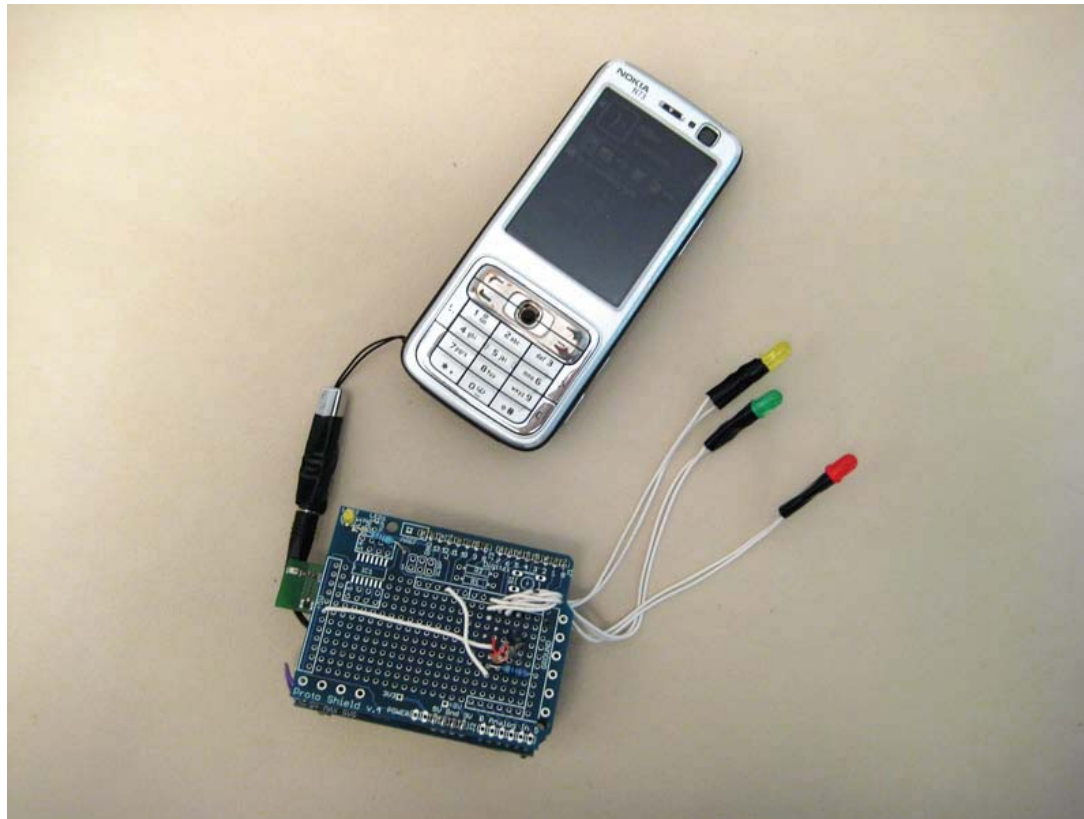
Design Proposal: Call Urself & Delete Myself



Concept: Social Accessories

Design Proposal: Bracelet

Working Prototype for „Call urself“ und „Bracelet“, with Arduino Board and LEDs



Methods & Tools.

Participatory Design, Cultural Probes, Generative Tools.



Pro Qualitative Approach:

Formative or exploratory research which serve as a source of inspirational data for the design practice necessarily needs to be qualitative.



Pro Participatory Design:

Involving users into the design process increases the awareness of real user requirements instead of creating stereotypes or the designers' mental model of the users' needs and desires.



Pro integrative design research contexts:

Integrative Research and Participatory Design contexts have different stages of sensitization and participation to introduce users to the research issue step by step. This approach promises to gather more thought-out answers and results.



Pro Cultural Probes and Generative Tools:

Uncommon questions and tasks makes the users reflect their everyday life and behavior from a different point of view and help them to express their desires, ideas and visions verbally as well as visually.

Opportunities and barriers for Innovation.

University / Industry collaboration.

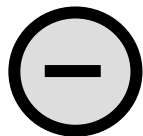


University

- Good facilities
- Funding opportunities
- Direct industry connection
- Transfer of ideas to market
- Market situation tools as up to date information source

Industry

- Effective and efficient knowledge transfer
- Stronger economic performance
- Educational purpose within company („Unternehmenskultur“)
- Direct access state of the art research
- Potential influence on research agenda



- Difficulties with intellectual property rights
- Industry influences research agenda
- Double workload: reporting to industry partner
- Commercialization of research and education?

- Aim for direct application of results, contrast to long term research / basic research
- Different values in industry / university
- Danger of getting no measurable results

Summary.

- Idea: Combining user research (qualitative and quantitative), design research and engineering skills in an interdisciplinary research project that is aiming at innovative products and services
- Design research initiates specific research questions that are dealing with real life „wicked“ problems
- Qualitative research methods are valid for design research tasks, quantitative testing is important for implementation and market launch
- Complementing technical driven research with design research and customer centric methods has proven to be a successful model



Thanks for your attention!

Gesche.Joost@telekom.de

10 Innovation Principles.

How to put Innovation into Practice.

- 1 Create a playground culture!
- 2 Be visual!
- 3 Bodystorm - think by doing!
- 4 Brainstorm - go for quantity!
- 5 Hijack, mash up, hack!
- 6 Involve real users!
- 7 Think the opposite!
- 8 Redefine your problem!
- 9 Innovation takes hard work!
- 10 Conduct Innovation Workshops!