

Lisa Henke

PORTFOLIO

CONTACT

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IRT THERMOMETER

2010 research & conception & design

The next generation of IRT thermometers is still in development and can therefore not be fully shown in this portfolio.

WelchAllyn® **BRAUN**





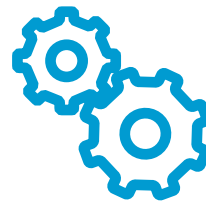
RESEARCH FACTORS IRT THERMOMETER



PSYCHOLOGICAL
what are fears & expectations
linked to thermometer



SOCIAL
how does the usage differs due
to social classes and habits



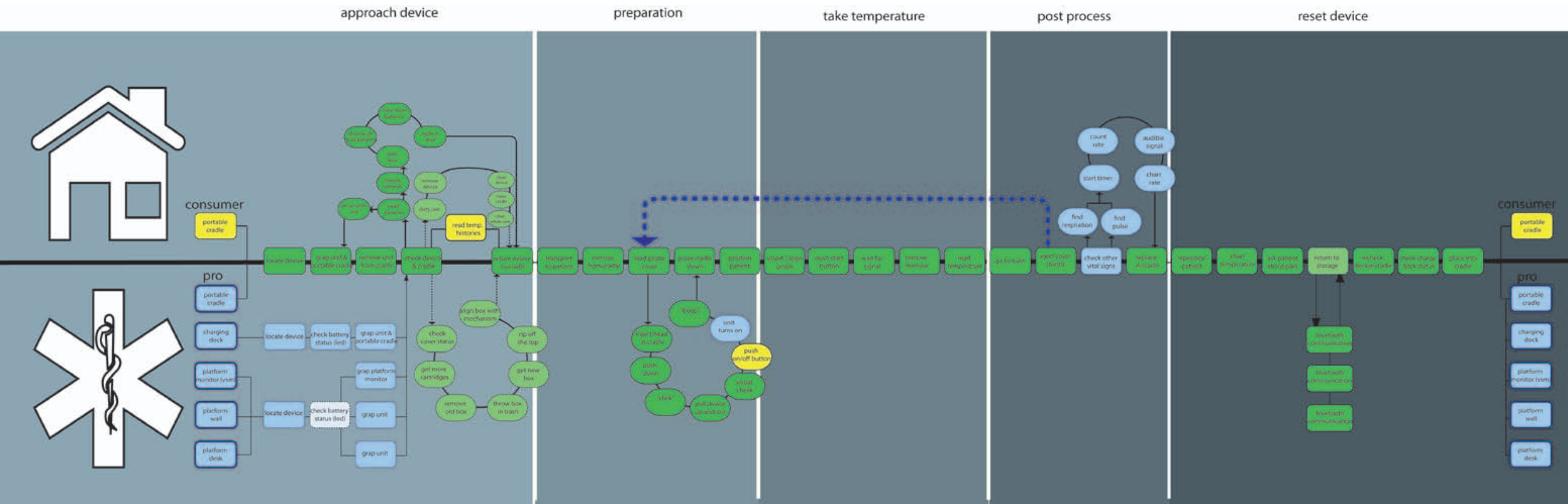
FUNCTIONAL
what are different scenarios
& usage



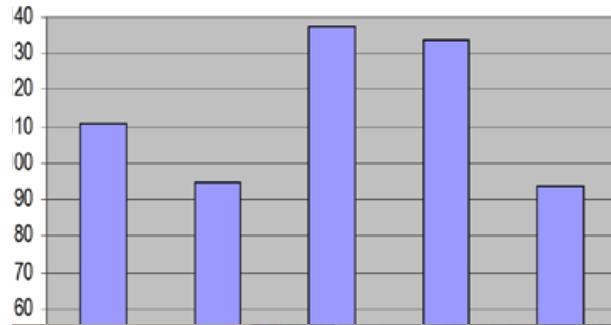
CULTURAL
how does the usage differs
throughout various cultures

WORKFLOW ANALYSIS

Key insight of the workflow analysis was to clarify the procedure and to identify the common points as well as the differences between the professional equipment and the customer device. It also illustrated not needed loops and the potential for a better workflow integration.



PAINPOINTS CONCEPT-TESTING



To test and identify the different pain points and misuse of the existing product user testings and rankings helped finding the key components for a right & precise handling.

PRECISION

SIGHT

CLEANING

SAVETY

ERGONOMICS

TIME



DESIGN DEVELOPMENT & REFINEMENT



BRAINSTORMING

CONSOLIDATING

TESTING

REFINING

MODELMAKING

DRONE FOR UNDERWATER ARCHAEOLOGY

graduation project 2009



DEVELOPING THE RESEARCH - FRAMEWORK



interview

Interviewing different usertypes and find out about their stories, needs and get to know the important hidden knowledge has been the base for this phase. The focus was put on the hard facts as well as on the perception.

observe

To find the problems and needs it was essential to observe the different usertypes and stakeholders. What are the different needs and where are potential fields of development for the market,

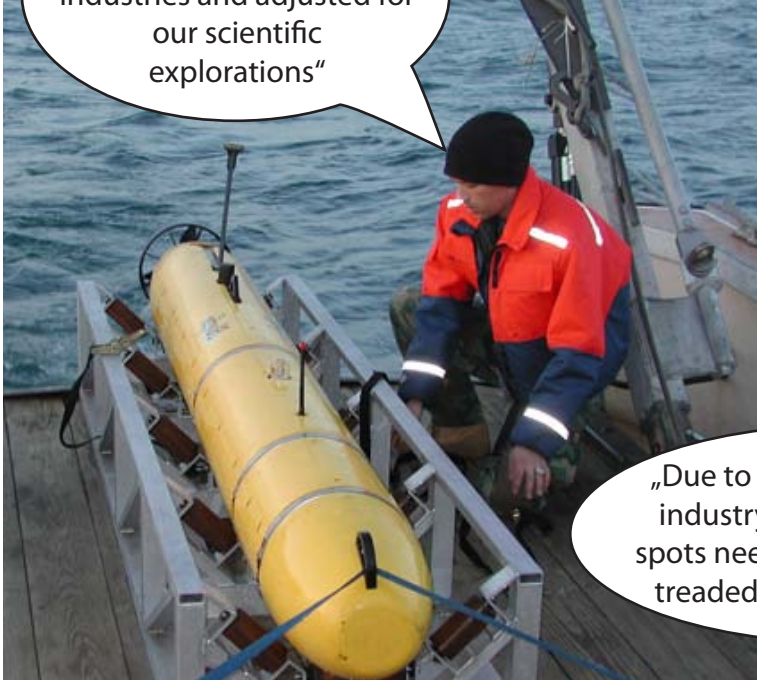
immerse

In order to comprehend the problem it was important to fully immerse myself within the culture of the market, Testing and running the whole process was the base to get to know the painpoints and soft spots of the process.

INTERVIEWS

customer observation & insights

„AUV` are mostly evolved from offshore industries and adjusted for our scientific explorations“



„Due to the growing offshore industry archaeological find spots need to be protected and treaded with the right tools.“

DR. GERRIT MEINECKE, scientist
center of marine environmental sciences

WORK ENVIRONMENT:
specialized prototypes & prof.equipment

SPECIALITY;
deep sea exploration, marine technology

„There is no AUV for archaeological purpose“



HERBERT LÖFFLER, archeologist
institute for sea research (ISF)

WORK ENVIRONMENT:
local state aided org.,limited prof. equip.

SPECIALITY:
subm. archaeology, underwater protection

„Divers are limited regarding time and depth. That makes the overall process inefficient,“



„Right now diving is still the only aerchaological approved standard method“

MARTIN MOERTL, scientific diver
limnological institute university constanz

WORK ENVIRONMENT:
university,volunteer work, simple tools

SPECIALITY:
submarine. sea research, history

MARKET POTENTIAL analysis of company profiles, interviews, industry forecast

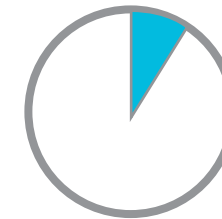
scientific standard



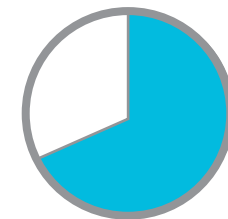
TARGET MARKET

- regional governmental organisations
- operation depth : max. 300 m
- operation area : coastarea (12 nm / 22 km)
- employees : 10 (up to 100 volunteers)
- company direction : (non) - governmental

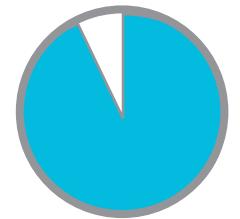
APPROVED BY SCIENTIFIC STANDARTS



PRIVATE ORGANISATION



NON-GOVERNMENTAL ORGANISATION



GOVERNMENTAL ORGANISATION

fundings

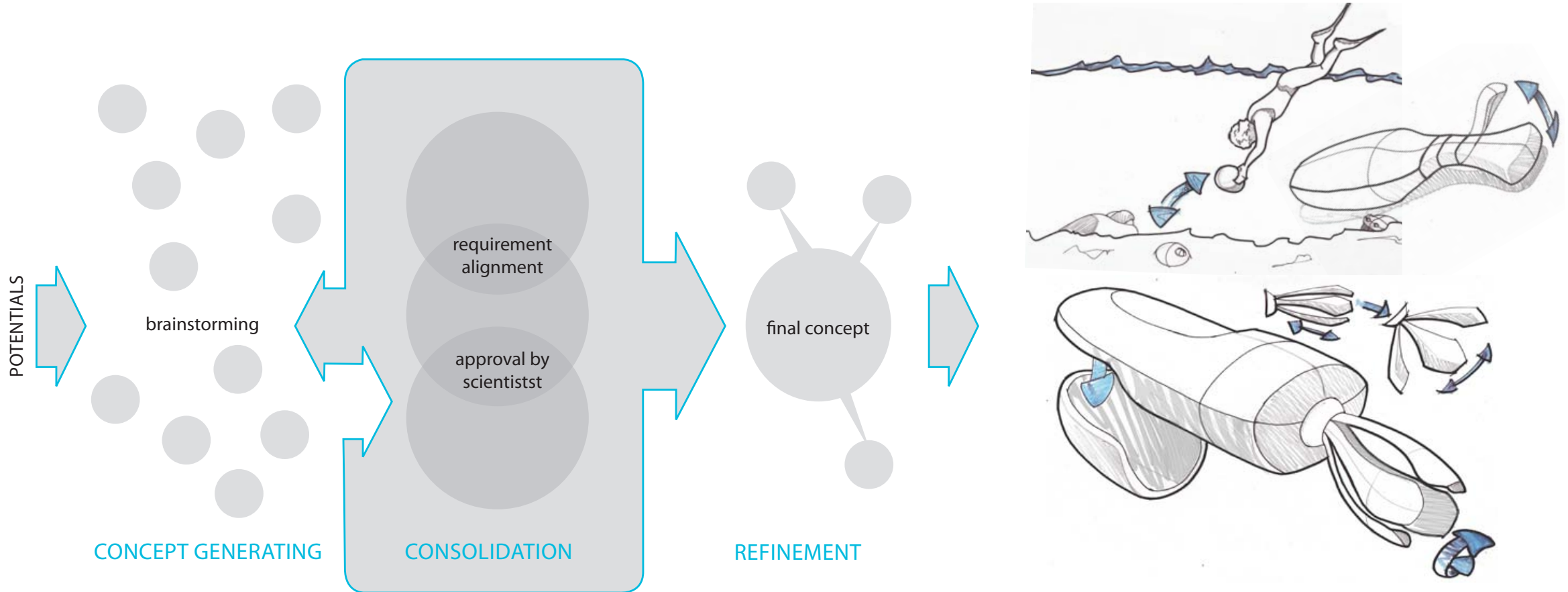


TIME CONSUMING	42%	CONTROLLABLE
COMPLICATED	39%	SAFE
RESTRICTED	38%	ACCURATE
INEFFICIENT	36%	EFFICIENT
ERROR-PRONE	33%	ADJUSTABLE
ANCIENT	25%	ROBUST
NON-AUTONOMOUS	18%	MODULAR
UNRELIABLE	10%	TECHNOLOGICAL
STATIC	10%	FUNCTIONAL
HEAVY	10%	



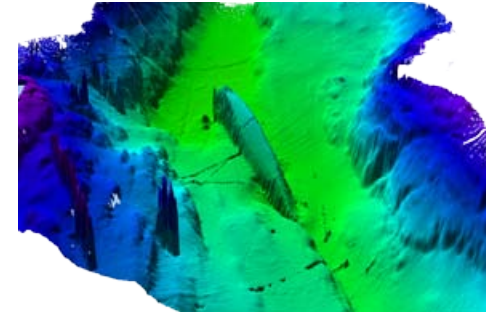
CONCEPT REQUIREMENTS

Based on the research findings as well as on the resulting requirements, a variety of different concepts were generated and consolidated. In several steps these single concepts were summarized into a novel system and product concept.

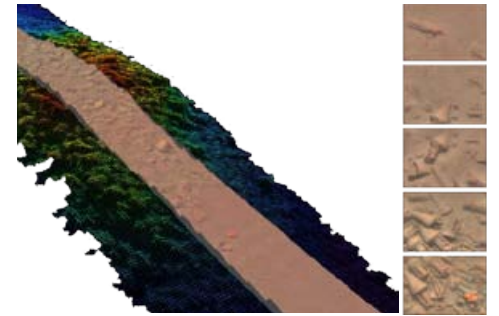


DATA GATHERING functions

The technical concept enables the AUV to gather all data needed for an entire examination of the archaeological spot. It can operate on 3 different detail levels, depending on the required survey and data. The integrated sonar and photography technology make a survey range from a simple overall measurement up to a complex 3-D-reconstruction possible.



1. side map
sonar technologie

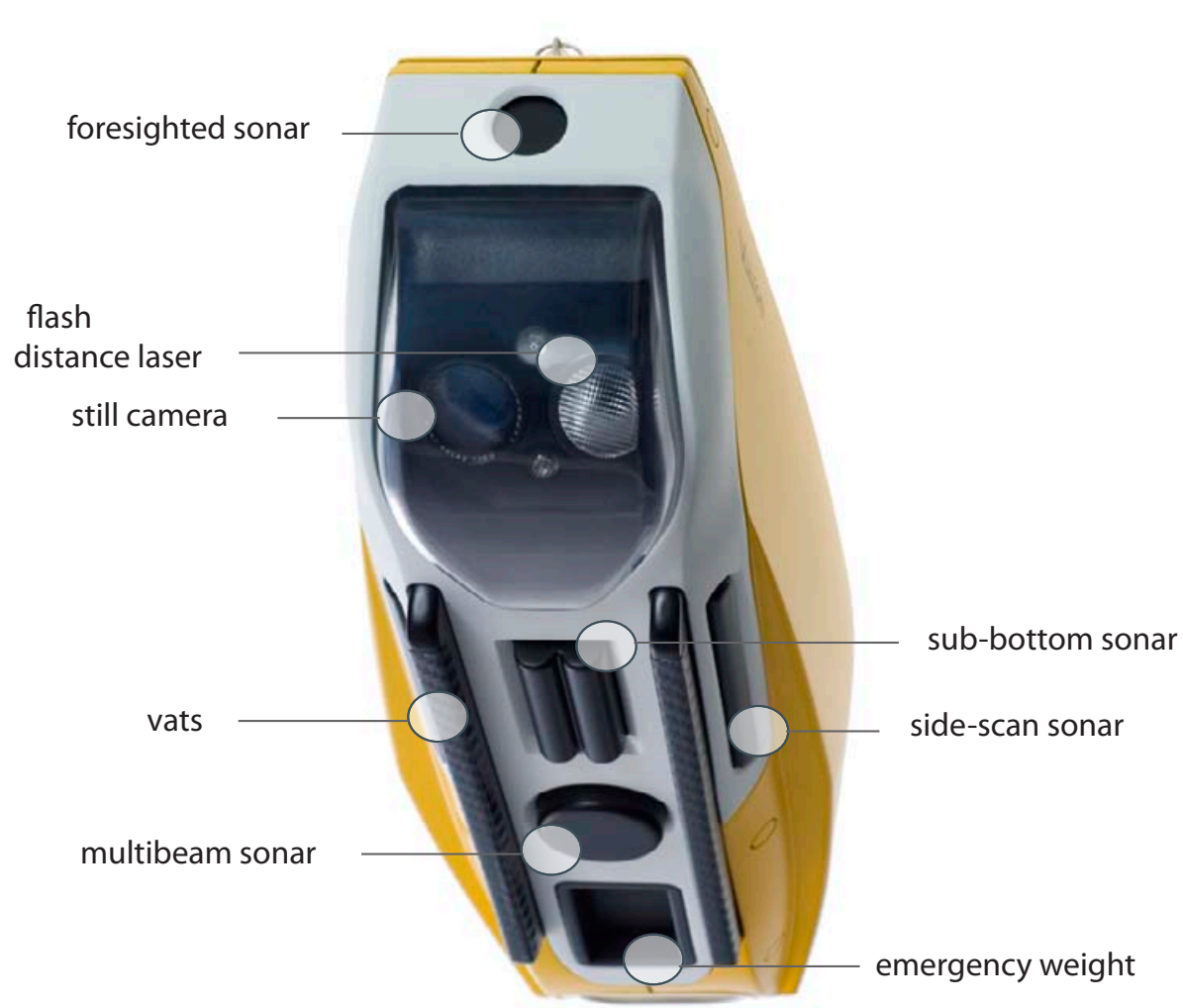


2. detail measuring
still picture & sonar tec.



3. 3D- reconstruction
photogrammetry

FINAL DESIGN





JOHN DEERE

RECONCEPTION OF A TRACTOR CABIN

development for John Deere, 2006



data is based on an average usage situation
time: 5 hours

COMFORT AREA

elements: extra seat
storage space
entertainment
time: 45 min.
adjustments: 30 %

STEERING COLUMN

elements: elements for drive mode control
time: 4.5 hours
adjustments: 90 %

RAILS

elements: monitoring management displays
time: 2.5 hours
adjustment: 15 %

SIDE CONSOLE

elements: elements for agricultural control
time: 4.5 hours
adjustment: 80%

RESEARCH

usage analysis & key-features

Based on a widespread workflow analysis, that included all sections of agricultural businesses, 4 main groups that dominate the workflow inside the tractor cabin were identified. All of them differ in terms of adjustment and usage time but define the basic workflow. A variety of interviews with different usergroups & stakeholders provided us with additional insights of the needs & misuse of existing elements.





SYNTHESIZING DATA → INNOVATION FIELDS

DIVERSE RECORDING OF NEEDED DOCUMENTATION INTERRUPT THE ACTIVE WORKFLOW & SUPPORTING DATA REMAINS UNUSED

DOCUMENTATION

its compulsory but no build-in device is provided
analog documentation consumes a lot of time
no control mechanism



PROGRAMMING

only the basic functions are in usage
valued data remains unused
no automatic datatransfer + handwritten reports



COMMUNICATION

no continous reception provided
cell phone usage leads to interruption of workflow



ERGONOMICS

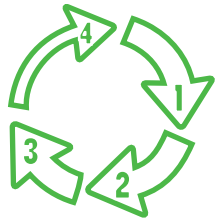
no finetuning possible during the workprocess
restricted reachability due to missarrangment
add-ons limit ergonomics



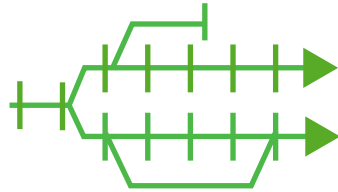
CONTROLLING

no digital & simultanious controlling
analog report needed infos are handwritten

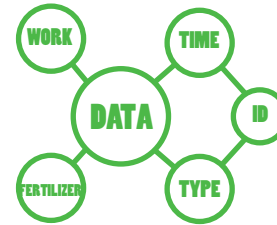
STORY TELLING & CONCEPT TESTING



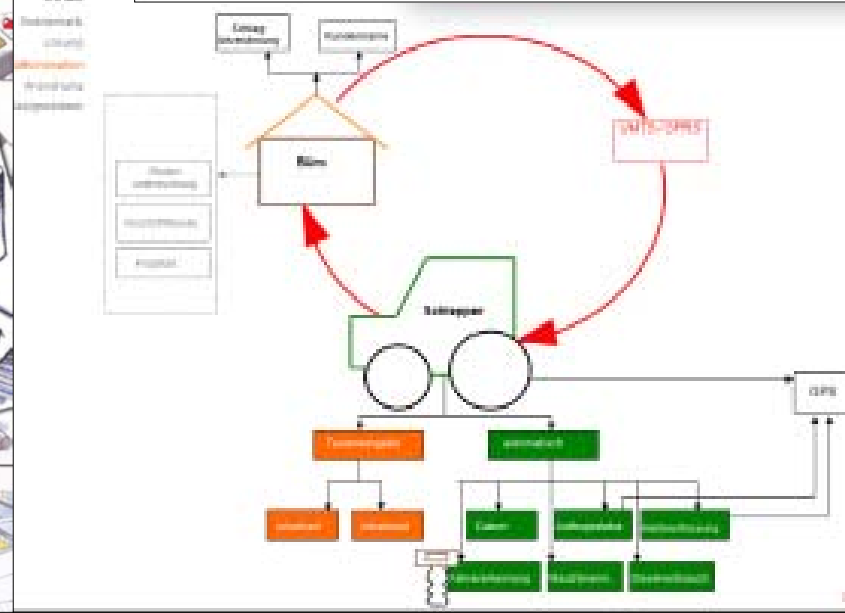
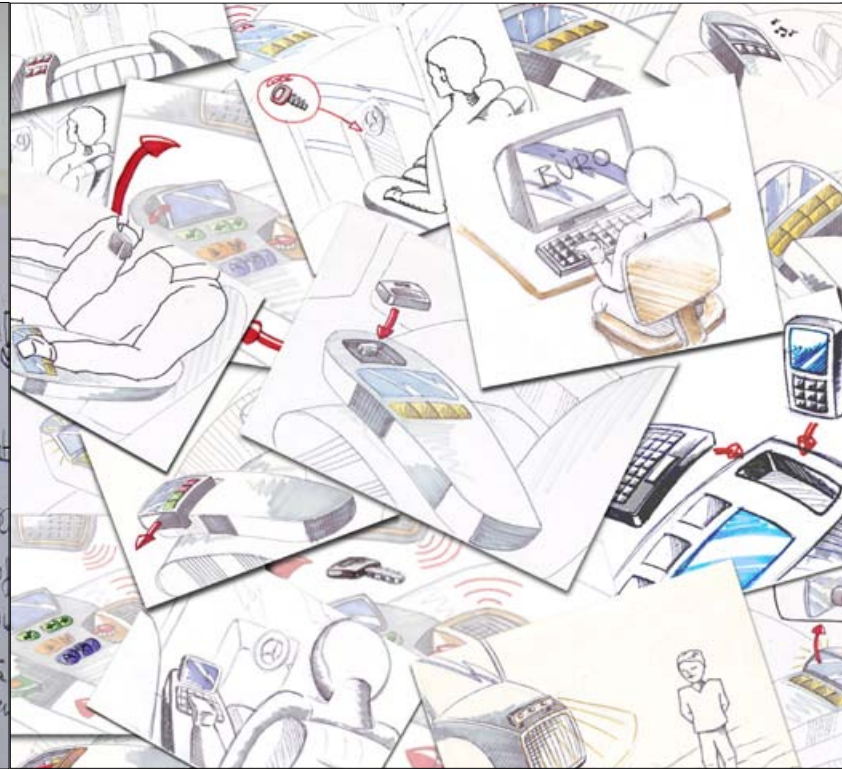
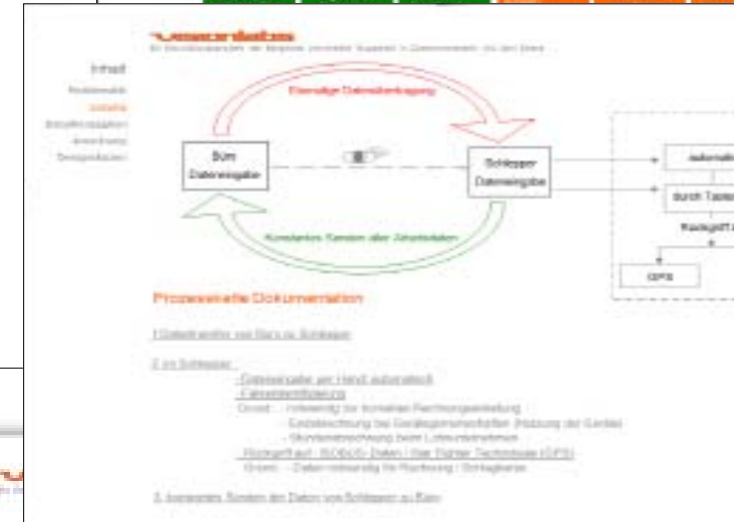
JOURNEY



TIMELINE

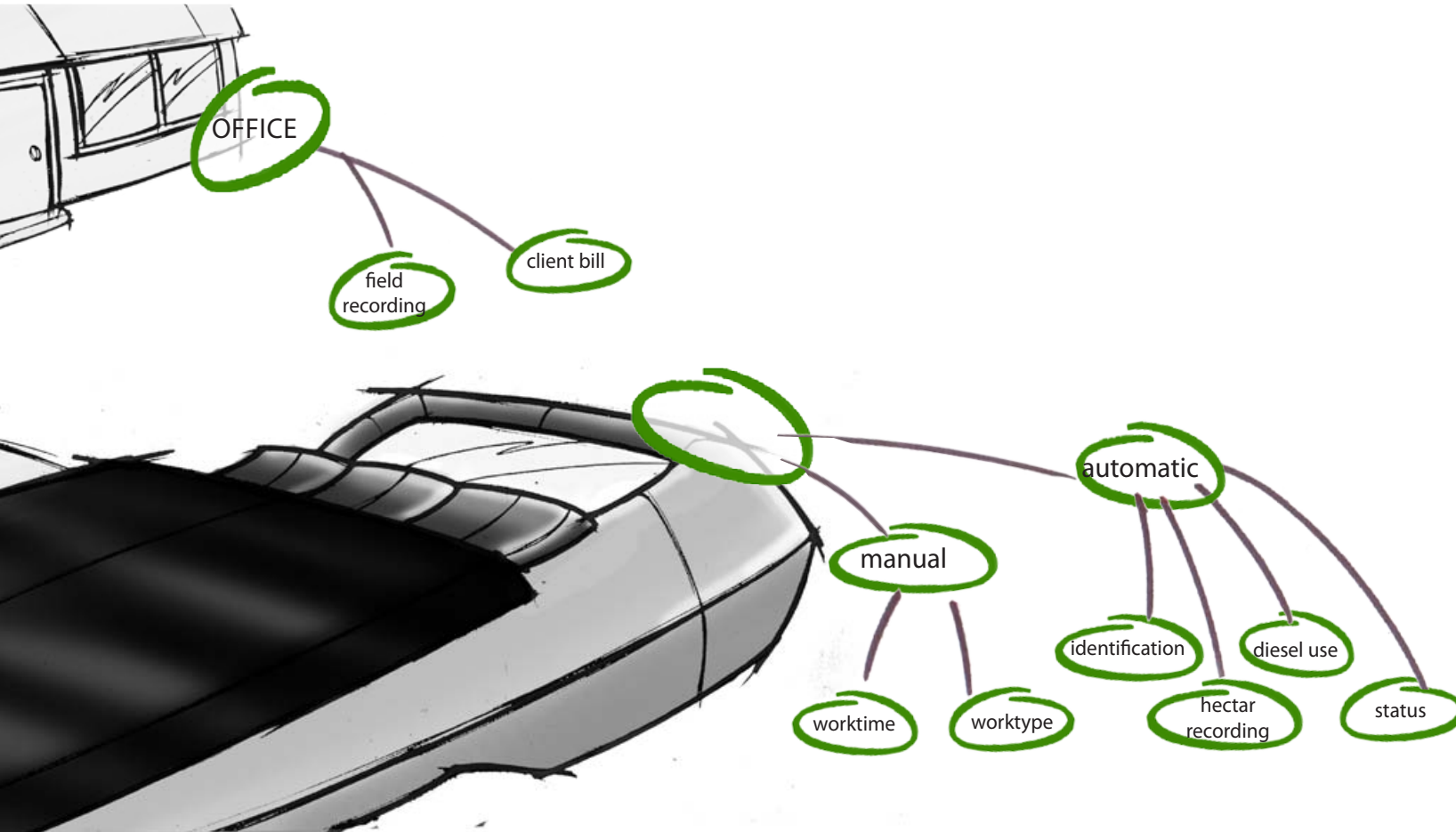


CONCEPT MAP

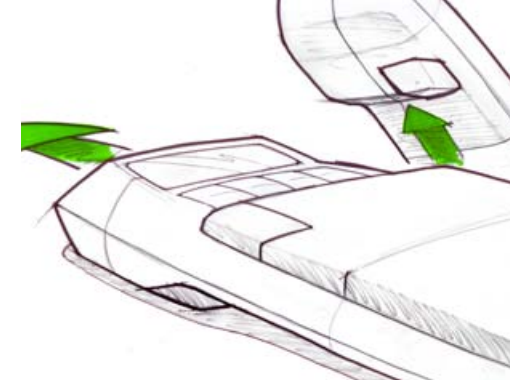


WORKFLOW

Further user interviews focused on the need to gather and analyze data as well as on the demand to document the work. This specific insight is turned into concepts to create product solutions that address the consumer needs and a final direction is chosen.



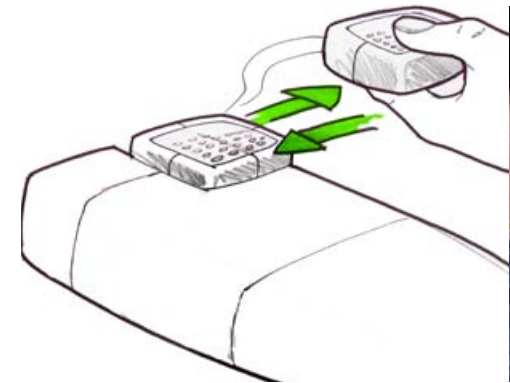
PROGRAMMING "It's way to complicated"



DOCUMENTATION "I write everything down"



COMMUNICATION "I never have reception"



DATA & COMMUNICATION CONCEPTION

cabin components



JOHN DEERE

CABINMICROFON

DRIVER IDENTIFICATION

- working hour recording
- bill generating

2-WAY DATAFLOW

- constant workstatus control
- flexible adjustment
- automatic data capturing

DATA GENERATING

- by GPS/ISOBUS

DATA GATHERING

- field record system
- bill generating

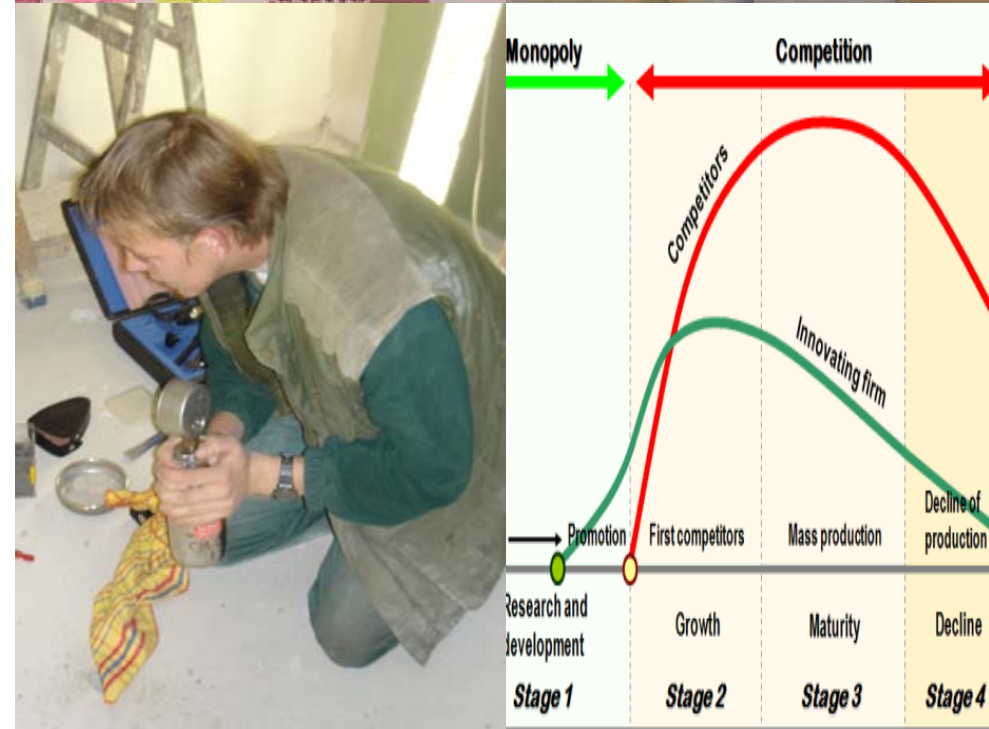
COMMUNICATION

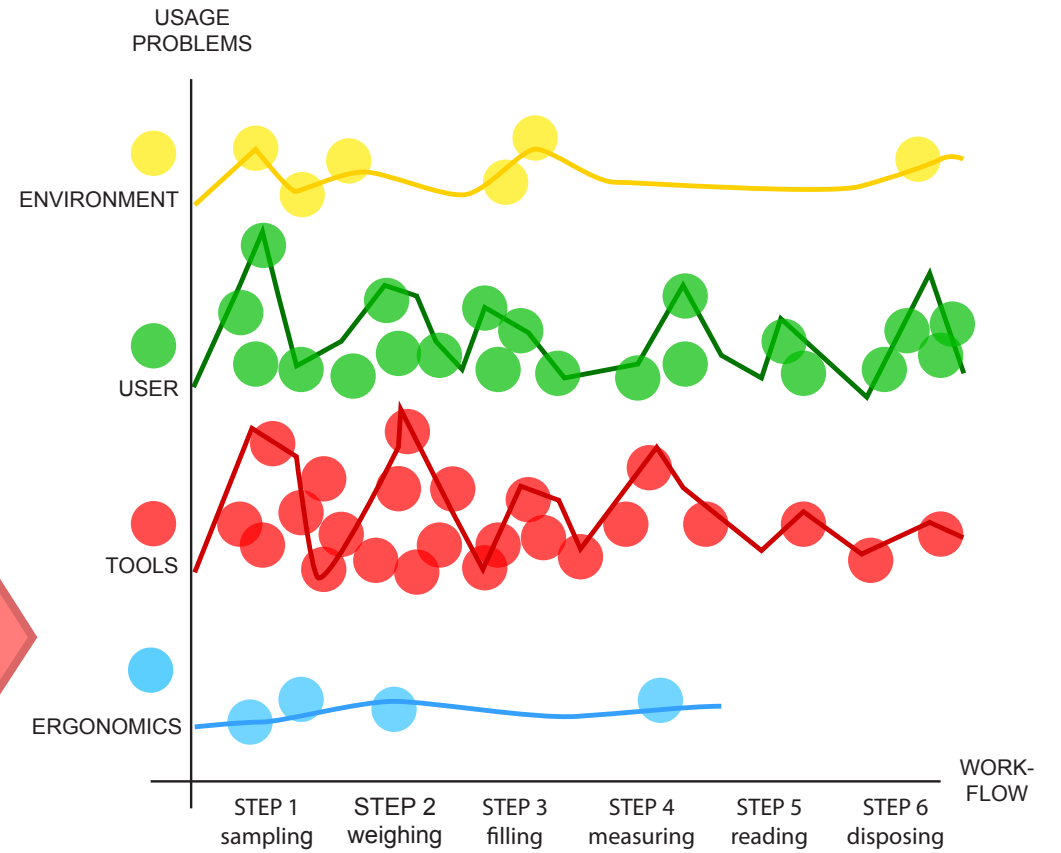
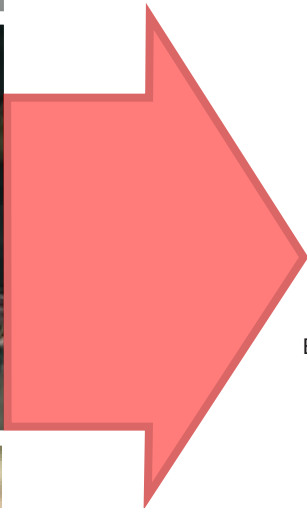
- UMTS/GPS hybrid funk
- talking while driving
- complete coverage
- secured talk
- hands-free system
- targeted calling



SYSTEM ANALYSIS FOR MOISTURE MEASUREMENT

research & concept studies, 2006



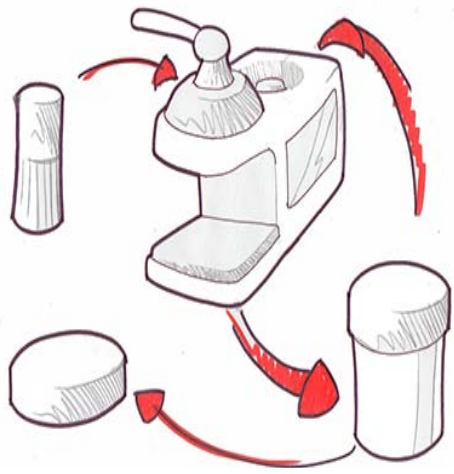


RESEARCH ANALYSIS

The current process of moisture measurement is characterized by many different steps with numerous touching points that affect an accurate result. To ensure a correct measurement the probe can not be touched and has to be treated in a specific way. Due to inadequate tools and handling the result is often falsified and leads to several measurements.

CONCEPT REQUIREMENTS

based on the insight concepts were developed & consolidated



SYSTEM INTEGRATION

the measurement system needs to be integrated in the working situation at a construction site.



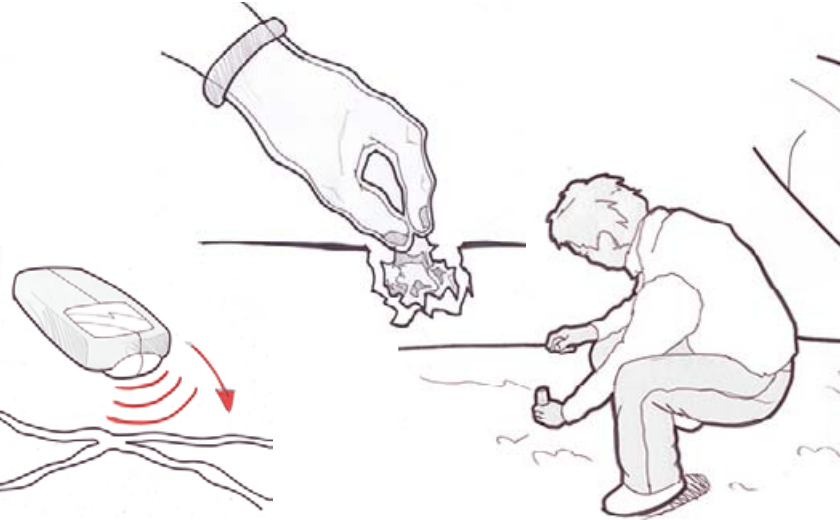
ISOLATION

the risk to falsify the measurement with touching the probe can be reduced by isolating the sample



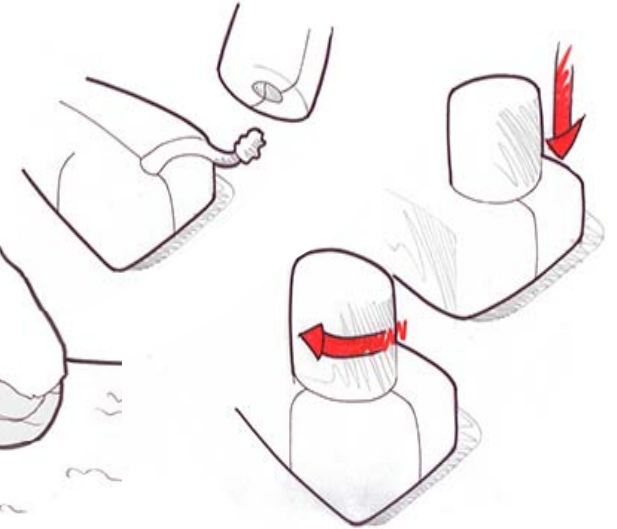
DIGITALISATION

the measurement gains a higher accuracy with digitalising the measurement



ERGONOMICS

the sample removal and handling of the device have to address the usage situation



SIMPLIFICATION

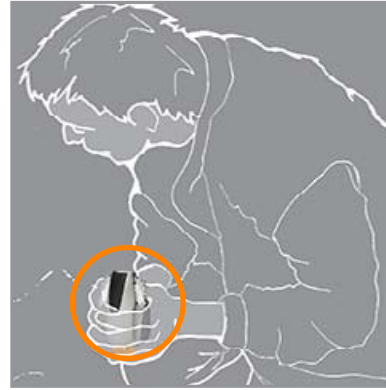
the various individual steps have to be combined into a cohesive workprocess

SYSTEM WORKFLOW



1.METERING POINT

Metering points are inserted by the concrete worker without risking to damage invisible pipes



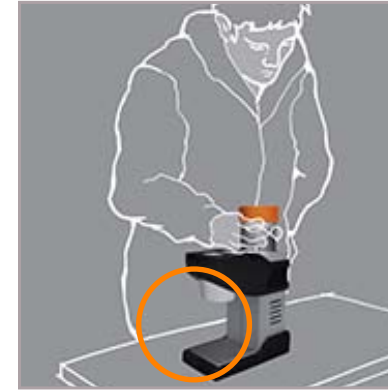
2.SAMPLING

Easy sampling with removal tool. The risk to touch the probe and falsify the measurement is minimized



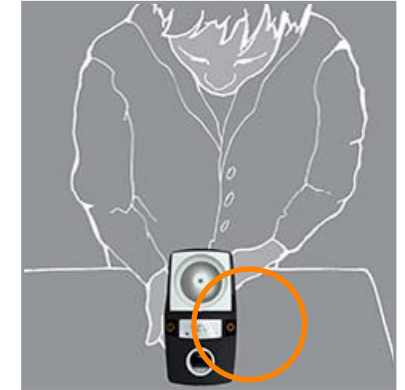
3.GRINDING,WEIGHTING

The sample is grinded and automatically weighted by the underlying scale, additional steps are omitted.



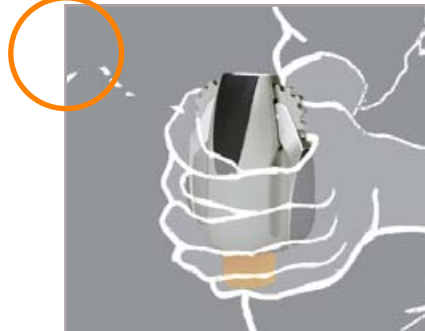
4. CM-MIX, MEASURING

The chemical containing 1-way cap is added. The isolated mixing of the 2 components (sample, chemical) rises the pressure



5.METERING

A pressure valve measures the pressure and converts and displays it into the moisture percentage of the sample.



Friedrich **300**

*Stiftung Preussische Schlösser und Gärten
Berlin-Brandenburg*

MUSEUMS STRATEGY FRIEDRICH 300

2011 conception & user research





WHO'S THE USER ? VIDEO STORY TELLING



CHARACTER

he does what his friends do
in need to be considered "Cool"
he follows the trends
doesnt have created



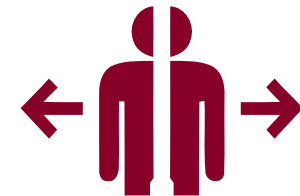
RULES

his life is dictated by his
parents rules & orders
he hates the restrictions but
still partly dependents on them



SOCIAL HABBITS

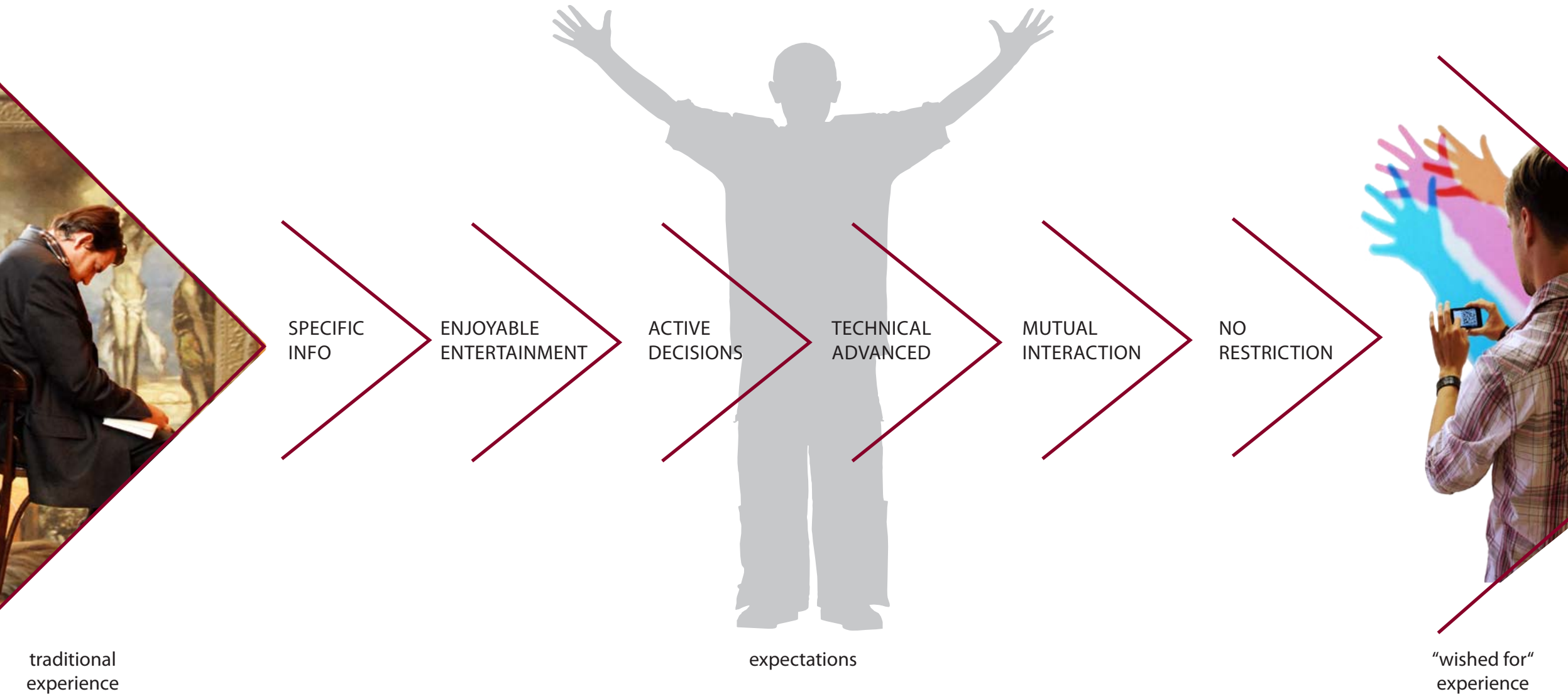
he drinks, smokes...
part of being cool means to
do the forbidden things



BEHAVIOUR

"be against the rules"
does the opposite of what
he is supposed to do
he pushes the boundaries

strategy - GO BREAK THE RULES



CLUSTERING exhibition strategy



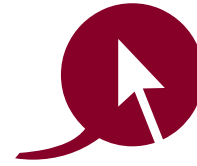
INTERIOR

Use the already existing interior & work with non-invasive-additive concepts



OUTSIDE ACTIVITIES

Include the outside area & construction side in the exhibit to extend it



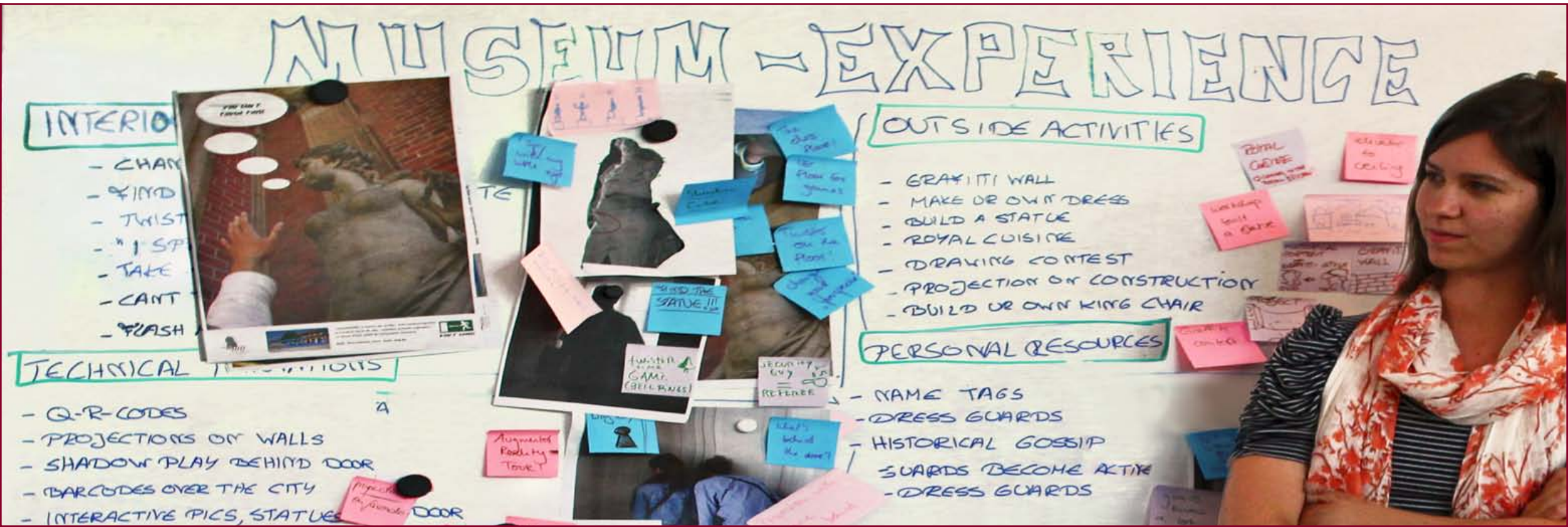
TECHNICAL INNOVATIONS

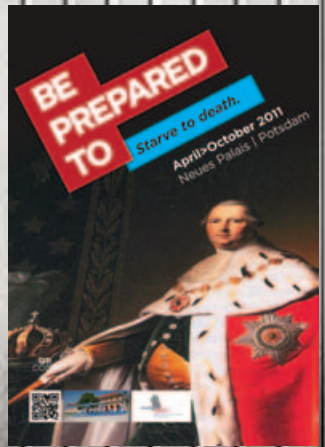
Use technology to create interactive experiences & to integrate the online world



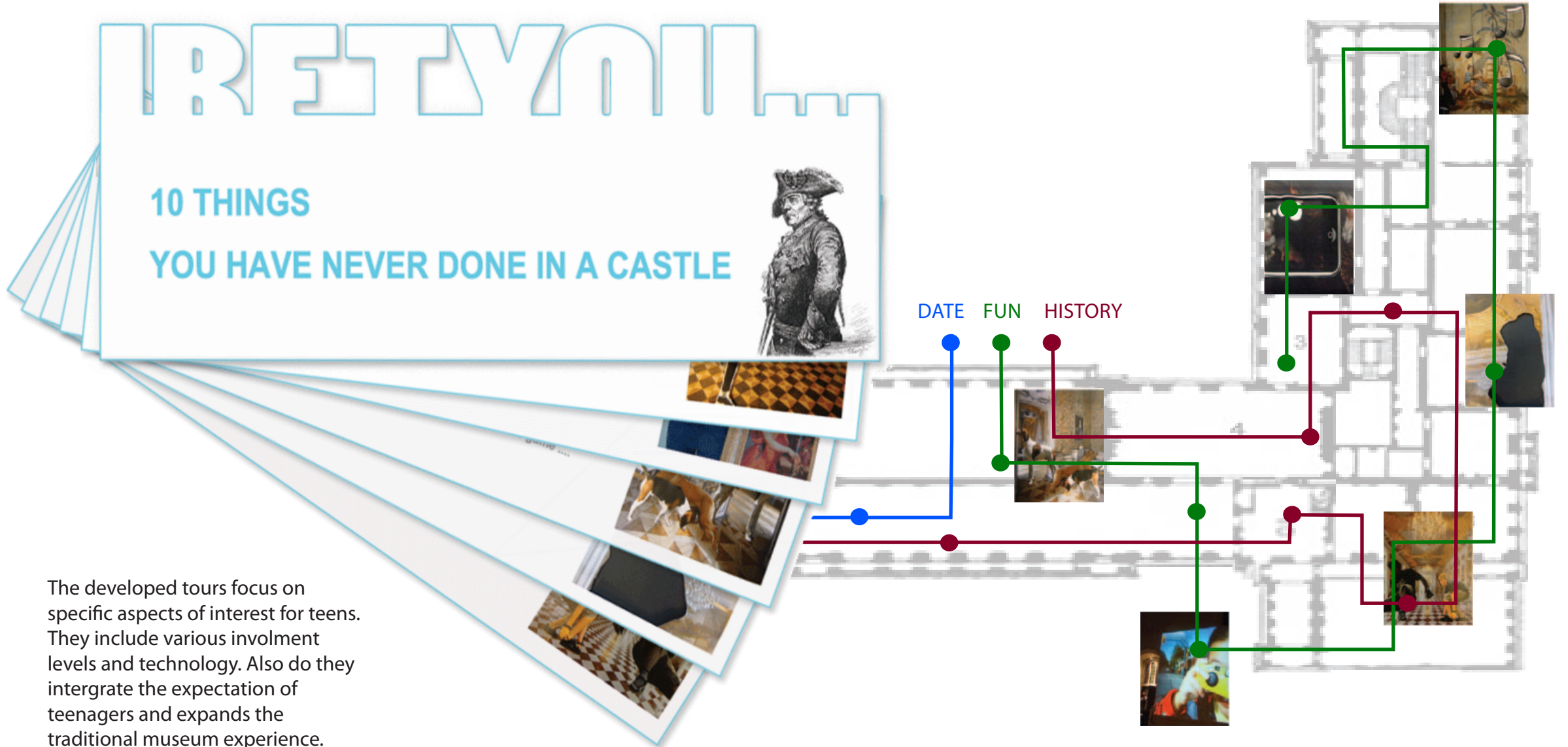
PERSONAL RESOURCES

Work with the knowledge & sidestories of the employees & make them an active part





EXHIBITION CONCEPT tours



The developed tours focus on specific aspects of interest for teens. They include various involvement levels and technology. Also do they intergrate the expectation of teenagers and expands the traditional museum experience.

MORE WORK SAMPLES



2007



2008

SIEMENS



2010

Honeywell



2010

maxell



2009

BOSS
HUGO BOSS



2009



2010

 **Smartfish**

If you are interested in more detailed information please ask for the extended portfolio version. I am always happy to explain the projects to you in person.

THANK YOU for your attention