
ERGONOMIDESIGN


Since 1969 we've helped clients all over
the world to increase sales and build brands
SL
Pfizer
Q-MED
GE Healthcare
FLIR SYSTEMS
Thinking of you
Electrolux
P&G
SJ
SAS
Scandinavian Airlines
ABSOLUT Country of Sweden VODKA
PELTOR
doro
Roche
Gillette
THULE
HITACHI
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Koenigsegg
MAQUET
PEPSICO
BAHCO
Microsoft
ARJOHUNTLEIGH
DECATHLON
novo nordisk
OPTIMUS
3M
IKEA
VOLVO
ERICSSON
BRIO
ejendals
AstraZeneca
GETINGE
GETINGE GROUP
lypsyl
STAR ALLIANCE
Johnson&Johnson
DUPONT
Telia
ASSA ABLOY
Unilever
Jordan
HAGLÖFS
PEAK PERFORMANCE
ABB
BABYBJÖRN
TOYOTA
NOVARTIS
Aerocrine
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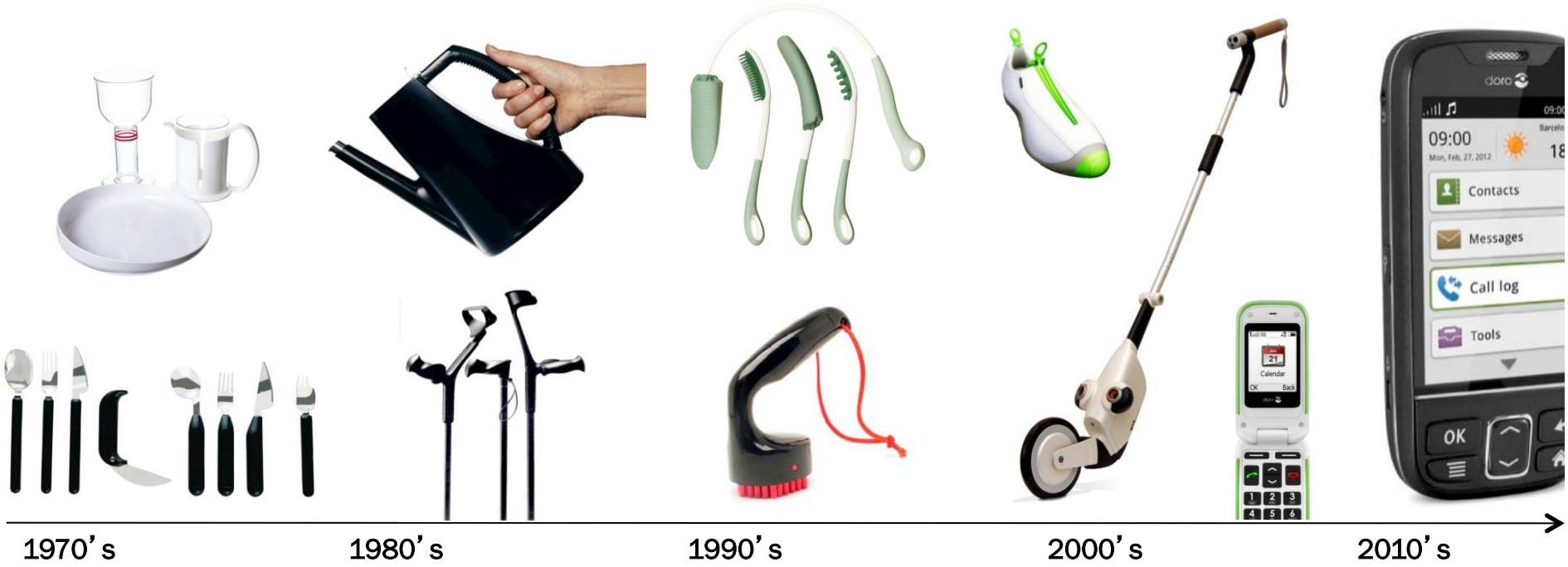
A history of passion and dedication

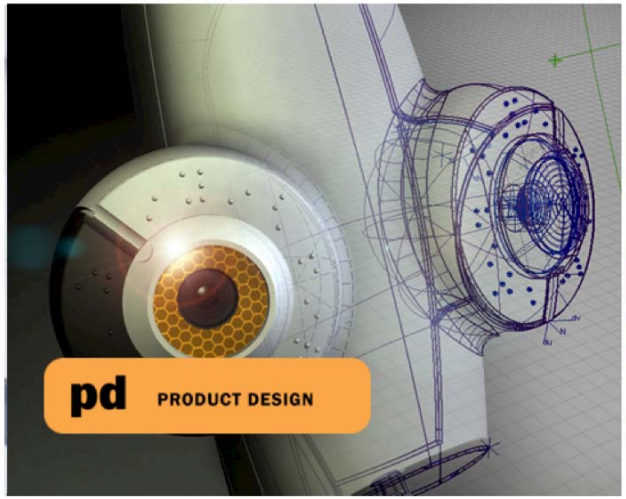


We are a multidisciplinary design firm

ds DESIGN STRATEGY

ixd INTERACTION DESIGN

is INNOVATION SUPPORT

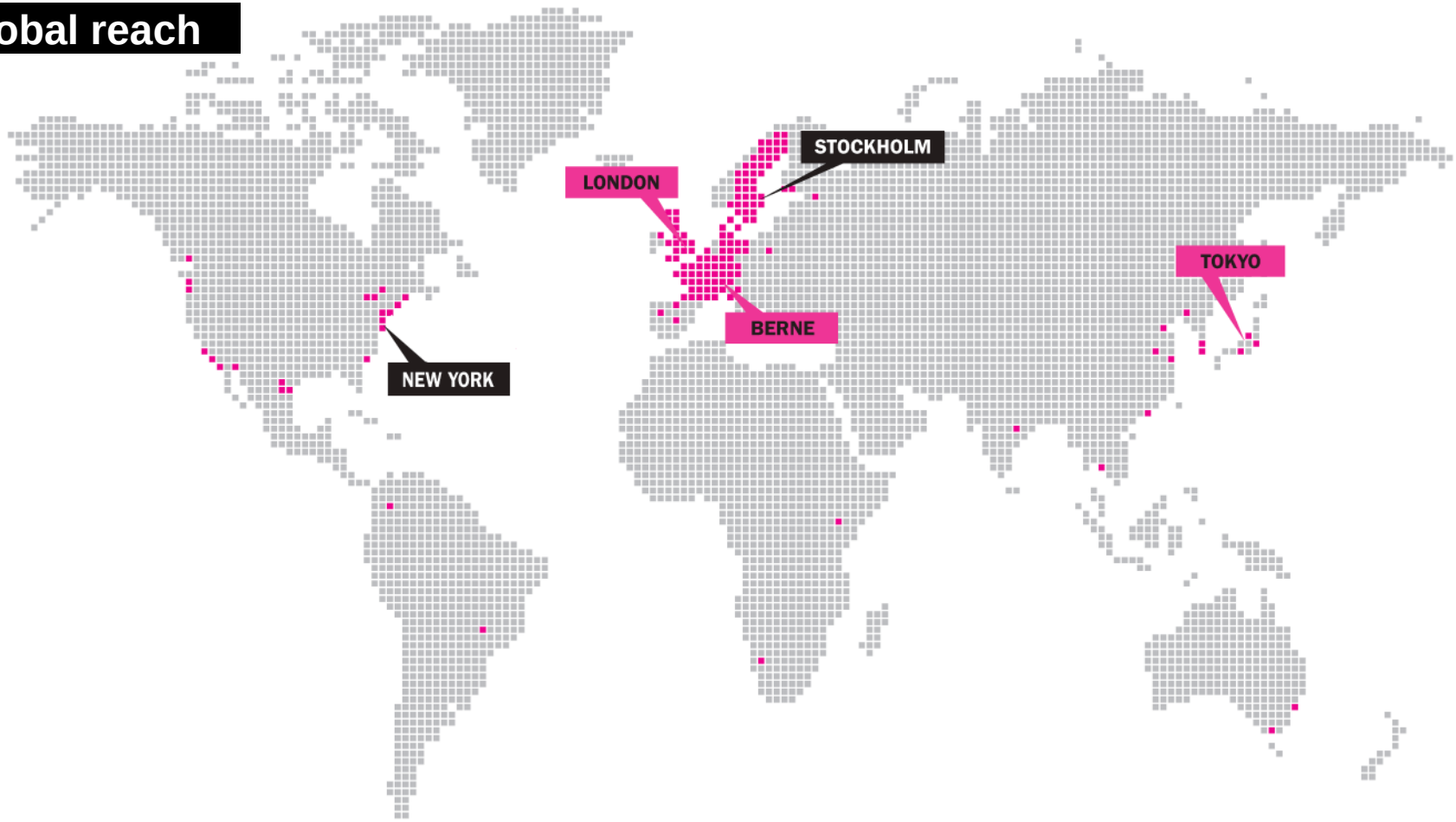


pd PRODUCT DESIGN

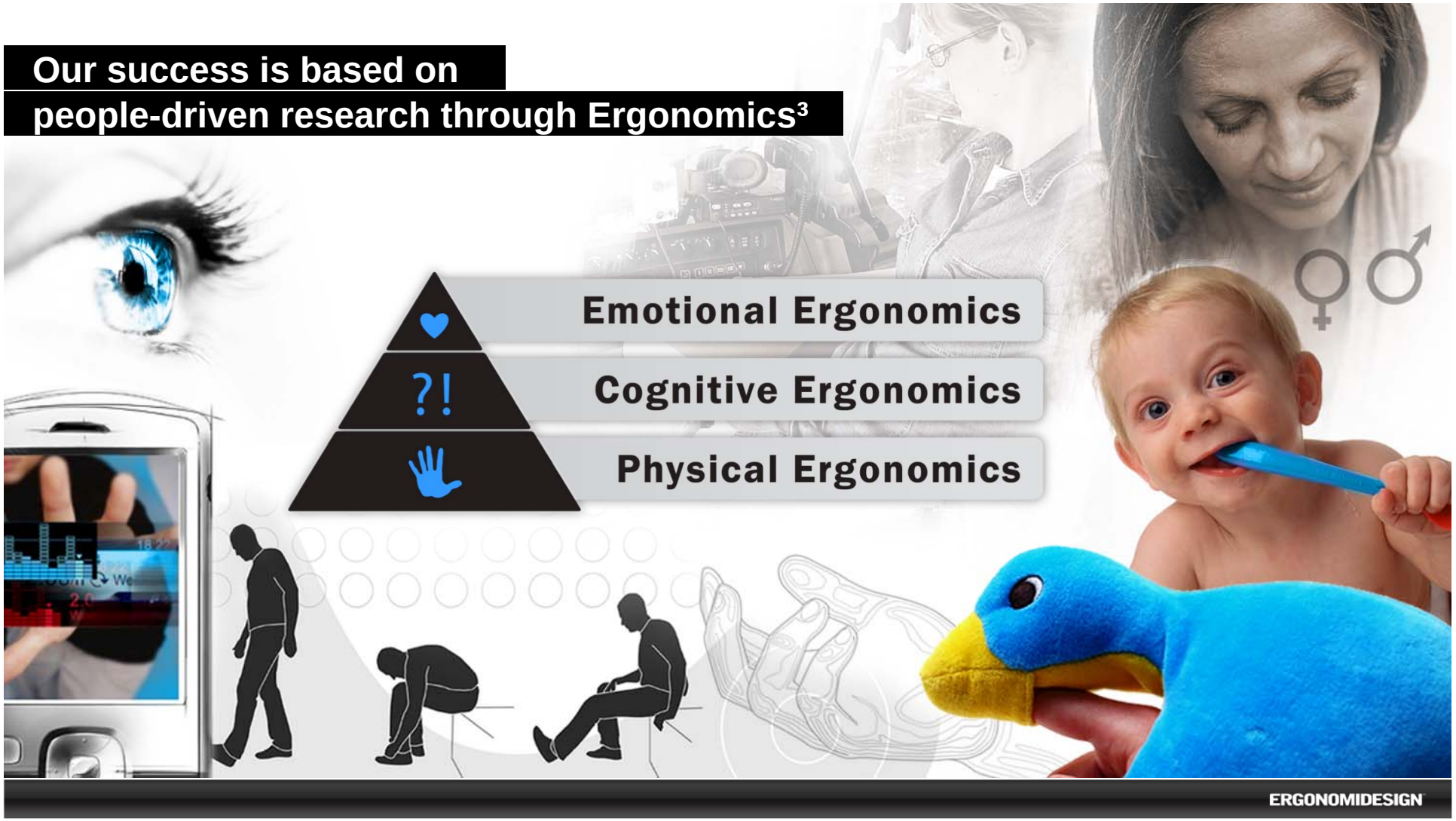
pr PREMIUM RESEARCH

sd SERVICE DESIGN

Global reach

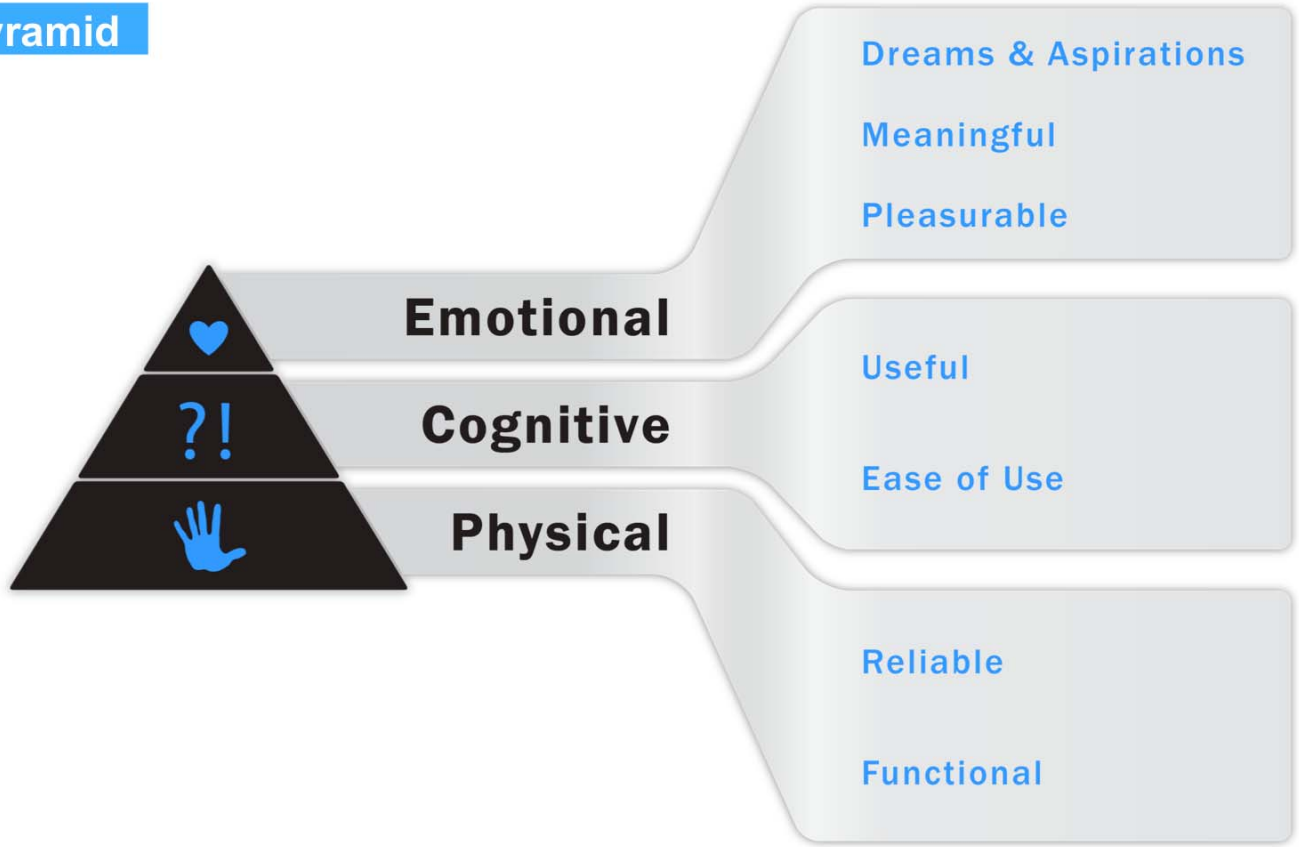


Our success is based on people-driven research through Ergonomics[3]



Ergonomics3

The Pyramid



Research Phases

PREDICTIVE

Forecasting

Identifying opportunities

GENERATIVE

Generating insights

Identifying needs

Requirement document

Sparking innovation

EVALUATIVE

Assessing concepts

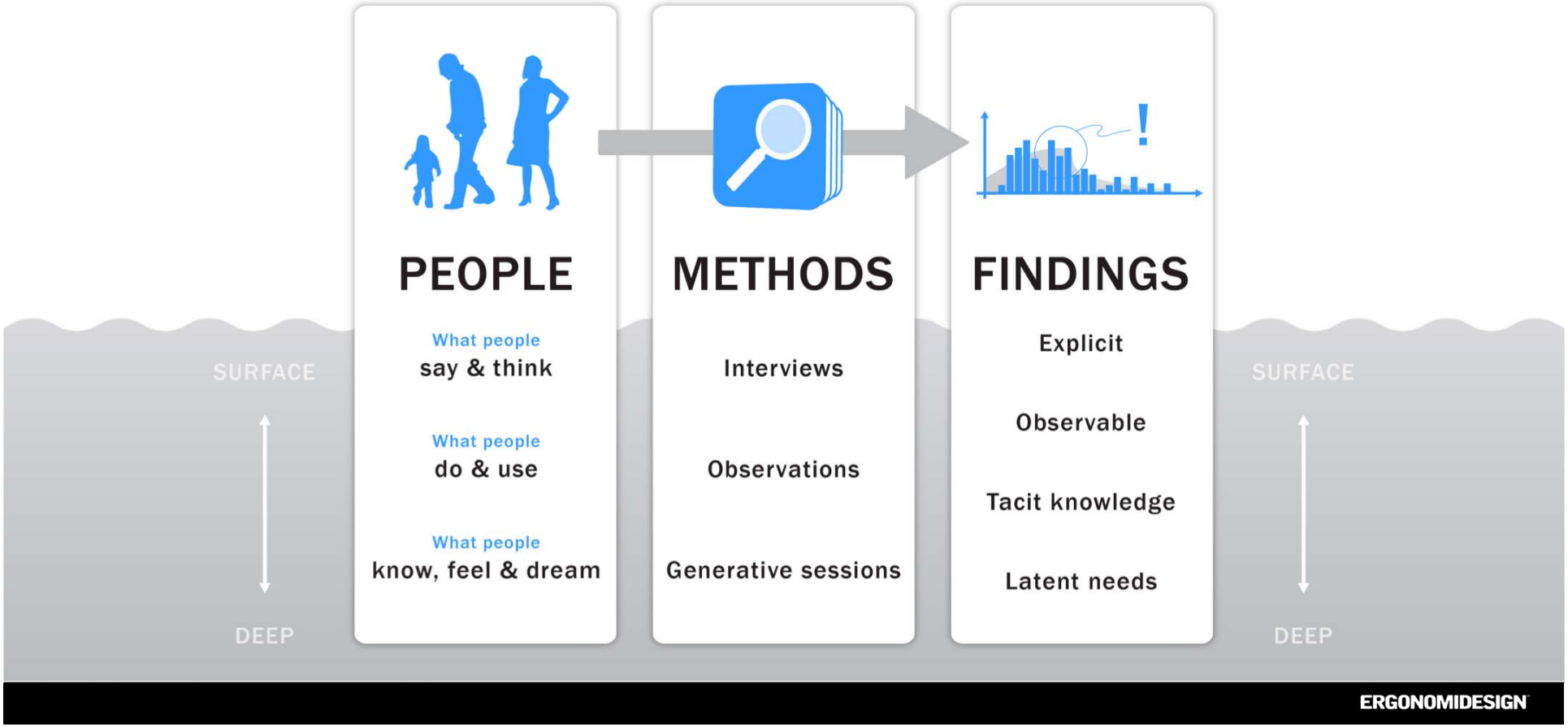
Verification

VALIDATIVE

Validation

Pre-launch research

Research Process



”More than big buttons”

Design for Alle - Indsigt + inklusion = innovation

I will talk about User insights as a base for innovation

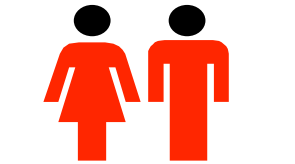
and in particular the research that led to the design of Doro´s new smart phone

Our approach to Inclusive Design

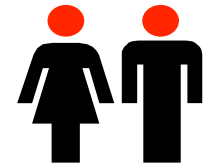
Design and innovation for all people

Designing for equal opportunities

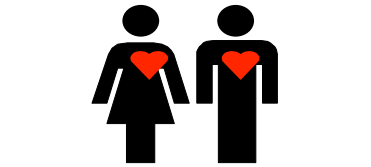
Physical



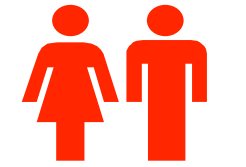
Cognitive



Emotional

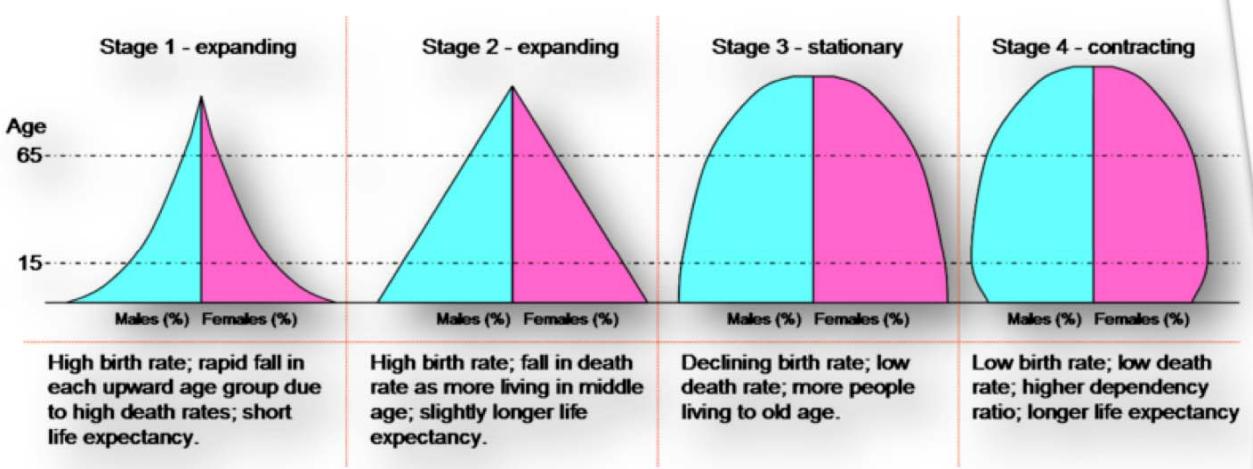


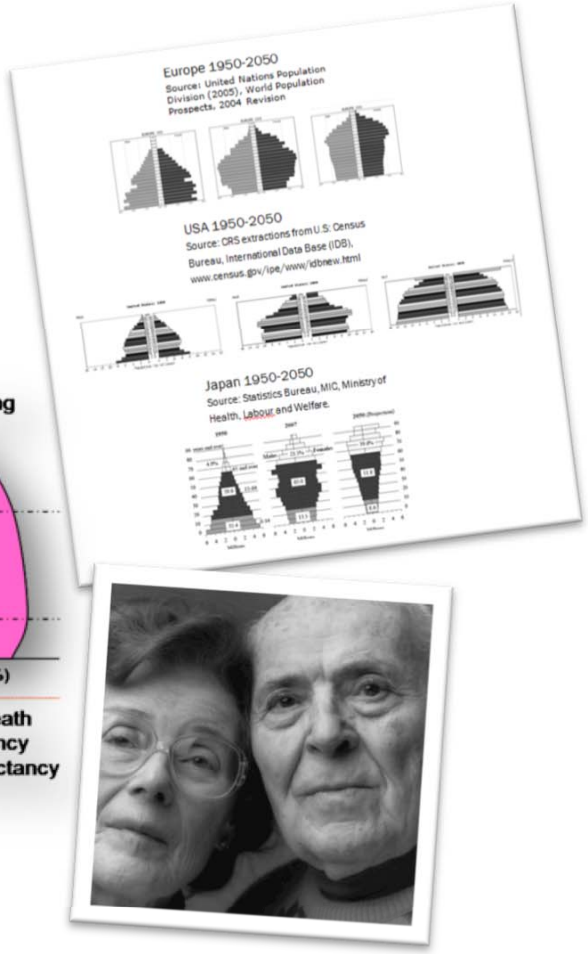
Socio - cultural



Economic Drivers

According to WHO data from the year 2000 individuals aged 60+ constituted 19,4% of the populations in the developed countries as opposed to 7,7% in the 1950 (WHO, 2001).





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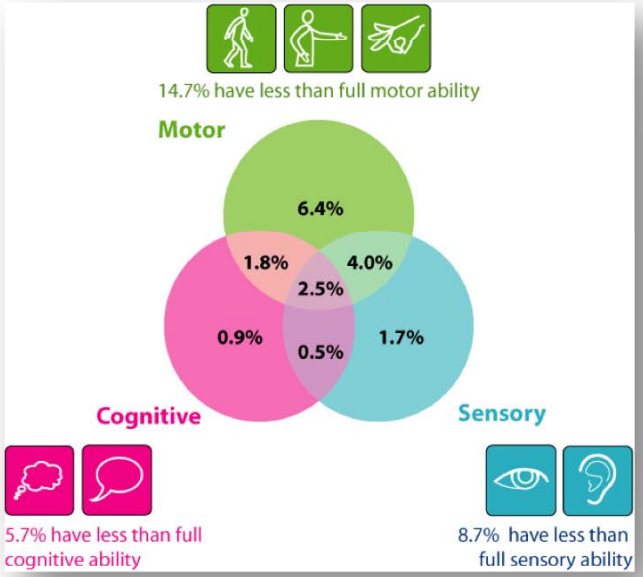
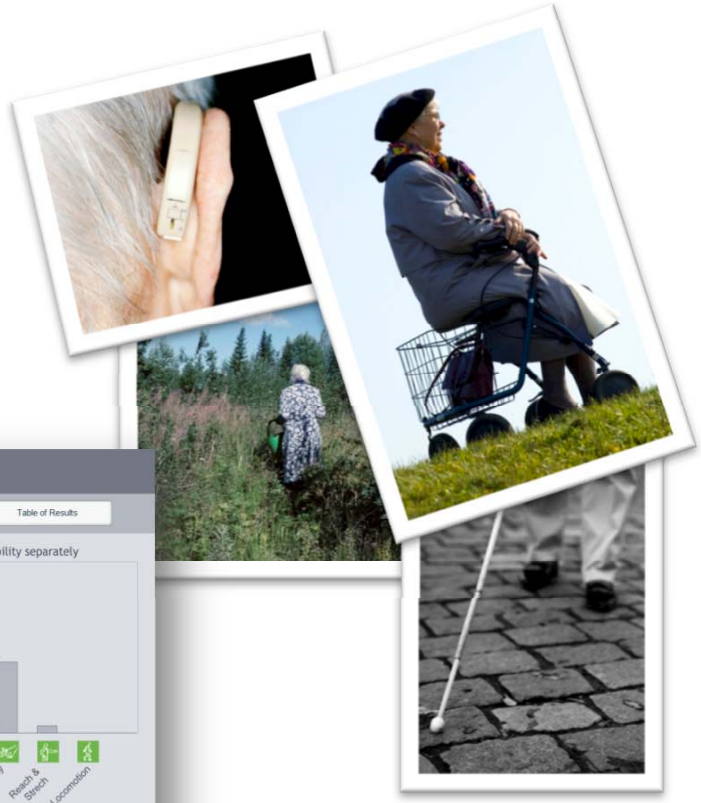
Exact Figures

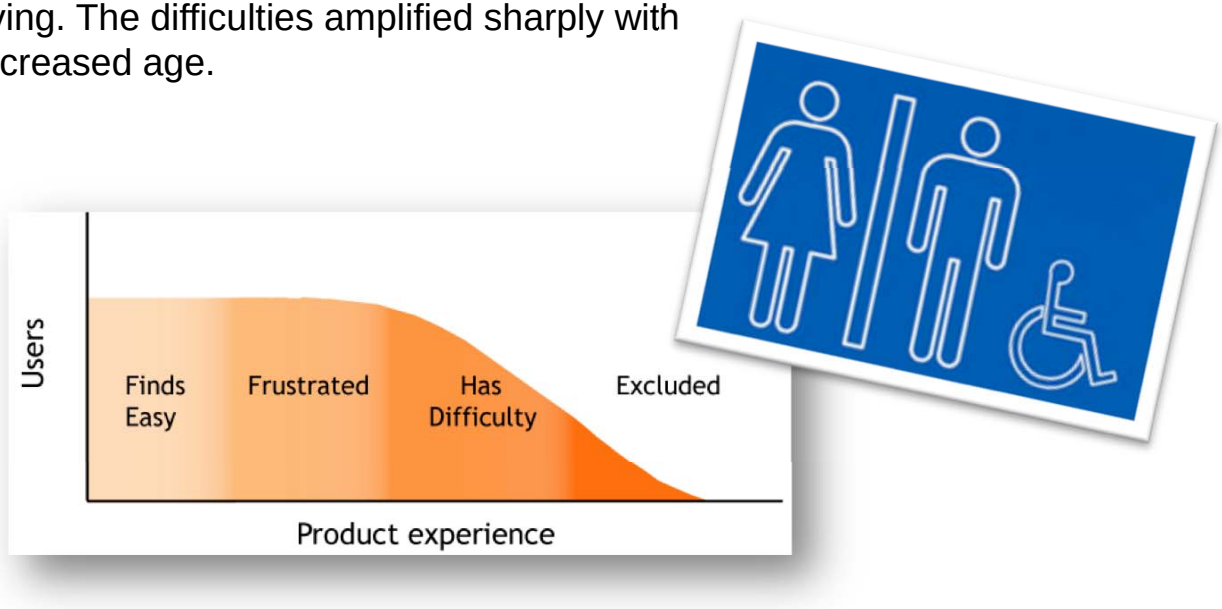
17.8% of the GB adult population have less than full ability in one or more categories. The GB adult population was 45.6 million people at the time of the survey.



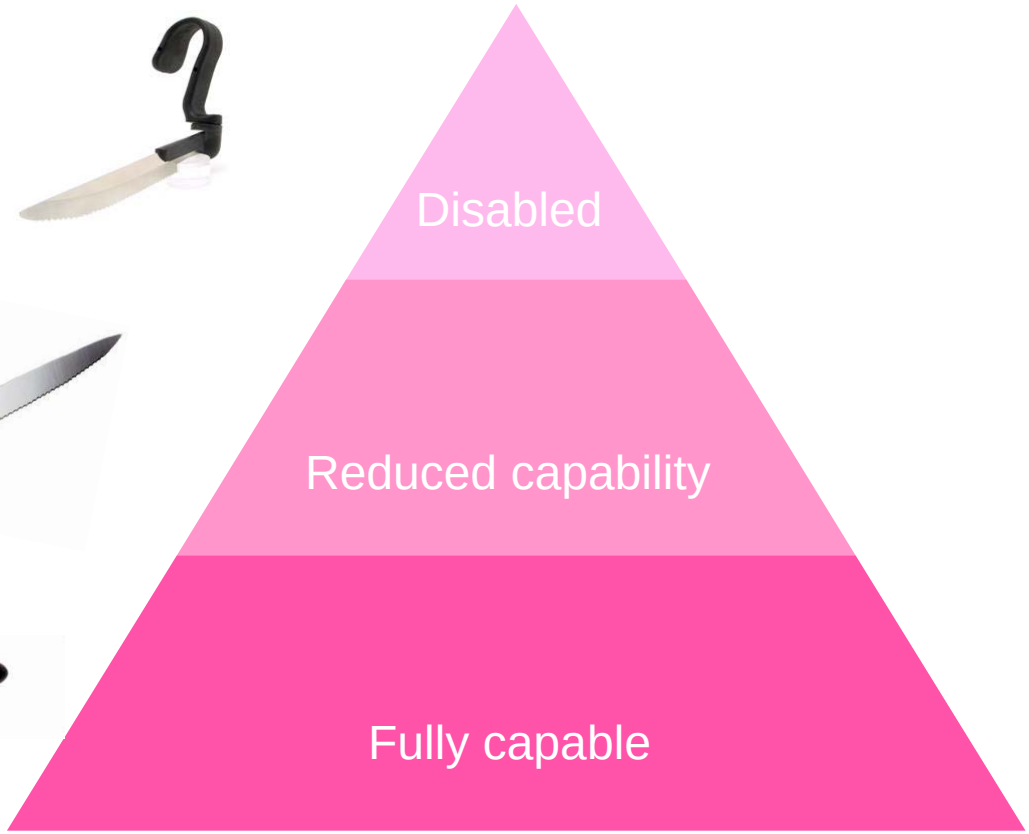


Inclusion vs Exclusion

According to interviews conducted with non-institutionalized individuals of 70-74 yrs of age, living in the US, as many as 50% felt that they had difficulties in performing activities of daily living. The difficulties amplified sharply with increased age.



The User Pyramid



Design Case:
Doro Care Electronics

Designing a Smartphone for Seniors

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Designing for seniors is…

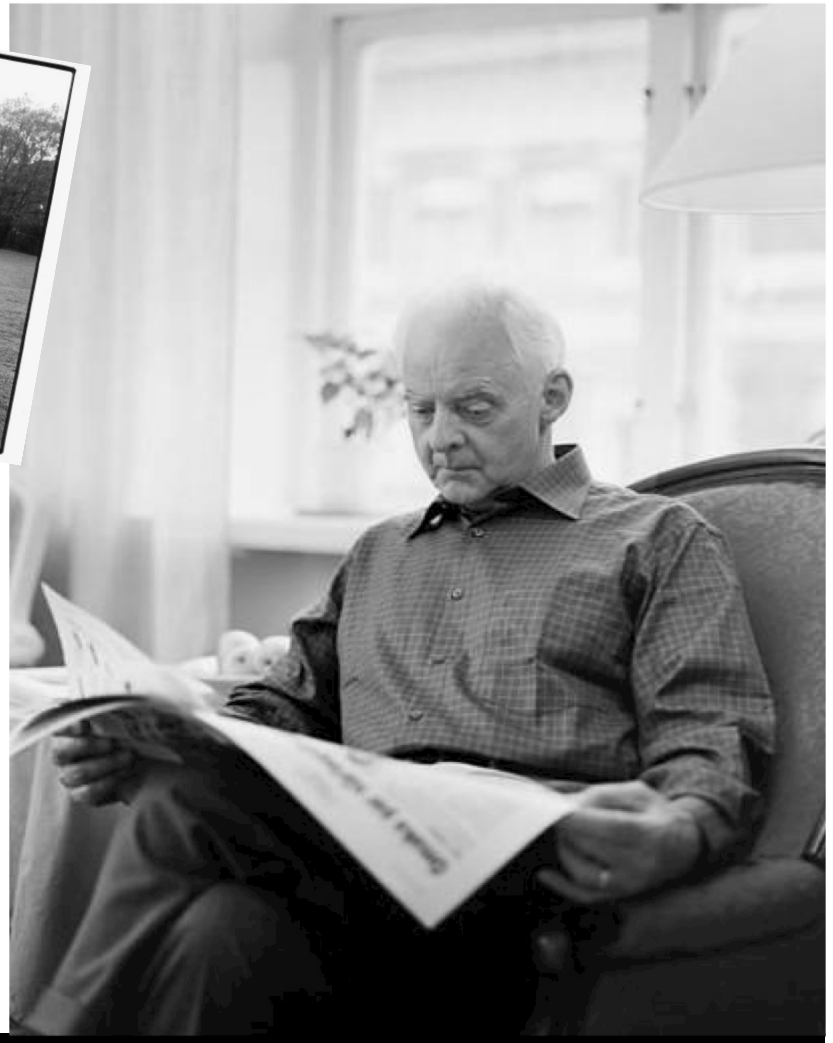
designing for diversity

”Stop putting us between 60 and 107 in the same basket thinking that we are all alike. We are all unique.”

***Tullia von Sydow**, former senior member of the Swedish Parliament*

Designing for seniors is…

to empower people



“There is no exact age when we become old”

*Professor **Bengt Winblad***

The philosophy of Doro Care is to empower people to continue doing the things they have always enjoyed doing.

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The challenge

How should a smart phone for seniors be designed?

The Process

Generating insights

Aim

Examine preferences among older users with regards to a touch screen and buttons on a smart phone.

User Interface Design

Test of touch screen - adapted interface

"Technology for elderly people", supported by The Ministry of Health and Social Affairs for The Swedish Institute of Assistive Technology (SIAT), 2011.

Test prototype with touch- and physical keys

The Process

Including active seniors

Test participants were recruited through the senior organization web site (PRO). 14 participants took part in the study (10 + 4), ranging from 60 – 89 years. Gender: 7 women and 7 men

The Process

Generating insights

In a pre-test interview users were asked questions about their **previous experience with mobile phones**. (e.g. main use of mobile phone and what is important to them)

- All users own one or more mobile handset. Most seniors have bought it themselves, in some cases with the help of their children.
- The most common use of the phone is to call and receive calls and to receive and send sms.
- Some seniors both send and receive mms or use the phone as a reminder.
- Only one had prior experience of a smart phone (Android).

The Process

Building prototypes for the user test

Our research led to valuable insights in how to improve the **usability and ease of use** of on a smart phone.

Prototypes with only touch, physical keys or a combination of both were developed and produced in collaboration with Doro.

The interface was created according to defined actions or modules that was initially ascertained as being important to test on the target group.

Prototype with touch screen - adapted interface

Prototype with touch- and physical keys

The Ergonomidesign team in the studio

Defined actions

The Process

Generating insights

Usability tests were conducted using a "**think aloud protocol".**

Users were asked to perform **9 tasks** with prototypes, to comment on and rate the functions.

Main actions were categorized into:
- React
- Act
- Navigate
- etc

Examples of sub - actions are:
- Browsing a list
- Choosing
- Move between fields
- etc

The Prototypes:

Prototype with touch screen

Physical keypad design

Combo with touch- and physical keys

The Process

Concept evaluation - 1.st example

Call

Tested elements were : Act & navigate, focusing on **making a call with touch.**

8 out of **10** were successful in completion of the task, 1 had some difficulties and 1 great difficulties.

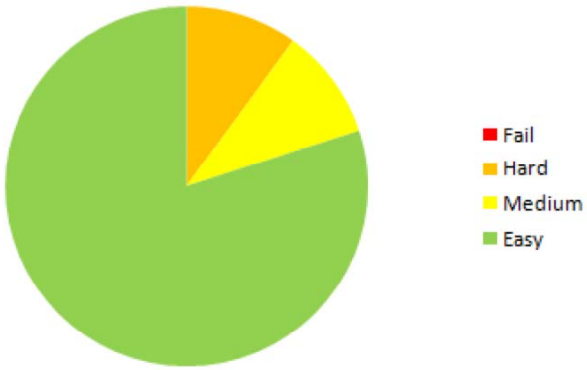


Fig 1. Effectiveness Task 1

User comments:

The Process

Concept evaluation - 2.nd example

Add contact

Tested elements: were: Act, navigate & react, with **focus on input on touch screen**

2 out of **10** were successful, 3 had some difficulties, 4 great difficulties and 2 failed in adding a contact to the phone book. The persons who failed could not use the touch keypad to write.

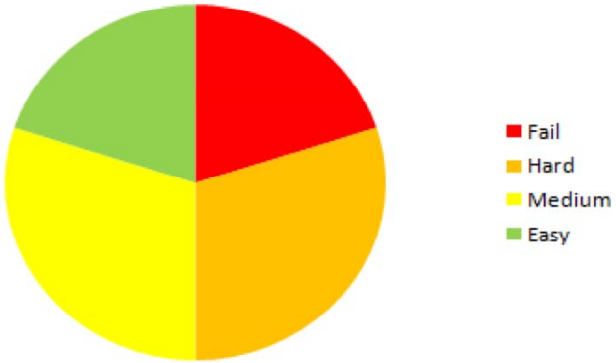
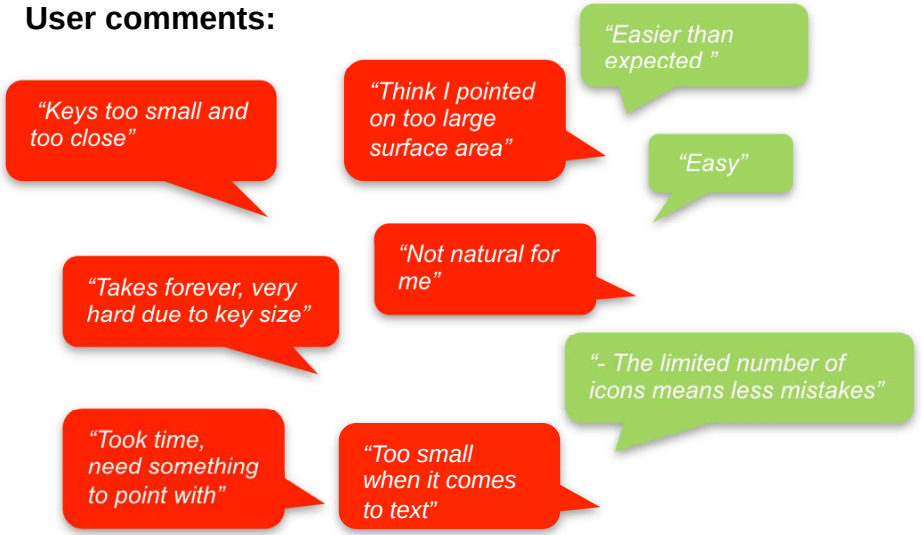


Fig 1. Effectiveness Task 2

User comments:



The Process

Expected and perceived usability

Touch

Users were initially asked to choose three words to describe the **initial reaction** to the touch phone. The aim was to gather information about **expected usability and perceived usability**

Spontaneous impression - all were interested and many thought it looked simple.

Considered impression - After testing they were still interested, but **confused** and the usage was **not as simple as they thought** prior to using the prototype.

Spontaneous impression

In order of size: Interesting, Simple, Curious, Technical, Exciting, Hesitant, Fun

Considered impression

In order of size: Confusing, Interesting, Exciting, Fun, Technical, Difficult, Complicated, Simple, Curious, Hesitant,

The Process

Expected and perceived usability

Combo

The users were also asked to choose three words to describe the combo phone.

Spontaneous impression - all thought it looked **simple**

Considered impression - Still simple but most of all **fun**. No negative comments.

Spontaneous impression

Considered impression

The Process

Expected and perceived usability

Touch vs Combo

Spontaneous impression for touch and combo – left column

Considered impression for touch and combo - right column

Overall the considered impression is by far more positive for the combo phone

Considered impression /touch

Spontaneous impression /combo

Considered impression /combo

The Process

Touch screen usability

Touch

Most users had initial problems getting the right quick touch. After some practice most of them had no problems with the big touch areas.

On the negative side **all users found the soft keys too small for writing,** which meant many mistakes. They pressed the wrong ones or pressed them too long, etc. One man tried to use his fingernail to hit the keys.

Touch prototype

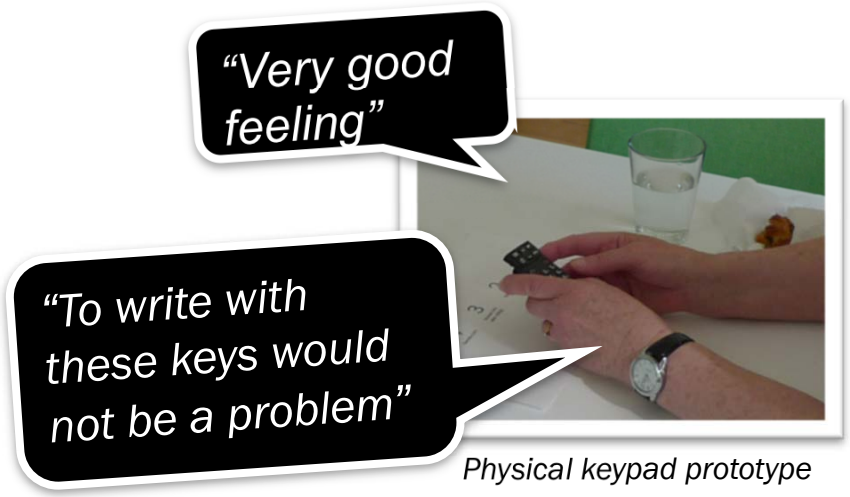
The Process

Physical keypad usability

Physical keypad

The users found the physical keypad design very good and solid, with well separated, easy to see keys.

Well separated keys means you don´t press more than one button at a time.



Physical keypad prototype

The Process

Combo usability

Combo – touch & keypad

Most users thought a smart phone with physical keys would make it easier and that it gives a good option : -"*To have this opportunity will help".*

Using the physical keypad results in **better accuracy and fewer errors** , hence less frustration!

Some thought they would start by using the physical keys or they would try with touch but definitely use physical keys for SMS and to phone people who are not in the phone book.

The Process

New smart devices - Insights

What´s in it for me?

Many older people are quite curious of new smart devices – but only if they´ve seen some usage that would benefit their life and needs.

When asked how they think this kind of phone would change how they use their mobile phone, they said they were convinced it would ease and that they would do more things, like internet, and use more frequently.

Furthermore it will help keep up with the times and that a standard mobile phone cannot provide the range of services as a smart phone.

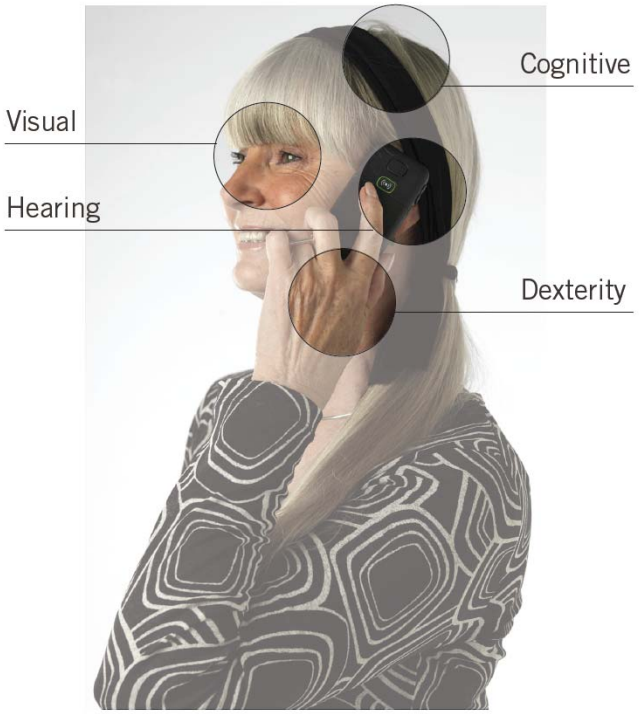
The Design Process

Insights + inclusion

The research led to valuable insights in how to improve a new smart phone for seniors. Those insights were directly translated into the design process.

Doro´s target group range from 65+ - 100+ , both female and male, spread all over the world.

Doro´s four most **common impairments** within the target group, as the core for the development process, are visual, hearing, dexterity and cognitive impairments.



Source: Doro´s Product Identity Guide Line

The Design Process

Insights + inclusion

The new smart phone focus on the highest tech part of the target, **Modern and Functional.**

When it comes to **expression and design** we focus on the youngest seniors for expression, look and feel – to attract as wide audience as possible.

Functional

Modern

Insights + inclusion

= innovation

A new smart phone for seniors

The new innovation combines a touch screen with a physical keypad.

The design allows navigation and selection both by using the touch screen and by using the actuator.

The graphical user interface is configured so that the icons are ordered in a linearly list with large touch areas.

The sliding keypad provides an ergonomic solution with hard keys to support and ease writing.

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Thank you!


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