

# Uppie



Living independently is an essential part of growing up and life, that either one of us has to adapt to individually at some point. It is considered a fundamental quality of adulthood and yet after passing a certain age, the older we get from that point the less independent we become.

This has enormous effects on the mental health and confidence of the individuals confronted with it. It can feel like you yourself have become a burden for relatives and society.

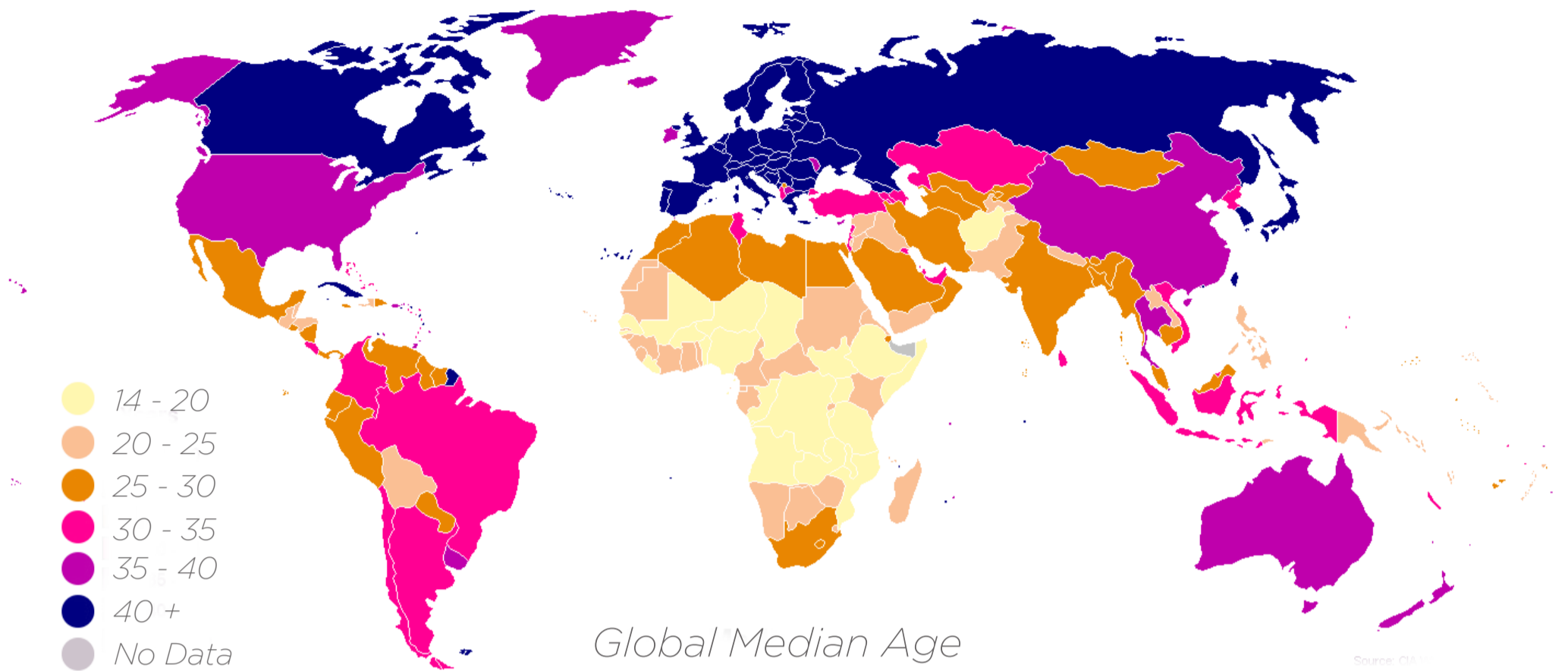
When ageing various conditions and the lack of physical activity limit physical ability of elders. This often leads to deterioration of muscle mass and strength, resulting in the inability to stand up or squat backwards steadily.

Elders are often confronted with the fear of falls especially when by themselves, as they are the cause of many bone fractures and subsequent deaths.



Introducing Uppie, a space efficient, cost effective and modern stand-up help, designed for elderly people with physical limitations. The frame is adjustable, fits onto any toilet bowl and the lift uses state of the art technology.

Uppie is designed to give a sense of security and independence when visiting the bathroom, so elderly and their relatives have more peace of mind.



As a result of the Baby-Boom after WWII the western society is undergoing fundamental, demographical changes in recent years, causing the population pyramid being turned upside down. This means that within the next 20-30 years our population will be getting older on average until we reach the peak at which the generation of elders will be so large that there are not enough young people to take care and provide for them. This development is creating a need for domestic aids in order to enable independent living for elderly people.

Research into elderly lifestyles has shown that the bathroom is the most hazardous room in a household. Considering the nature of a bathroom - a sterile, water related room, resulting in hard and slippery surfaces - it creates a dangerous environment for people with limited physical ability. Falls are considered the beginning of the end from an elderly person's point of view, as they occur frequently - a majority of which result in severe fractures of hips or limbs - leaving elderly unable to recover, as they lack capacity to do so.

## Social

- Baby-boom after WWII
- Retirement homes are not desirable
- Toileting = taboo topic
- Users do not like medical aid look

## Technology

- Smaller/ stronger/ faster hardware & mechanical components
- cheaper electric/ mechanical components
- most existing solutions created between 1970-2000

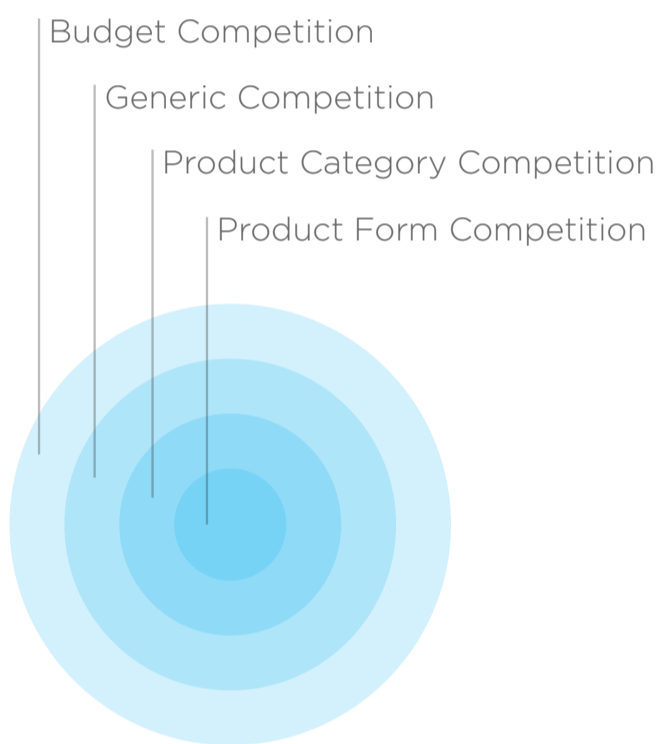
## Product Opportunity Gap

"A modern, desirable, affordable toilet-aid, with compact product architecture to ensure bathroom environment integration."

## Economic

- New Blue Ocean markets emerging
- Disposable income becomes less
- Less financial contribution by insurances & government

# Analysis



Solutions to these problems exist, but unfortunately they come with a certain stigma attached, a sizeable price tag and are enormous in size. Many toilet environments throughout northern Europe cannot fit such solutions and even if they do users are left with a hole in their wallet and an object of disfigurement in their bathrooms, for every visitor to see.

I set out to change that and given these circumstances formed the design criteria for this project, which formulate into three core pillars:

**Affordability** - low manufacturing cost

**Efficiency** - space management

**Esteem** - no product stigma



# Concept



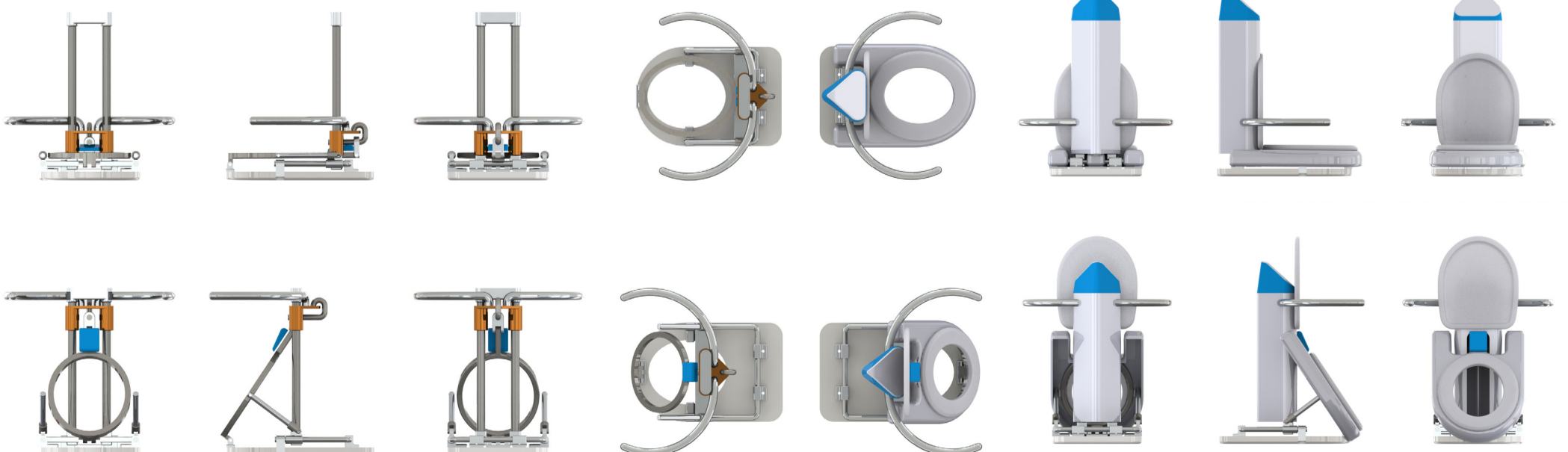
After ideating numerous possible solutions, it was time to converge everything into three usable concepts of which one was chosen for further development. This concept is a works similar to a 3D-printer and uses stepper motors, threaded rods and rails to make the individual parts move in correlation to each other.

It is a retrofit and has been designed so that it can fit onto any toilet bowl following the ISO standards, by providing movable and adjustable mounts to compensate for different bowl sizes and wall thicknesses.

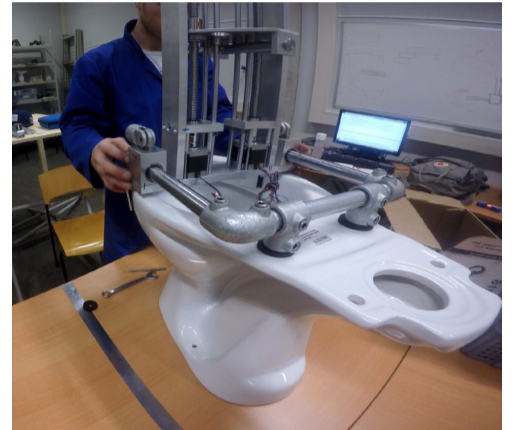
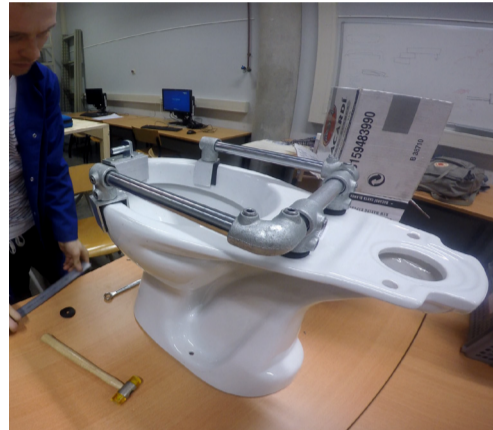
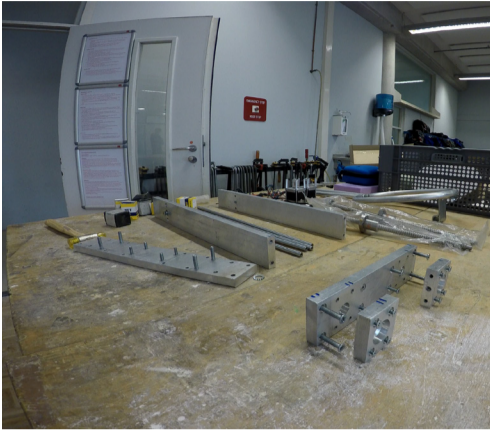
It also features handle bars which form around the user to ensure increased stability in case of imbalance and a small cushion that provides impact damping in case of abrupt descent.

Important to note here is that the handle bars travel with the user while the cushioning folds away or appears when the mechanism is activated.

After creating the basic mechanisms and functions of the concepts, it was time to proof the concepts by means of a prototype.



# Prototyping



After the successful prototyping of the concept the conclusions on next steps and refinement were clear: Every single part of the prototype has to be streamlined, as thicknesses of materials have been exaggerated on purpose to ensure structural stability, which increased the weight and cost of the prototype.

After reduction the manufacturing cost of the product stands at 1/10 of the average retail price of existing solutions. With further refinement it is possible to introduce this product to the market at 1/3 of the price its competitors are offered at.

This solution provides a safer and more joyful experience, fits into every bathroom and onto every toilet bowl - guaranteed.

This project has been developed for a client as my graduation project and is currently undergoing further iterations of the prototyping stage in order to refine materials/ mechanisms, streamline and reduce manufacturing cost even further in order to ensure a successful market introduction and acceptance. The final product is expected to be launched mid 2018.

