

iCare - Speculative Design Pictorial 2021

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ABSTRACT

In this paper, we offer a new innovative device for childcare. Our smart stroller is a combination of a regular baby stroller and a multi sensor, health tracking device that the caretaker has full control of.

The motivation for designing this device is the need for parents to continue with their intense career while wanting to stay close to their babies and be the main caregiver during the day.

With major technological advancements over the past years and the accelerating growth rate in many technological fields, we argue that manufacturing this device is feasible.

Author Keywords

Baby Care; Kids Tech; Health Tech; Smart Device, HCI.

CSS Concepts

- CCS: Human-centered computing ~ Human computer interaction ~ HCI theory, concepts and modelsteraction (HCI)
- CCS: Human-centered computing ~ Interaction design ~ Interaction design theory, concepts and paradigms

INTRODUCTION

We designed the best technological device for parents who would want the best for their babies, best environment, best educational content and best health monitoring. The need for this device is grounded on the sense that both parents want to pursue their careers and fulfill their personal dreams while maintaining a major part in raising their children [1].

CHANGES IN THE PAID WORK-FORCE

In Europe, there has been an increment over the past decade in women's participation in the paid work-force and in the number of highly educated women, alongside a decrease of real income [2], these trends shift women from traditional jobs such as home education, care-giving and other domestic jobs into the paid work-force.

WORK-LIFE-BALANCE

Over the past decades a major trend is taking place across modern society where people are striving to achieve work life balance (WLB). WLB definition was stated by the Work Foundation as: 'Work life Byrne: Work-life balance 55 balance is about people having a measure of control over when, where and how they work. It is achieved when an individual's right to a fulfilled life inside and outside paid work is accepted

and respected as the norm to the mutual benefit of the individual, business and society'. [3] Individuals are now trying to juggle between work, family, friends, health and self. This phenomenon is much greater than in past years. Our parents are used to working in one career, in one workspace and with strict daily hours, where now young adults seek much more freedom and control of their professional lives.

RAISING YOUR OWN KID

Raising and educating a child is very hard and demanding work, many parents find help with this job with other family members such as grandparents, friends and paid babysitters and nannies.

Because discipline and values are fundamental in parenting and it is very complicated to obtain the parents intentions with an external caregiver, many parents try to raise their child as long as they can, usually financial and career reasons are the ones that make the parent send the kid to an education facility such as kindergarten and pre-school.

TECHNOLOGICAL ADVANCEMENTS

Over the past two decades There have been technological advancements in every field around us, and this vector is getting bigger and faster [4]. Major technology fields that are incorporated in our design are:

- AI and data analysis
- mobile computing power
- high definition video and audio
- autonomous robotic navigation and movement

alongside these fields, there is an increase in the deepening of automation which makes production of technological devices more affordable and thus more suitable for the general public.

RESEARCH OBJECTIVES

In order to understand where technology crosses the line of replacing human jobs we designed the perfect caregiver robot. Our research objective was to produce a perfect technological companion that will make the reader think whether this tech device is good or bad. We aimed for a design that will fall exactly between the “wonderful” and “harmful” in order to raise the reader's thoughts.

The questions we raise are:

- Who will be raising our kids?
- How far until we will automate our most basic job of parenting?
- Is it possible to stop technological advancements?

RELATED WORK

Our field is automation and intelligent baby caring technology. For decades we have tried to improve the way we care for our kids, automate tasks and gather information which can help us improve parents lives and their babies lives as well. In the last few years we can see a penetration of computing and robotics to our baby caring products in various categories. We gathered some examples of current products in the field. Smartbe, an

intelligent baby stroller [5], multifunctional and self-propelled to make parenting easier. Nanit baby monitor that lets you track sleep, breathing motion [6], and growth. Owlet, a smart sock, allows parents to track their baby's heart rate and oxygen while they sleep and get notifications if the baby needs to be checked on [7]. YouTube Kids which provides a more contained environment for kids to explore and makes it easier for parents and caregivers to guide their journey [8].

SPECULATIVE RESEARCH

EXPLORATION THROUGH COLLAGE

In our collage we tried to show and explore the world with such devices being part of the norm. In our collage you can see a bar where a group of friends hang around and enjoy life while taking care of their newborns. At the same time the bartender is working and also taking care of her own child. Each parent is wearing a smartwatch that shows his/her baby. We tried to show that parenting with such a device can allow full freedom and flexibility for parents from working with their child next to them to hanging around with friends and being close to their child at the same time.



Figure 1. iCare Collage

SPECULATIVE SOCIETY: POLITICAL SPECTRUM

Our society is driven by capitalist forces meaning that the individual is all that matters, its physical and mental wealth and its personal growth over society and community. It doesn't mean that there is no community and social life, it's just that every person is trying to maximise himself and his interests.

On the vertical axis we can see that our society is with a libertarian tendency. This is because all genders are equal, in fact there are endless types of genders all across the scale. This creates a family cell where both parents are equal towards society and share all responsibilities of the household.

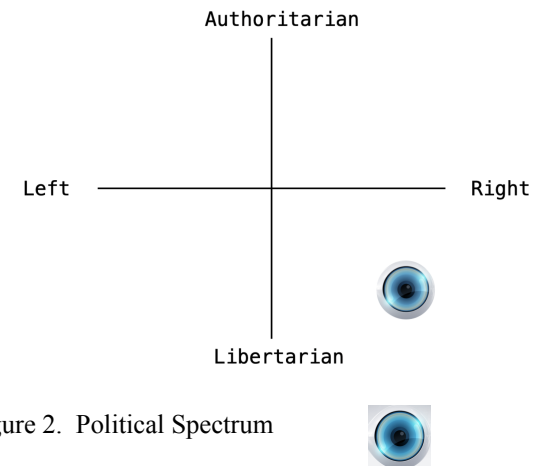


Figure 2. Political Spectrum

SPECULATIVE DESIGN PROPOSAL

We introduce a new kind of product, a combination of all top of the line solutions of child caring including monitoring, feeding, education and transportation of babies. Our device is a new type of two wheel balanced vehicle that can be sealed completely or be opened to its surroundings. The device provides a comfortable and safe environment for the child while taking care of everything. The glass dome cover contains a transparent 3D touch display that can become completely

transparent with a gentle tap on it. When the child is inside he is in a closed and protected environment which can be completely modified, from temperature, sound, humidity and more. It has multiple cameras, microphones and sensors in order to monitor everything around and about the baby such as oxygen level, heart beat, sweat, movement, cry and more. Together with an advanced AI technology we are capable of providing precise interpretation of the babies wants and needs. This device contains a personal assistant technology such as Siri/Alexa to talk to the child and teach him/her everything about human to human interaction. This device can be personalized from inside and out. It comes in a variety of colors and can have multiple settings and 3rd party apps that can be installed in order to focus on each parent's preferences. The device is controlled by the parents using its mobile app, allowing live monitoring, video interaction, speaking, choosing what to focus on and more.



Figure 3. iCare design

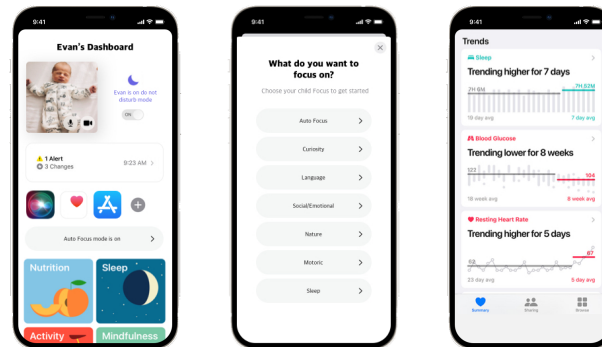


Figure 4. iCare Mobile App Interface



Figure 5. iCare 1/32 Scale Model

DIEGETIC PROTOTYPE VIDEO

In the following video we are presenting iCare, our device as its apple's latest innovation. We explain and show everything about its design and capabilities as similar as we could to the way Apple would in one of their keynotes like they do for each new device. We chose Apple as its number one brand for technology and its ability to change the way people live again and again by introducing new technologies and devices to the public.



Figure 6. iCare Concept Video

DISCUSSION

As technology and automation evolves and become an integrated part of our life so it does with our children. We are using technology more than ever before to help us with minor tasks and big tasks, education, entertainment and monitoring of our children. As this happens we tend to give more and more responsibility and time to technology. In our current lifestyle we see numerous times which parents are allowing technology to take over the task of raising their children. How many times each one of us has seen a child holding an iPhone/iPad? We use baby monitors to take over the basic task of looking at our kids. We purchase fancy robotic rocking chairs and beds to relax our babies and more. iCare is one of these devices that offers everything to parents and children together, it allows parents to have full control while having full flexibility to obtain their rich lifestyle (work, family, friends, health and self). And at the same time it allows children to have a safe environment to grow and develop, to be close to their parents, to have endless educational content and monitoring of progress. This device is great but also raises some questions like: Will technology eventually take over the entire task of raising children? Who will be raising our kids? How far until we will automate our

most basic job? Is it even possible to stop us from getting there?

CONCLUSION

We think that current technology is bringing a different kind of parenting, which allows parents to keep the balance between their priorities together with caring, educating and raising their children. Current technology and near future advancements will be so convenient, good and affordable that it will become harder and harder to adopt. The border between parenting and letting technology parent our children will become more and more unclear. Using iCare we tried to show where technology is heading, how amazing it could be, but moreover raise questions about its implications to the next generation and the basic job of raising children.

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