
SafeCircle : A Child Locator for Travelling Parents

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Abstract

The purpose of this study is to identify a new connection style to facilitate communication. Following studies about the relationship between parents and children on the move, the proposed solution idea — *SafeCircle* — suggests an alternative approach for taking care of child, providing freedom for both parties. Meanwhile, it will reduce the risk of children becoming lost. So, it eliminates unnecessary and stressful activities to locate a lost child. As a result, the meaningful and intentional *SafeCircle* concept aims to create a positive experience for both parents and children whilst travelling. *SafeCircle* also facilitates communication between parents and children when they stay within a prescribed distance from one another.

Keywords

Designing interactions, user experience, connection, mediator, lost child

Introduction

Connection is the indispensable part of our life. Everything in this world somehow is connected. It is connection that drives the development of many devices and objects over time. Human beings understand that connection with objects is needed to improve the quality of their life. Accordingly, it can be said that through history the advent of new devices has been mainly related to human needs. Human beings use these devices or objects as tools to meet their needs and two demands. In other words, these objects around us are tools to get to certain goals, but not goals in themselves.

In many cases, mediators (usually in the form of products or services) are created to provide connections between different users in order to achieve specific user experience goals. It can be considered that users interact with each other through connection. In this respect, connection directly affects quality of interaction between users. In response, the type of interaction influences the quality of experience. Accordingly, reaching a desirable experience requires defining a purposeful and meaningful interaction.

User experiences with objects are shaped through interactions (Desmet & Hekkert, 2007). With this respect, 'designing interactions' as an activity has developed in recent times for new concept-level design, with the intention to create novel and positive experiences (Moggridge, 2007; and Saffer, 2007). Accordingly, this study focuses on the 'interaction-based product experience' issue.

Description of SafeCircle product concept

The concept of *SafeCircle* is based on observation and understanding of how a modern family's members communicate with each other. The aim of the project is to explore and create a new product concept to facilitate communication. By focusing on interactions between parents and their children while travelling, a design opportunity has been identified, framed and responded to.

The National Center for Missing and Exploited Children (NCMEC) reports a statistic that approximately 800,000 children (younger than 18) disappear each year (over 2,000 children a day) because of various reasons. The report announces for an urgent need to address this problem. Keeping children connected while traveling and shopping during holiday periods has been one of the concerns of the NCMEC. On November 9th 2009, NCMEC stated that "crowds are greater this time of year and children may easily become separated from their parents, causing confusion and fear. If that should happen, parents need a plan and children should know what to do". NCMEC aimed to "remind parents not to let their guard down or be distracted while traveling" in order to avoid panic and potential dangers. However, the question arises as why traveling with small children has become an activity requiring too much parental attention and leads to stressful journeys and unpleasing experiences. Accordingly, the challenge of this project is to identify a mediator to facilitate connection between parents and their child whilst traveling, with an intention to create a positive experience for both parties.

Based on the role of connection within the context of communication, the effects of connection and disconnection between parents and their children are studied. It is believed that ignoring the constant connection would depress communication among parents and children. Disconnected children psychologically feel left out of the parents' support — with such support being critical in building positive experiences. Connected children are very pleased about being a member of the family and they feel they are an important and integral part. Even in tough and stressed times, the sense of connection helps children to not lose their self-confidence. This study examines how we might initiate remote communication using nonverbal cues commonly

found in face-to-face communication. The authors present a concept, *SafeCircle*, for initiating mediated communication through eye and sound contact. *SafeCircle* is a physical mediator of a remote individual that senses and conveys attention using facial gestures and alert system. Users, especially a child, may stay in touch emotionally by carrying an object that shares visually similar characteristics and semantic values to a parental figure (Figure 1).

The proposed *SafeCircle* may facilitate the use of traditional or socio-cultural rules for keeping children in touch. For example, parents tend to take a child's hand constantly when they go out, which is against the child's nature to explore and be independent and prevents building of the child's self-confidence.



Figure 1

There are some existing solutions consulting parents to locate their missing children. However the *SafeCircle* provide parents with constant connection with their children. By giving information on the child's location, *SafeCircle* can be considered as a mediator that provides an invisible connection between the parent and child. The suggested concept reviews the stressful attentions of parents taking over their children. This kind of behavior limits their activities, and contributes to the unfortunate situation where children are seen as a 'burden' for modern and young families on the move.

SafeCircle symbolizes parents' attention and connection to their small child. During travel, small children require continual observation. The case when a child is lost requires immediate action. *SafeCircle* addresses the need for urgent access to the child by showing the parent in which direction the child may be found.

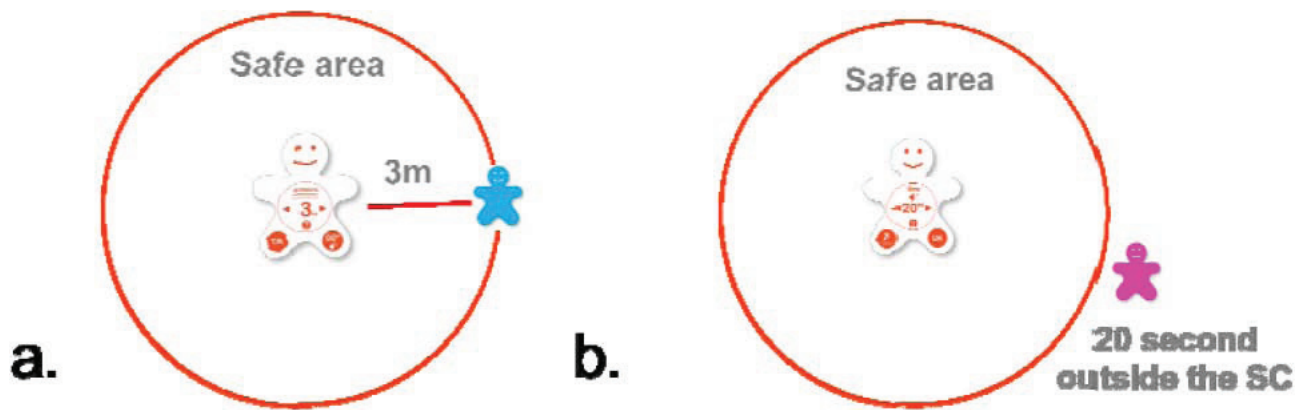


Figure 2 : Adjustment tasks of SafeCircle

Functional and expressive attributes of SafeCircle (sc)

The visual properties of sc-Child are the same as sc-Parent. The visual characteristics and personality of the *SafeCircle* devices represent a happy family. Based on the parent's common responsibilities and child's natural manner and behavior, tasks are applied to sc-Parent and fun attributes to sc-Child. Moreover, in order to avoid children abusing the device and seeing it as a toy, sc-Child has no adjustable functions. Considering the child's colorful world, the surface of sc-Child with its changing colors gives a fun characteristic to the device and also makes the device more adorable (see Figure 1).

It is necessary for traveling parents to define an area (radius) within which they think it is convenient for them to easily track their child. Usually, the nature of the environment is a critical factor in defining an appropriate safe area. Accordingly, the 'distance' between parents and child, together with the 'period of time' that child stays outside of this distance, are taken into consideration for the functionality of *SafeCircle*.

Considering a stressful moment when a child is out of the parents' sight, *SafeCircle* is conceived to be mastered very easily. So, the design of the interface and the usage scenario is planned to be simple and easily understood. The first function in using sc-Parent is to define the distance between the parent and child. The intended distance is defined according to the situation and context of use. For example, a distance less than 3 meters can be applied to very crowded areas (Figure 2.a). The second accompanying function is to define the period of time that child is allowed to stay outside of the intended distance. For example, this time can

be limited to 20 seconds in a crowded environment (Figure 2.b). When the child runs outside the safe area and exceeds the set time, sc-Parent device starts to give an alert. The goal of *SafeCircle*'s alert system is to instantly galvanize the parents to assist in the search for, and safe recovery of, their child. To assist this, the arrow on the main screen of sc-Parent shows in which direction the child may be found. To do this, a transmitter-receive module will be implemented into the *SafeCircle* devices to provide tracking.

Conclusion

Within the context of communication, people use several physical mediators to achieve their goals. Sometimes not being in contact with a beloved one causes people to feel frustrated and negative. This paper investigated a problem that parents can face when they travel with their young children. *SafeCircle* offers an digital assistive approach for child minding, providing freedom for both the parents and the child. Unlike conventional experiences when traveling with children on the move, parents who use *SafeCircle* are intended to feel less worried about, and more emotionally attached to, their children.

This concept can be applied to different cultures and conditions. For example, India may be a potentially strong market, where considerable numbers of children are lost everyday (NCMEC). The solution ideas that we have suggested provide a realistic and achievable response to a problematic situation by today's parents.

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