Mary Ellen Foster
School of Mathematical and
Computer Sciences,
Heriot-Watt University
Edinburgh EH14 4AS
United Kingdom
M.E.Foster@hw.ac.uk

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C.5.3 [Computer system implementation]: Microcomputers—Portable devices (e.g., laptops, personal digital assistants); H.5.2 [Information interfaces and presentation]: User Interfaces—User-centered design.

The core function of a baby tracker such as the award-winning itzbeen [1] (Figure 1a) is to help sleep-deprived caregivers to track the repetitive, time-consuming tasks involved in caring for an infant or a small child, including feeding, nappy changing, and sleeping. In recent years, the increased popularity of smartphone apps has negatively affected the use of standalone devices including digital cameras, MP3 players, and GPS receivers [2, 6, 7]. A number of smartphone apps provide similar facilities to the itzbeen, including the highly-rated iPhone app Total Baby [3] (Figure 1b). I compare these two baby trackers from three perspectives: functionality, user interface, and other considerations.

**Functionality**
The target user of an itzbeen is a carer who needs an instant snapshot of the current state: it provides individual timers for nappies, feeding, and sleeping, reminder alarms for all timer types, along with a mechanism to track the last nursed side. In contrast, the primary emphasis of Total Baby is on storing and...
managing data: while it provides the above “snapshot” features, it also supports persistent storage of all timer data (including user annotations), the option to add photos, diary entries, and medical information, and a variety of ways to transfer, back up and export the stored data. Data storage can be an extremely welcome addition to this sort of app: for example, it can be used to help detect emerging feeding and sleeping patterns, and also to present the data to healthcare providers if necessary.

**User interface**

Baby caregivers, and nursing mothers in particular, have a number of very specific user interface requirements; the considerations listed by Robertson [8] include the need for a one-handed interface, quick configuration and start-up, and simple operation. Since the itzbeen has been designed specifically for this use case, it it particularly well-suited to this target population, including instantly accessible, one-touch timers, and display lighting optimised for use in a nursery. In contrast, Total Baby uses the standard touch-screen controls of an iPhone, meaning that checking the app state or controlling a timer often needs several touches along with careful visual attention.

**Other considerations**

In addition to running baby tracker apps such as Total Baby, a smartphone also provides many other functions that can be useful when caring for a small child, especially when breastfeeding. For example, it can allow a nursing mother to check and to browse the web. As the child gets older, some carers also let them play with a phone as a toy [5]. However, recent studies do suggest that young children should be exposed to a minimal amount of screen time [9]; also, while the general indication is that the radiation from mobile does not pose a significant risk to children [4], there is still no definitive word on this matter.

**Summary**

Both the itzbeen and the Total Baby app provide the same basic core functionality, and either is a useful tool for a carer. The app provides significantly more data storage and summarisation functionality; however, the user interface of the itzbeen is directly tailored to the particular needs of the target user group. In practice, users who already make significant use of a smartphone will probably opt for the app-based tracker, as would those who want the additional data management capabilities. On the other hand, the dedicated hardware would appeal more to those who make lighter use of smartphones, and those who particularly want a dedicated solution for the “snapshot” use case.

**References**