

Make Of It What You Will

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For the 1939 New York World Fair, General Motors produced a promotional film starring Roll-Oh, a remote controlled domestic android. This robotic servant was capable of performing a variety of mundane and menial household tasks. Its owner is shown in various scenes commanding Roll-Oh, at the touch of the button, to carry out duties such as 'Make Bed' and 'Get Dinner'. Ultimately the film reveals its commercial incentive as a showcase of emerging switch and relay technology for motorcars. Yet in doing so it also represents a future in which robots take on humdrum domestic responsibilities, thereby 'freeing' owners from their everyday chores.

The vision of the automated home can be understood in relation to the pursuit of engineering and aesthetic perfection. For example Le Corbusier conceived of the future home as a 'machine for living'. This concept has informed many ideas of what a 'smart home' should be: a technologically advanced dwelling, built from scratch, which caters for its occupants' every need.

However the vision of the unitary smart home is a fiction. The reality for everyday households is that technology is introduced piecemeal. Most homes have a legacy of existing infrastructure, from the configuration of the walls, windows and entrances to the location of the electricity, water and gas supplies. Therefore we tend to incorporate new machines, devices and services separately, and not as integrated systems. Products such as washing machines and televisions are added or replaced in line with their lifecycles,

while new services such as Internet connectivity are often introduced through existing utilities.

Taken individually, these technologies embody engineering excellence, continually improving, becoming faster, better and cheaper with every generation. However, if we consider these artefacts as contributing to the home's 'taskscape' (to borrow a term coined by the social anthropologist Tim Ingold) then the improvements in these technologies do little to change the kind of world they portray.

Even 15 years ago, for instance, it would have been difficult to imagine single device that could store and play an entire record collection. While many such machines now exist, functionally, they only perform the same task as an entire record collection. It is just that the physical media has shrunk away – and it could be argued that this removes much of the joy of owning such a collection. The technology has changed, but the taskscape – and the values it reflects and reifies – has not.

More recently, future forecasts have moved away from ideas of physical automation, and focused more on the possibilities of the disappearing computer – aligning the prospects of the future home and Ubicomp. For example, Georgia Tech's Aware Home and HP's Cooltown both feature technologies for tracking occupants. This can amongst other things facilitate smarter household management or be used to monitor and assist at risk groups. However, the basic idea of domestic automation 'freeing' the home dweller remains. In many ways the smart home is no different from Roll-Oh, it sees household activities as tasks or problems that can be solved, allowing the inhabitants more leisure time to participate in the activities that they really want to do.

While visions of the future home repeat past preoccupations with labour saving technologies, a genuinely new feature of the present is that our homes have become steadily more connected to the outside world. From the dense spectrum of radio data that surrounds and permeates the home to the World Wide Web, the volume of the information that we can access is almost immeasurable. Technology has also given us the power to instantly communicate on a global level. However, while many new designs take advantage of this connectivity, there are few that reflect changes to, or indeed allow us to explore and play with the potentially transformed taskscape itself.

In the Interaction Research Studio we design and build prototype devices that embody new ideas of how digital technologies might be used in the home. Two such devices are the Plane Tracker and the Local Barometer. Each uses novel forms of connectivity to capture and blend the data space in and around the home. Both are designed to be non-didactic and further an understanding of the domestic connection to the wider world, one globally and the other locally.

The Plane Tracker is a device for homes situated near flight paths or airports. Airplanes continuously transmit information about their journey, and these signals can be captured and decoded from aircraft passing over the home. The Plane Tracker uses flight numbers from this data to create the imagined routes of individual flights, shown on screen as aerial imagery (retrieved from the Internet) that flows smoothly from origin to destination. As you watch, you are able to vicariously experience the flights from the comfort of your front room.

The Local Barometer is a system that seeks to provide people with a sense of the sociocultural texture around their homes. Localised information such as classified adverts and news items are culled from the web depending on the local wind direction and speed and displayed on small-scale screens scattered through the home. The strength of the wind dictates how far the system reaches for data.

Neither of these devices is designed to have a utilitarian function. Instead, we wanted to create a situation in which the prototypes are non-instrumental. Because we withhold a definite narrative of use, the potential of the designs is not complete until people use them. In order to realise this, we lend our prototypes to volunteers for long periods in order to study how they are used.

Initially, our volunteers can be confused about the exact purpose of these non-problem-solving devices. However over the period of the field trials people begin to find ways to make the prototypes meaningful to them, developing an understanding of the role of devices in their home and their environment. The Plane Tracker for instance highlights air travel, an issue about which different people (e.g. frequent travellers, environmental activists, plane spotters) might have different opinions. In some people the Tracker spurs wanderlust, while in others it raises concerns about the environmental impact of air travel.

Similarly, the Local Barometer allows interpretation on numerous levels. Depending on the strength and direction of the wind, the information displayed on the screens could be from households on the same street or from up to a mile away. Over time one volunteer became so in tune with the patterns of information the system provided that he became highly aware of local weather fluctuations. Because each of these devices provide new views of the world from

one's own home, the things they draw attention to have personal impact, allowing interpretation of device in relation to the home's specific circumstances.

Smart homes and devices can and will help solve domestic problems, but technology can offer new possibilities as well. The purpose of our research is not to define exactly how commercial products should be; instead we see our prototypes as material statements about the kinds of engagement people might value. Key to the experiences they offer is their openness to interpretative appropriation. We believe that, just as the worth of record collecting is related to the personal care and effort put into it, so will the value of interactive designs depend less on the stories they tell, and more on the stories you can tell with them.