

The "Home of the Distant Present"?

What understanding of domestic life is required by "smart homes"?

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Introduction

A prime locus of talk about ubiquitous computing of recent times has been 'the home'. In this position paper we want to reflect a little upon the implications of this interest and the current focus upon 'smart homes' [1][3][4]. In particular we want to ask what the "smartness" of a smart home must entail?

It would seem that current conceptions of how homes may be made 'smart' are very wide of the mark if one attends closely to how people actually order their affairs within their homes. Designers and technologists focused on 'the home of the future' can frequently be found attending more to technical possibilities, making assumptions about future domestic setups. What is often absent from these schemes is a consideration of how homes are organised now, just what that organisation actually turns upon, and what features of this might remain stable for the future. It is our view that one's starting point should be an attention to people's *ways* of organising: these are the very things that, whilst open to change, will also prove to be most resilient, because of their centrality to the maintenance of an orderly and recognisable world.

Discovering homes as organised constellations of social practices

What is being proposed here is close observation of the *organisational* properties of homes and the ways in which people actually produce something recognisable as 'home-life' and 'a household'. There is a kind of 'calculus' to this organisation in play and to uncover that calculus one needs to attend to *organisational* categories. Examples of such categories might be: 'communication'; 'routines'; 'monitoring'; 'management'; 'responsibility'; 'selection'; 'negotiation'; 'planning'; and so on. Basically, wherever something turns upon organisational achievements one needs to understand the character of those achievements and how they themselves are organised.

Looking ahead in that case to the kinds of things that might ramify for the future technological organisation of the home, we would suggest that many of the key factors that influence technological choices are people's existing *organisational* practices and how amenable these are to change. For instance, one might suggest that changes in how working families have organised their routines have made microwave ovens a reasonably successful technology. More radically, certain adaptations in how young people have organised their communication and coordination with one another have led to the integration of text messaging into their everyday lives [2]. These shifts in practice are not easy to spot even in retrospect but by failing to look at organisational phenomena and their composite practices is to run the risk of not even looking in the right place. What is being alluded to here is the relative rarity of people adapting the domestic 'calculus' to cope with technical limitations or to realise new possibilities. Thus, for understanding the real technological possibilities for making homes 'smart' one needs to understand how new technological possibilities can be accommodated within the calculus of the home.

What is 'smartness'?: the implications of domestic social organisation for smart appliances

A 'smart' home, in that case, is going to be one that can effectively support and integrate with the methods people have already acquired for ordering their domestic environments and their activities within them. A 'smart' home, therefore, would be less inclined to take action on behalf of its human users, but rather would enable human action. While new control-devices (easier ways of "making things happen") will be a part of this enablement, a major (and we feel neglected) part will be through the provision of enhanced resources for recognition. By looking at the existing resources in homes and attending to the ways in which they are used to motivate and constrain further action,

we can start to layout their features, which can serve as initial design guidelines for future-home designers. One discovers, then, that domestic resources are possessed of certain characteristics that are socially 'fateful'. They are:

- **Available and/or explorable through intervention** (*available* "at a glance") - they do not, as a matter of course, implicate special work, but are amenable to such work on occasion.
- **Naturally accountable** – they are possessed of adequately-unique features that allow for them to be oriented to as wholly unremarkable features of the setting (in relation to certain physical characteristics 'disattendable'). [5]
- **Open to variable presentation** - they are customisable and do not prespecify the exact orders of engagement in all ways.
- Furthermore, a major resource is the **spatial topology of the home** and (indeed) of particular houses. Each home may have specific "house rules" about the use of space, but these are themselves specific competencies of the occupants.

So, then, a home supported by the provision of ubiquitous technology that is truly 'smart' will present itself as a resource for human reasoning in actual (as opposed to prefigured or hypothesized) situations. And it will do this by accepting that the actual conduct of such reasoning has orderly characteristics. In this way the people who inhabit such a smart home will be able to orient to it as an ongoing and 'to-hand' resource for practical courses of action and the solution of their everyday organisational needs. They will be able to 'read' the home as something that 'signifies' socially, not as something that must itself be 'solved'. Within such a home the sum collective of observations about individual smart appliances will be able to be drawn together in a *recognisable* way that offers more than the sum of the parts. It will allow for people to arrive at the recognition of the social import of the present configuration of appliances *in just this case*. What the computer will provide is a presentation of that configuration appropriate to situated needs.

Existing preoccupations in the smart home: ways forward

Setting this against the current trend in smart home design it becomes clear that a remote control does not necessarily make an appliance 'smart', nor does 'remote access', 'an embedded processor', 'internet access', or 'a touch screen'. Instead 'smart' appliances are ones that are designed in response to, and embedded within a sociality. A 'smart appliance', then, is an aware appliance, aware not only of its own context within the technological ecology of appliances, but also socially aware of its multiple users, with their multiple sets of concerns and motivations. A "dumb" appliance is one that simply expects one user with a good memory. What is necessary for domestic technology to deliver anything a user might recognise as 'smart', however, will involve not just gadgetry but the feasibility of turning that gadgetry to real organisational and *socially coherent* ends. However, focusing on the characteristics of *individual* "smart appliances" will never be enough: the win for ubiquitous computing will be to provide support for the organisation of the home as a socially coherent entity.

References

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