
A Grand Vision for Post-Capitalist HCI: Digital Life Assistants

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Abstract

As a response to the call for “grand visions” for Human-Computer Interaction, I propose a future where people interact using a new type of interface: a *Digital Life Assistant*. This draws on ideas of human-data interaction, ubicomp, semantic analysis and humane design. Trained by us to understand the meaning and value of our data and digital interactions, digital life assistants will be our butlers and bodyguards, putting our needs ahead of those of corporations, marketers & service providers, embodying a previously unseen level of helpful technology and computer-aided human empowerment.

Author Keywords

empowerment; human-data interaction; ubicomp; semantic web; interface design; intelligent agents; voice control; humane design; big data; post-capitalism

Introduction – About the author

As a computer science graduate in 2000, I went on to develop information management systems and voice software at IBM UK. In Canada, I developed semantic text analysis applications at Open Text. At Zooniverse, Oxford University, I was Web Science Architect, studying online behaviors. I am now working on a PhD in Digital Civics at Open Lab, Newcastle, researching citizen empowerment through smarter data interfaces.

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The 4 duties of a Digital Life Assistant (DLA)

1. Learn what you need

Like a PA, you will be able to teach your DLA your preferences, values and priorities. It will learn from its mistakes to become a better assistant.

2. Protect your interests

Like a bodyguard, your DLA will keep your data, passwords and accounts safe, while always acting in your best interests and letting through only what's important and valuable.

3. Access to all your data, whenever you need it

Your DLA will remove barriers and let you to browse your digital life in terms of what it means, not its format, device, location or platform.

4. Filter the firehose

Your DLA will shield you from the overwhelming noise of the digital age, delivering your news, messages and information in manageable, timely chunks, giving you your time back and leaving your mind free and calm.

Motivation

We should be free to use computers as tools to meet our own goals, yet our ability to do so has been hindered by technological changes made in pursuit of commercial factors: Technology is increasingly simplified for cloud scalability and mass market appeal, resulting in a loss of freedom (for example, Apple's removal of device ports or Twitter's closing of APIs 'removes the seams' [12], and thus, users' agency). Internet economics encourage companies to shift their design rationale away from "what does *the user* want" to "what do we want the user to do?", hiding useful features behind paywalls, forcing users to watch adverts to complete their tasks [14] or preventing them from migrating data or integrating with other services for fear of losing them [5]. It is clear that if computers are to be truly useful, a revolutionary approach to human-computer interaction design is needed.

The Digital Life Assistant

In his seminal ubicomp paper, Mark Weiser wrote of the importance of pushing computing into the background and developing for the whole human [15]. Thanks to smartphones and social media, we have more technical frustration in our lives now than we did then; we are forced to cope with myriad apps, platforms, devices, adapters, services, languages, and interfaces. In my vision, this complexity is handled by the computer, not the human [4]. We need holistic, personal interfaces [1,16]. These are emerging in embryonic form with Siri, Alexa, Google Now and chatbot interfaces [6]. But these interfaces are corporate-controlled. To truly empower us, we need *humane* [9] interfaces serving solely our own priorities and needs, unfettered by the commercial goals of their providers. To be free, we need to reclaim control of our own data. David Siegel's

Personal Data Lockers vision [11] shows how this could work, with companies requesting permission to access our information for defined and finite purposes [10]. Databox embodies such an approach [17]. A Digital Life Assistant could go further, front-ending negotiations with providers and companies on our behalf (but delegating to us to make the key decisions when necessary). But it's not just data, we also need to recapture our time. By demanding our attention, our smartphones are making us stupid [18]. The Digital Life Assistant would monitor all our inboxes, feeds and social channels on our behalf so that we don't have to, protecting us from distraction [7], delivering summaries and delegating key decisions to us as needed, much like the Queen's personal secretary in TV's "The Crown" keeps her apprised of key developments in the papers and in government. Using corrective feedback from us, the Digital Life Assistant will learn to be a better servant. In choosing what to show us, it will also have a duty to serve the greater good, and deliver balance; today's social order has been disrupted by algorithms that give you only more of what you know, trapping people in self-reinforcing filter bubbles, void of contrary opinions [2,13]. A key ability of a Digital Life Assistant is that it will know every part of your digital life in great detail, allowing instant, easy retrieval and usage of information without regard to where it is stored. Through contextual and semantic tags [3], it will understand our data and offer a meaningful relationship with the data itself [8]. We will be empowered to associatively browse our digital lives [3] and pursue our own objectives with immediacy and ease.

Above all, Digital Life Assistants will be our sidekicks in this age of complexity, ensuring computers become useful tools that are, as Weiser first hoped for 27 years ago, "as refreshing as a walk in the woods" to use [15].

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