

Influencing Adaptation: Discourse, values and information and communication technologies

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In 1945 Vannevar Bush wrote a provocative article concerning information overload. Although he didn't use the modern catch phrase, he made ominous predictions for a civilization burdened with too much information; "truly significant attainments become lost in the mass of the inconsequential". His solution for keeping sight of the ground breaking discoveries of the present and the harsh lessons from humanity's past was to create more efficient and productive ways of handling data.

Bush's call for the research and design of innovative information and communication technologies (ICT) was well received. A quick review of information science journal articles and conference proceedings suggests that the drive to create and make use of ever more efficient and productive ICT systems continues. However, if one looks outside of the information science field there are signs of serious environmental and social costs to this never-ending pursuit. The environmental toll is complex, but tangible because it has physical manifestations (e.g. mountains of toxic refuse). Across the globe millions of desktop computers, cellular phones, laptops, and other ICT which still function are discarded for cutting edge, more efficient models (Grossman, 2006). The social costs of the pursuit, although harder to document, has been found to arise from the constant pressure to learn and develop work practices around an increasing number of ICT in the name of increased production (Lazar, Jones, & Shneiderman, 2006).

Vannevar Bush's sixty year old claim that humanity must make better use of our accumulated knowledge still rings true. Yet, for all of the ICT created and thrown away since his time, is humanity making better use of its knowledge (Levy, 2006)? How is humanity adapting to this ICT dependent world? Are we making better decisions for the future of humanity? Are we leading richer lives in our ever more toxic environment? Are we holding onto other essential human values in our push for more efficiency and productivity?

Ivan Illich proposed answers to some of these questions thirty years after Bush (1979). According to Illich we have forgotten our aspiration to lead a *good* life by becoming obsessed with the endless pursuit to gain an *ever better* life through more productive and efficient tools: "Addiction to progress can enslave all men to a race in which none ever reaches the goal" (p. 84). According to Illich the fixation on efficient production causes humanity to abandon other ideals which sustain and nurture human life (e.g. living in a non-toxic environment). He claimed that humanity is on a path leading to the destruction of both the environment and humankind's creativity. Illich called for research which clarifies the relationship of people to their tools and "holds constantly before the public the resources that are available and the consequences of their use" (p. 83). His proposition was that communities of people who come together and talk about the decisions they make and are informed about the consequences of tool use, can influence their interactions with their tools. Illich called for research which explores "the dimensions within which technology can be used by concrete communities to implement their aspirations without frustrating equivalent aspirations by others" (p. 78). In essence he claims that in order for the human species to survive and thrive we have to accept more responsibility for the design and use of our tools.

The project described herein sets out to investigate Illich's proposition concerning the adaptive relationship between humanity and ICTs. Specifically, how do communities with explicit aspirations, beyond efficiency and productivity, negotiate their interactions with ICT? The project will consist of three investigations based on Value Sensitive Design's tripartite methodology: Empirical, conceptual and technical (Friedman, Kahn, & Borning, 2006). The three investigations will occur concurrently and will directly inform on each other. For the purposes of this symposium, a brief overview of each investigation is provided below.

1) **Empirical:**

An empirical investigation draws upon the diversity of research methods (e.g. participant observation, interviews, experiments) to focus upon the human actors. Utilizing a range of methods serves to enrich the investigators understanding of both the context and the values implicated through the introduction and use of an ICT. This project will set out to examine the information practices, specifically the information and communication technology adaptation of two ecovillages, one forming and one established, that share an explicit set of defined values. An ecovillage is a group of people who have chosen to live together with a common purpose, to create a lifestyle which manifests their concern for sustaining and nurturing their community and the natural environment (Jackson & Svensson, 2002). The formation of ecovillages is an international trend. Individuals living in ecovillages have the same communication and information needs as the rest of society, needing to communicate and share information with friends, family and their jobs.

The primary research question which will be investigated during the empirical investigation is:

- How do communities explicitly trying to live by a core set of values adapt to information and communication technologies while balancing the information needs of life in the twenty first century?

2) **Conceptual:**

A conceptual investigation typically begins by identifying direct and indirect stakeholders in the context under study. Direct stakeholders are the individuals who personally interact with the ICT under investigation. Indirect stakeholders do not interact with the ICT personally, but their lives will be strongly influenced by a direct stakeholder's use of the ICT. The second component of a conceptual investigation is identifying and developing philosophically informed definitions of the values implicated by the ICT's direct or indirect influence on the stakeholders' lives. For the purposes of this project, the conceptual investigation will also explore the definitions which community members have crafted of their core values, which may or may not be influenced by their use of ICT. This information will come directly from the community members during the empirical investigation.

3) **Technical:**

Value Sensitive Design's technical investigations are concerned with the specific features of an ICT. For example, do specific features of an ICT implicate certain values? During the project three ICT which are utilized heavily by the community will be used to develop technical "case studies" to draw out the technical features which support or constrain the communities' values (e.g. email, physical bulletin board). The specific ICT will be chosen based on preliminary findings from the empirical investigation.

To conduct the three investigations above I will study the adoption, appropriation and adaptation of ICTs from an interactional position. This position is based on the idea that it is through the interaction between individuals and the ICTs they are utilize that outcomes become manifest. These outcomes can have positive and/or negative consequences for human flourishing. The project outlined above will inform on information behavior theory, sustainability research, and the design of ICT technical features. The integrative Value Sensitive Design methodology will enable the project to deepen our understanding of the ICT

adaptation process and the technological features which support or hinder a community striving to adapt and thrive in a world increasingly dependent upon ICT.

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