Cultural products and their implications for business models: Why science fiction needs socio-cultural fiction

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A R T I C L E   I N F O

A B S T R A C T

Science fiction prototypes (SF prototypes), narratives based on science and technology, have been identified as a means to develop new products, services, and business models in light of their potential of enhancing creativity. Drawing on various fields of theory and examples of innovations derived from the arts, this article argues that the value of SF prototypes can be extended by complementing them with socio-cultural fiction (SCF) prototypes. This links the technological perspective to socio-cultural innovation. Further, while referring to prototypes derived from cultural products, it can be assumed that these prototypes through the processes of diffusion and normalization have become part of the world of the customer which then can be addressed through new products or services.

1. Introduction

This article takes the following questions as a starting point: "What if we could use science fiction based on science fact to not only imagine our future but also to develop new technologies and products? What if we could use stories, movies and comics as a kind of tool to explore the real world implications and uses of future technologies today?" [1, p. v].

We have proposed in earlier work [2–5] that cultural products – novels, movies, comics, or works of contemporary art – can assist organizations in developing foresight. We have made the argument that cultural products can be used to detect "weak signals" [6] of change in the environment of an organization. While considerable work has been done in the recent past on the concept of weak signals and trends [7–9], including a special issue in *Futures* [10] on weak signals, there is still little evidence on the usage of cultural products in detecting weak signals or the usage of science fiction prototypes (SF prototypes) to imagine the future.

In this paper we want to explore the extension of the idea of SF prototypes to socio-cultural fiction (SCF) prototypes. Our argument is that to explore the full potential of SF prototypes, these need to be complemented by SCF prototypes. Further, we want to shed light on why and how SF prototypes can turn from perceived fiction to fact by not only pointing out the relevance of SF prototypes in the construction of reality but foremost by referring to the diffusion of innovations and trends [7]. While the original theory of diffusion turns out to be too simplistic for foresight purposes, research from other fields and our own extended concept of diffusion suggest that the technological innovations found in science fiction have to be complemented by looking at socio-cultural innovations, particularly changes in the "worlds of the consumers" (e.g. their knowledge, imaginings, practices, perceptions and experiences) – in other words, in socio-cultural fiction.

The emphasis on socio-cultural fiction underlines our claim that the changes in customer perceptions are driven both by technological innovations and by changes in the disposition of customers. We underline our point by not referring to

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"classical" science fiction, with a strong focus on future technologies. Instead we refer to cultural products, especially art projects and literature, which would not necessarily be labelled as science-fiction but which can contain interesting prototypes.

We will start by discussing the relevance of cultural products for SF prototyping. This discussion will be followed by elements of an elaborated theory of diffusion. In the remainder of the paper we will describe how the concept of *Locative Art*, taken from William Gibson's [11] novel *Spook Country*, not only relates to the technology of *Augmented Reality* but foremost points out to future applications and socio-cultural practices that, in combination, will give rise to new business models.

2. Cultural products and their relevance for SF prototyping

In discussing the relevance of cultural products for SF prototyping, we want to highlight two aspects: how do SF prototypes foster creativity in organizations, and how can SF prototypes be linked to the world of the customer?

2.1. SF prototypes and creativity

What are SF prototypes? According to Johnson [1, p. v]: "SF prototypes are short stories, movies and comics that are created based on real science and technology. This is not a new idea; for over 100 years artists have been creating fiction based on fact. What makes SF prototypes different is that they explicitly use these fictional creations as a step or input in the development process. Whether one is a designer, engineer, scientist, artist, student or strategic planner SF prototypes offer a way to imagine and envision the future on a whole new way". Johnson [1] elaborates that SF prototypes are narratives which are based on a science fact and that the purpose of dealing with SF prototypes is to explore the implications and/or effects of that science described.

In addition, it has been claimed [e.g. 12,13] that science fiction has influenced the design of products: "Arguably, a range of contemporary technologies – from PDAs to cell phones – have adopted their forms and functions from science fiction" [12].

It is plausible that SF prototypes in the above-defined way have enhanced the creativity of designers, engineers, scientists, artists, students or strategic planners. Creativity and innovation can be viewed as mantras in contemporary creative organizations. Styhre and Sundgren [14, p. 4] offer the following definition for organizational creativity: "A variety of activities in which new ideas and new ways of solving problems emerge through a collaborative effort by promoting dialogues that involve multiple domains of scientific knowledge to produce value for the organization's mission and market."

While others have pointed out the relevance of creativity in organizations [e.g. 14,15], the argument made in the context of SF prototyping is that narratives from cultural products may foster creativity by offering new ideas. While the use of narratives in managing creativity has been acknowledged [14], this view is confined to the realm of *storytelling*, i.e. "how narratives can address issues and concerns in creative work" [14, p. 181]. Boje [16, p. 106] defines a "storytelling organization" as a "collective storytelling system in which the performance of stories is a key part of members' sense-making and a means to allow them to supplement individual memories with institutional memory". Stories therefore are an essential vehicle for sense making among external and internal stakeholders.

However, in the context of SF prototyping, we would at this point like to shift the attention towards the relevance and potential of *storylistening* in an organization. While one aspect of storylistening is the detection of the new, Styhre and Sundgren [14, p. 188] contend that "organizational creativity begets the new". Even more important is the aspect that SF prototypes are not only perceived in organizations but also outside of these organizations; this is indicative of a further potential of SF prototypes, which is explored in detail in the following section.

2.2. The role of SF prototypes in the construction of reality

The seminal work of Berger and Luckman [17] has argued that reality is socially constructed. Further, the social construction of reality is based to a large extent on cultural products such as literature or movies. Czarniawska [18, p. 249] refers to "the constructive role of popular culture". According to Crotty [19, p. 58], "…social constructionism emphasizes the hold our culture has on us: it shapes the way in which we see things (even the way in which we feel things!) and gives us a quite definite view of the world. This shaping of our minds by culture is to be welcomed as what makes us human and endows us with the freedom we enjoy."

Kirby [20] has described how film makers and science consultants have created cinematic representations of technological possibilities with the effect of stimulating the desire for these technologies among the audience, but also with an eye on generating funding opportunities for these technologies. "Fiction's lack of constraints and film-makers' creative assistance provides an open 'free' space to put forward speculative conceptualizations; it also emends these speculations within narrative that treats these ideas as already actualized within social context" [20, p. 66]. Benford and Malartre [21, p. 8] has added that "fiction and film have meditated upon the upcoming social issues for robots and cyborgs for centuries."

The influence of cultural products on the construction of reality is also underlined by the narrative format of these cultural products. Balkin [22] points out that narratives are deeply entrenched in human thought and are easily transmitted through communication. Narratives are the prevailing forms of human thought because narrative structures are a particularly