

Sustaining Social Creativity

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Although creative individuals are often thought of as working in isolation, much of our intelligence and creativity results from interaction with tools and artifacts and from collaborating with other individuals [Csikszentmihalyi, 1996]. Many traditional approaches to creativity, however, have disregarded the importance of social and material surroundings. A richer framework would enable software development, interaction design, and information content researchers and managers to understand the opportunities, challenges and principles of social creativity

Social Creativity. As shown by movie directors, champions of sports teams, leading scientists and influential politicians, an individual's skills and experience can make a huge difference. Individual and social creativity can and need to complement each other. In *complex design problems* such as urban planning, for example, the difference in knowledge, expertise, and perspectives that exist among individuals provides the ground to collaborate toward more creative and sustainable solutions [Arias et al., 2000]. The same is true for *scientific laboratories* [Kouzes et al., 1996], in which computer scientists work with domain specialists to accelerate knowledge development and dissemination, and for *creative practices* such as art and technology collaboration, the results of which supersede what a single artist or computer scientist could have done in isolation [Candy & Edmonds, 2002; National-Research-Council, 2003]. Environments supporting *mass collaboration* and *social production* such as annotated collections (GenBank), media sharing (Flickr, YouTube), wikis (Wikipedia), folksonomies (del.icio.us), and virtual worlds (Second Life) are other examples of social creativity. *The diverse and collective stock of scientific content and artistic or stylistic ideas that individuals and communities share, re-interpret, and use as a basis for new ideas and visions constitutes the vital source of invention and creativity.*

Focusing on Communities. Socio-technical environments are necessary for communities to collaborate and bring social creativity alive: to express themselves, combine different perspectives, and generate new understandings. In large and heterogeneous groups working together for long periods of time over complex design problems, as well as in communities including individuals with diverse but converging goals and intentions, distances and diversity between contributing individuals can enhance creativity rather than hinder it. The challenge is not to reduce heterogeneity and specialization but to support it and manage it at both the technological and social level by finding ways to build bridges between individuals and exploiting conceptual collisions and breakdowns to stimulate imagination and invention. The distances are distributed in multiple dimensions: (1) *spatially* (across physical distance), (2) *temporally* (across time), (3) *technologically* (across artifacts), and (4) *conceptually* (across individuals, communities, and cultures) [Fischer, 2005]. This distribution provides a foundation for social creativity by making all voices heard, harnessing diversity, and enabling people to be aware of and access each other's work and ideas, relate them to their own, and contribute the results back to the community.

Constructing Socio-Technical Environments. Because social creativity has "no head," externalizations are vital to socio-technical environment. Externalizations support creativity by: (1) producing a record of our mental efforts; (2) causing us to move from vague mental conceptualizations of an idea to a more concrete representation of it; (3) making thoughts and intentions more accessible for personal reflection; and (4) providing a means by which also other individuals can interact with, react to, negotiate around, and build upon an idea. One example of this is when sketching is used to share and negotiate design concepts. In environments for mass collaboration and social production, externalizations support creativity by enabling individuals to: (1) sense new aspects of the environment experienced by other individuals; (2) interact with it

in new ways; and (3) socially unfold and interpret emotions and behaviors [Giaccardi & Fischer, forthcoming]. One example is Flickr, in which people can develop new photographic styles by looking at how other people have photographed or “sensed” their environment. Another example is our collaborative mapping system THE SILENCE (www.thesilence.org), in which geo-located information is overlapped with a person’s perceptions and feelings about specific aspects of the sonic environment. From this enriched perspective, externalizations for social creativity (shared representations, pictures, sounds, etc.) must be thought of as an instrument for creative conversations, rather than just a tool for categorization (“Is this a residential or commercial area?”).

Harnessing the Synergy of Many by Meta-Design. Creativity needs the “synergy of many” [Benkler, 2006], and this kind of synergy can be facilitated by *meta-design*. Meta-design is a socio-technical approach that characterizes objectives, techniques, and processes that allow users to act as designers and be creative in personally meaningful activities [Giaccardi & Fischer, forthcoming]. However, a tension exists between creativity and organization. A defining characteristic of social creativity is that it transcends individual creativity and thus requires some form of organization; but elements of organization can and frequently do stifle creativity [Florida, 2002]. Advocates of meta-design address such a challenge and promote the importance of keeping environments open to users’ modifications and adaptations by technical and social means that empower participation. This serves a double purpose: (1) to provide a potential source for new insights, new knowledge, and new understandings; and (2) to provide a higher degree of synergy and self-organization. Meta-design can facilitate social creativity by shifting the focus from finished products or complete solutions to conditions for many to explore mismatches and embrace new emerging opportunities during use. How to generate and sustain these conditions effectively is the next challenge for software development, interaction design, and information content managers.

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