

Large-Scale Idea Management and Deliberation Systems Workshop

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ABSTRACT

A growing challenge in social and collaborative computing is to develop tools for large-scale ideation and deliberation (LSID). Business and civic organizations are seeking new technologies and services to let their communities participate in discussions, while communities increasingly expect such opportunities. Some cases require tools for democratic deliberations; others need tools for defining goals and influencing the community toward sustainability. To satisfy these new needs, the workshop brings together leading researchers, designers, and engineers who are working on this new class of systems. The workshop is aligned with C&T's focus on community as basic social unit, target and source for which to design new technologies and by which these can be adopted. Following up from a series of four workshops and a special issue, the goal is to continue establishing a community and the research agenda on LSID tools for business and civic application domains.

INTRODUCTION

Social and Collaborative Computing has advanced enormously over the past decade by making it possible for crowds of hundreds or even thousands of people to share knowledge (using such tools as wikis, blogs, forums), put out and perform outsourced tasks (using such "crowdsourcing" tools as Amazon Mechanical Turk), predict the future (using "prediction markets" such as the Iowa Electronic Markets or intrade.com), and rapidly create

and leverage friendship and professional networks (using social networking platforms).

Now the field faces the new challenge of developing tools that go a step further and support LSID processes: i.e. identify problems, generate and evaluate solutions, select the best proposals, and implement them as new services, facilities, or products. These new tools have the potential to enable powerful emergent properties, such as [7; 13]:

- Critical mass incentives – a sufficiently large user base elicits active, committed contributors
- The long tail - greater access to "out-of-the-box" ideas
- Idea synergy - where novel ideas are generated by relating ideas that had never been put together
- Many eyes, many hands - a large user population can quickly perform large tasks, fix each other's mistakes
- Wisdom of the crowds - many independent opinions, when aggregated, can produce judgments better than any individual, even experts, could do.

Such tools offer concrete benefits for civic and business communities such as greater social capital and participation, better innovation, better decisions, and lower costs.

Many promising applications already exist in both the private and public realms, ranging from Ideastorm (where customers propose new product and service ideas to Dell) to the Obama administration's Open for Questions (where citizens proposed questions for a major address by President Obama) to the google10tothe100th contest (where individuals proposed and rated possible charitable projects for funding by Google) to the LivingVoters guide (where Washington state residents deliberated about proposed changes in government policy) [1, 2, 4, 5, 6, 8, 9, 10, 11, 13]. Powerful commercial and research platforms for LSID

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have also appeared (cf. www.spigit.com, www.ideascale.com, www.brightidea.com, www.imaginatik.com, olnet.org/odet2010) [5, 8, 10, 15]. Many types of organizations, from business to education to government, are seeking out such platforms for including their constituencies in their deliberation processes, and their constituencies increasingly expect such opportunities.

LSID platforms, however, face some open challenges that include: overwhelming contribution volumes with large redundancy and variable quality; visualizing and managing large-scale deliberations; proposing interaction, browsing, and input methods that stimulate participation; handling complex problems whose solutions require many interdependent parts; handling solutions with components

coming from complementary viewpoints that are not equally weighted when making the decision; and so on. More research is needed to address these problems.

WORKSHOP GOALS AND THEMES

Following up from a series of four prior workshops (Group 2010, CSCW 2010 & 2012, COOP 2012 www.parc.com/ciorg, coop2012.xrce.xerox.com, [12]) the goals of this workshop are to enable a multi-disciplinary discussion about the key research questions and related themes underlying the design, deployment, and evaluation of LSID platforms in real world contexts (see Table 1).

The workshop’s themes and research questions address three key focus areas: *theory*, *technology* and *applications*.

	Research Questions	Workshop Themes
Theory	What interaction structures improve how a community thinks, makes decisions, and learn?	<i>cognitive factors in ideation and deliberation</i>
		<i>models of crowd knowledge, crowd aggregation, and crowd reasoning</i>
	How can we model deliberation discourses formally? [3]	<i>deliberation as structured discourse</i>
		<i>discourse modeling</i>
		<i>argumentation theories & technologies</i>
	How do incentives for LSID differ from other social media?	<i>models of social influence</i>
		<i>influencers identification</i>
		<i>influence markers</i>
How does participating in LSID lead to behavior or belief changes?	<i>measuring engagement</i>	
	<i>extrinsic and intrinsic motivational factors</i>	
How does LSID vary over different socio-cultural and organization contexts?	<i>discovering reasoning patterns</i>	
	<i>social network analysis</i>	
	<i>network structure for collaboration</i>	
	<i>systemic properties from node interactions</i>	
How can we model emergence in LSID?	<i>opinion diffusion models</i>	
Technology	What tools and processes enable deliberations at large scales?	<i>self organization, emergence of volunteering, game theory models</i>
		<i>systems for collective policy amendment</i>
	How can data mining and information visualization be applied to LSID?	<i>role-based tools for contributors, decision-makers, reviewers, facilitators, aggregators, and group formation</i>
		<i>real-time deliberation and stream reasoning</i>
		<i>discourse and arguments visualization</i>
	How can we leverage activity traces to improve LSID?	<i>visual analytics</i>
		<i>analytics functionalities for reflection</i>
		<i>awareness and self-correcting tools</i>
		<i>automatic user profiling from contributions</i>
	How can we integrate LSID into existing organizational systems?	<i>social ideation & business process management</i>
<i>reputation systems</i>		
<i>incentives and reward systems</i>		
Application	How does LSID impact domains like health, sustainability [14], education, engineering, management, policy-making [15], and so on?	<i>energy infrastructure, business strategy, pub. policy, emergencies</i>
		<i>grassroots innovation & decisions</i>
		<i>democracy, open & accountable governance</i>
		<i>earth policies, social sustainability, health, ageing, participation</i>
		<i>artistic cooperation, large-scale games, films</i>

Table 1. Research Questions and Associated Workshop’s themes.

WORKSHOP DIFFERENTIATION

Social Media venues focus on the analysis of social media datasets from public forums (e.g. citizen sentiment, see http://researcher.ibm.com/view_project.php?id=2983). Our focus is rather on tools supporting higher socio-cognitive functions in crowds such as problem solving and deliberation. The analysis is a means to design, not an end.

Differently from *venues on digital cities*, we focus on communities' ideation and deliberation beyond the city boundaries and governance. We target 'large-scale' deliberation that occurs at cross-city, regional, national and international levels; and we investigate LSID across business and civic domains, to draw generalizations and distinctions for tool requirements across these domains.

Differently from our prior workshops on *Collective Intelligence (CI) in Organizations* (Group 2010, CSCW 2010, CSCW 2012, COOP 2012 and other conferences (www.ci2012.org), this workshop has a sharper and more domain-specific focus: LSID in business and civic settings. We started narrowing the focus in our COOP 2012 venue.

In the *enterprise context*, several initiatives have focused on the integration of social interactions and business processes (e.g., the Social Business Forum). The original aspect of this workshop is the type of processes (ideation and deliberation) addressed, for which the reported experience is scarce, and the special attention to the integration of experiences and approaches from civic and business areas.

A key differentiator is also the truly *multi-disciplinary and international nature* of the workshop. Five organizers come from academia and four from (small or large) industry. Thus the participants will benefit from a well-balanced set of topics, including basic and applied science, and a broad range of research experiences. The participants will represent various countries and fields of expertise, as suggested by the organizers' affiliations and profiles.

Finally, we will use a *novel workshop format* for making the venue very productive and thought provoking. We will combine short talks with lively group discussion: we will use the world café method to promote large group dialogue (www.theworldcafe.com/method.html).

WORKSHOP ORGANIZATION

Workshop Activities and Outcomes

The workshop will be held over a full day. The agenda will allocate maximum time to small group discussions. Prior to the workshop, each participant will be asked to read and comment on the other attendees' position papers so as to reduce the need for long presentations at the venue.

The day will be divided into six subsequent sections:

1. *Introduction*. The organizers will introduce the topics, the agenda, and a few guiding questions.
2. *Brief presentations*. Half of the workshop attendees will give brief presentations or demos selected to provide a variety of themes.
3. *World café discussion*. The participants will engage in small group discussions (3-5 members), focusing on the themes of the presentations. Each group will use 1 whiteboard and 1 laptop for note taking. Following the world café method, the participants will rotate among the groups during the iterations.
4. *Brief presentations*. The second half of the workshop attendees will give brief presentations (see point 2.).
5. *World café discussion*. The participants will engage in group discussions focusing on the themes presented in the second set of presentations (see point 3).
6. *Summary*. The larger group will reconvene and summarize the directions from both group discussion sections. The workshop will end with a short summary of key questions, themes, and follow-up tasks.

The workshop activities will help a diverse set of outcomes:

- Hone a shared research agenda that focuses on the key challenges in the field.
- Identify promising technical approaches and application areas.
- Form collaborations around ideas of mutual interest.

Announcements and review process

We sent a preparatory announcement to about fifty researchers to test the interest in the topic and we received ten responses announcing the intent to submit. To call for contributions, the co-organizers will distribute the call for papers (CFP) via professional contacts and mailing lists. Submissions will be accepted until May 1st and the authors will receive the notifications and the reviews by mid-May.

Three researchers will review each submission using the following criteria: significance of the contribution, relevance to the workshop, and clarity. The maximum number of contributions accepted will be about 20 (for which we estimate a maximum of 30 participants). Each presenting author will prepare a brief summary of their contribution, which will be posted on the workshop website with the corresponding revised paper. As for coop2012.xrce.xerox.com, the website will be hosted by Xerox (www.xrce.xerox.com). The CFP, the program, and the papers will be shared on the workshop site.

ORGANIZERS' BACKGROUND

Gregorio Convertino, XRCE, France, Senior Research Scientist at Xerox Research Centre Europe. His research focuses on enterprise2.0, collective intelligence tools such as prototypes for large-scale deliberation or crowdsourcing. He chaired three workshops on CI (Group, CSCW, COOP) and edited a special issue, which led to this new venue.

Mark Klein, MIT, USA, is a Principal Research Scientist at the MIT Center for Collective Intelligence, an Affiliate at

the MIT Computer Science and AI Lab and the New England Complex Systems Institute. He made contributions in the areas of conflict management for collaborative design, design rationale capture, business process re-design, negotiation algorithms and large-scale argumentation.

Anna De Liddo, Open University, UK, Research Scientist at the Knowledge Media Institute. Her research focuses on socio-technical factors of the design and uptake of Online Deliberation and Collective Intelligence. She has interests in knowledge creation through discourse, and the role of technology in scaffolding dialogue. She co-organized the CSCW 2012 Collective Intelligence and ODET 2010 Online Deliberation Emerging Tools workshops.

Adam Westerski, Universidad Politecnica de Madrid, Spain, PhD Student. His research interests include knowledge management and use of Semantic Web technologies in the areas of innovation management and digital libraries. His research projects relate to processing, measuring and ranking information created via crowdsourcing activities in open innovation.

Paloma Diaz, Universidad Carlos III, Spain. Full professor at the Computer Science Department. Her group led projects on cross-organizational cooperation, cooperation between organizations, and communities of practice and interest. Most of these projects have been co-developed with the Civil Protection Department of the Spanish Ministry of Interior and organizations of volunteers.

Manas Hardas, Spigit, USA, Social Algorithms Researcher. Manas is a part of the research and product development team at Spigit where he helps in building systems for collaborative innovation. His interests include innovation diffusion, social network analytics, crowd engagement and collaboration, evolution of cooperation in crowd networks, wisdom of crowds, and sentiment analysis.

Lu Xiao, University of Western Ontario, Canada, Assistant Professor. She leads HCI group at Faculty of Information & Media Studies. Some projects are: decision-making factors in Wikipedia's Article for Deletion discussion, visualization tools to enhance group decision-making, quality control mechanisms in crowdsourcing, and community-based learning through social networking technologies.

Claudio Bartolini, HP Labs, USA, Principal Investigator at HP Labs Palo Alto. His research interest lies at the intersection of social networks, analytics and collaboration applied to enterprise settings. He has particular interest in crowdsourcing applied to solving enterprise problems.

Josh Folk, IdeaScale, Government Services, Washington, D.C.. He works with US government organizations such as the White House, Veterans Affairs, and the Environmental Protection Agency. He focuses on how crowdsourcing can generate innovative cost-saving and efficiency ideas for the public sector.

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