First Symposium on the Personal Web

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Abstract

The First Symposium on the Personal Web is co-located with CASCON 2010 and is sponsored by IBM CAS Research. This symposium includes key researchers and practitioners in a range of related areas in order to organize and focus the research directions and challenges of the Personal Web as the next instantiation of the Smart Internet. The smart internet is envisaged as a platform for automatic, dynamic aggregation of data and services for the purpose of supporting each user's goals; tasks and concerns, both cognitively and socially. The Personal Web focuses on the user view of the Smart Internet, allowing users to conduct ad hoc or persisted integration effortlessly across the web, as per their context and spheres of interest.

The Smart Internet research initiative has two distinct areas of research. *Smart Interactions* address factors that impact the discovery; aggregation and delivery of data and services from the internet that are most relevant and appropriate to the users' situations and tasks at hand. *Smart Services* address the challenges in the underlying web architecture and runtime infrastructure as the behind-the-scene enabler to actually deliver the data and services in a manner that meet the requirement for the support of smart interactions. Building on what has been previously established in Smart Internet, the Personal Web emphasizes the use of *semantically-linked data* as its funda-

mental basic building block in order to enable user-sovereign, open integrations across the web, and to achieve the goals of users with minimal cognitive effort. This refines the research scope of smart interactions and smart services, and creates new problem statements and research challenges.

1 Rationale

In the CASCON 2009 workshop on Smart Internet, which we refer to as SITCON, we focused on developing and refining the concepts and requirements of the Smart Internet, including Smart Interactions and Smart Services. We also proposed technologies and methodologies in enabling computing needed for real world implementations.

Since the SITCON workshop at CASCON 2009, subsequent refined research directions, innovations and research results have been captured in an edited book on the Smart Internet to be published by Springer in fall 2010 [1].

The evolving goals of this research initiative have resulted in this first Symposium of the Personal Web, positioning the notion of Personal Web as an instantiation of the Smarter Internet. The plan is to focus on bridging the current technology gaps in the realization of the goal of empowering "ME", as a general user, to control and conduct *open*, *user sovereign web aggregation* for ad hoc or persisted integration across the web. The Personal Web should be implemented with such simplicity in user experience that even non-technical users can have a rich experience of personalized integration through various kinds of integrate-able web elements (such as web domains' structural

data and restful web services), made possible by web software programmers.

As with the preceding SITCON workshop, this symposium will involve a multi-disciplinary effort that brings together researchers in data integration; web services modelling and architecture; human computing interaction; predictive analytics; cloud infrastructure; semantics and ontology; as well as industrial domains such as health care; journalism; e-Commerce and others.

The purpose of the symposium is to bring together researchers and practitioners from these multi-disciplinary areas in order to organize and focus research directions and challenges and to brainstorm solutions for the advancement of related science needed to enable real life deployment of the Personal Web.

2 The Personal Web

This Symposium on the Personal Web is a continuation of the Smart Internet research initiative. The concept of the Personal Web was originated and proposed by symposium co-chair Joanna Ng, with relevant research by IBM Canada CAS Research affiliated university faculty members being discussed in this first symposium.

The Personal Web gives the general user the power and control to assemble and aggregate what the user is interested in across the web; including contextually relevant and personal data, as well as relevant web services as modules of capability, without the need for assistance from a programmer. In the Personal Web, multiple web domains are melded into integrated views and interactions involving visualization and web artifacts, all driven by the user's context and spheres of interest; making the web platform appear unified. Personal Web interaction will serve the user's situational and/or persistent needs for integration in a manner that is cognitively supportive, and simple enough for everyday use by non-technical users.

The Personal Web is currently envisioned in terms of three main areas. These are the areas of Smart Interactions and Smart Services the comprise the Smart Internet, but with the area of Smart Services further broken down into Smart Services for Data and Smart Services for Tasks.

Specific research areas and tasks that will be relevant to the research activities discussed in the workshop include:

- Enabling existing web domains for participation in the Personal Web
- User Data and Knowledge Management for Personal Web Integration
- Elicitation of Personal Web Knowledge (e.g., through Analytics or Inference)
- Data and Service Retrieval
- Data and Services Integration and Classification
- Data and Services Interaction and Visualization
- Personal Web User Interfaces and User Experiences
- Privacy and security for Personal Web
- Semantics and Ontology for Personal Web services and data
- Semantic relationships and links discovery

3 Organizers

The co-chairs for the First Symposium on the Personal Web will be Mark Chignell, Professor of Mechanical and Industrial Engineering at the University of Toronto, James Cordy, Professor at Queen's University's School of Computing, Joanna Ng, Head of IBM Canada's Centre for Advanced Studies Research and Yelena Yesha, Professor of Computer Science and Electrical Engineering at the University of Maryland, Baltimore County.

4 Format

The Symposium will have three distinct sessions. In the first session, invited participants will be presented with an overview of the research initiative of the Personal Web to lay out the scope, including the key research challenges and problem statements and why collaboration is necessary and how the collaboration could take place.

The second session involves a set of presentations to share research ideas and different research challenges on three major sub-topics, namely *Smart Interactions, Smart Services for tasks and Smart Services for data.* These three groups of presentations arise from IBM's experience with

challenges in these areas and are subject to revision based on input from both academic participants and companies collaborating in this initiative.

The third session is a panel discussion on the Personal Web. The panel discussion will cover the mission and goals of the Personal Web along with the key research areas needed to enable it.

5   Expected Outcomes

The goal of the symposium is to bring together Canadian researchers who are investigating different aspects of the architecture and functionality needed to make the Personal Web a reality. Interactions during the symposium should identify opportunities for linking research and for sharing results. The longer term outcome includes the creation of an edited book out of a revised version of the symposium proceedings with the tentative title "The Personal Web". Another anticipated outcome is deployment of a public instance of the Personal Web infrastructure in the IBM cloud in order to generate real life data that can be used in future studies. The goal of that "venture research" will then be to create realistic data that can guide future directions in the Personal Web, with researchers amending data models, ontologies, and functionality as appropriate to match real-world practice.

Reference

[1] Chignell, M., Cordy, J., Ng, J. and Yesha, Y. (Eds). *The Smart Internet*. Lecture Notes in Computer Science, 6400, Berlin: Springer-Verlag.