Guest editorial: mobile services on the Web

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Advances in the Web and mobile technologies offer new and exciting services to users in various domains such as e-business, healthcare, entertainment, and scientific activities. With the advances in mobile technologies, the Web gets richer in its contents and usability. In addition to its widespread usability in the e-commerce, education, and media, the Web has established its roots in exchanging and sharing information in social communities. For example, user-generated contents in the social networks have transformed the Web into a new era of the Web 2.0—these contents comprise a wealth of information often involving multimedia data such as audio, video, pictures and blogs. Indeed, the Web is slowly evolving from current "Web of Content", "Web of People", into "Web of Things and Services", given the recent advances such as radio-frequency identification (RFID), sensor networks, and service-oriented computing (SOC).

These new developments however introduce many new challenging and unsolved problems. One of the major issues is to deal with the resource scarcity in mobile environments. Though mobile devices and wireless networks are improving their resources, they are still far behind the wired networks and desktop PCs in terms of bandwidth, memory, processing speed and battery power. In addition, users expect mobile services to be intelligent and context-aware.

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This special issue of the WWW Journal aims at presenting the latest developments, trends, and research solutions in bringing mobile information services to the Web, which received an enthusiastic response. There were 20 submissions, including three extended from the best papers of WAMIS 2010 (the 6th International Symposium on Web and Mobile Information Services, Perth, Australia). Six papers were selected after several rounds of rigorous review by the guest editors and the invited reviewers.

The first paper by Rasch et al., "Context-driven personalized service discovery in pervasive environments", proposes a proactive service discovery solution in pervasive environments by dealing with dynamic context information. In particular, it develops a theoretical model, *Hyperspace Analogue to Context* (HAC), for describing context, services, and user preferences. The paper by Lee et al., "Discovery of unusual geo-social activities using geo-tagged microblogs", considers the proliferation of micro-blogging services such as Twitter and proposes an effective approach for detecting unusual crowding places based on event detection models and movement pattern models.

The paper, by Waluyo et al., "Mobile broadcast services with MIMO antennae in 4G wireless networks", proposes a novel and holistic data broadcast management approach in 4G wireless networks with multiple-input multiple-output (MIMO) antennae. The approach has the potential to achieve substantial efficiency for mobile computing clients when retrieving data on-air. The paper by Mizzaro and Vassena, "A social approach to context-aware retrieval", reports the design and implementation of the *Social Context-Aware Browser*, a generic solution for Web information access based on context. The contextual knowledge is managed by community of users through collaboration and participation.

The paper by Li et al., "Privacy-aware access control with trust management in Web service", focuses on privacy and proposes a privacy-aware access control model for trust management in Web service environment. Finally, the last paper by Cheng et al., "A user centric service-oriented modeling approach", presents a user-centric approach for dynamic Web service selection. The approach is able to reason over a set of inconsistent fuzzy requirements into required services and model software and hardware as services to meet the dynamic requirements.

The papers included in this special issue cover several important topics and present some of the key directions in this vibrant and rapidly expanding area of research and development. We hope that the set of selected papers provides the community with a better understanding of the current directions and areas to focus in future, and inspires your own work.