The Internet's deep impact—Letter from the Editors-in-Chief

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With this issue, we begin the second year of JISA. The three issues published in the first year addressed multiple aspects of research on the science and technology around the Internet. The themes covered so far included history, human aspects, security, performance, routing, replication, spam, search, cyber-physical applications, digital TV, and others.

Even in the short period since JISA was launched, the impact of the Internet and its related technologies on everyday life has increased significantly. We observed a great growth in the access of the overall population to smartphones, which enable communication with the Internet, anywhere, anytime or, to be honest, almost anywhere, almost anytime... Tablets such as Apple's iPad, running iOS, and Samsung's Galaxy Tab, running the Linux-based Android system, provide an even more enjoyable experience with ample processing power, larger screen sizes, and more intuitive multitouch interfaces. Specific app stores for these devices provide thousands of applications that explore innovative interfaces and location-based services to provide interesting new ways of interacting with the surrounding world via the Internet. There is still a long way to go before these technologies are available for the majority of the world population and for them to be as easy to use and as transparent as we wished. But Mark Weiser's dreams of ubiquitous computing from over 20 years ago are now slowly starting to become true.

Another dream that Internet enthusiasts shared in the past was that the Internet would help promote democracy, facilitating the dissemination of knowledge and information. Instead of relying on powerful news agencies and "big media" to decide which information would be made available to the masses, the Internet would let any individual become a publisher of information and novel, peer-to-peer ways of knowledge dissemination would emerge. Recently, we saw this happening, at different scales, in a wave of popular demonstrations against dictatorial regimes in North Africa and in the Middle East. In one particular case, Egypt, the Internet played a central role, facilitating popular organization via online social networks and serving as a catalyst for the movement. It is emblematic that an employee of Google was one of the most important figures behind the movement that overthrew the president who was in power for 30 years.

On the other hand, the Internet with its cloud services, social networks, and the like stores personal and secret data in, often, fragile repositories subject to the action of crackers. In April 2011, the PlayStation network managed by Sony was invaded by crackers (malicious hackers) that stole personal information from millions of users. As a result, Sony closed access to the network for three weeks, affecting not only its 77 million users but the credibility of the company itself.

In the first issue of our second year, we address the impact of the Internet from multiple points of view. We start with an interview with five top scientists from five key industrial players in the field of Cloud Computing. Walfredo Cirne from Google, Dejan Milojicic from HP Labs, Raghu Ramakrishnan from Yahoo!, Dan Reed from Microsoft Research, and Dilma Silva from IBM Research answer nine questions about the nature and future of Cloud Computing.

We then continue with three research papers. We start by reviewing the past; Tony Wasserman from Carnegie Mellon University Silicon Valley tells us the fascinating story of "How the Internet Transformed the Software Industry". He shows how the Internet affected software companies; soft-

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ware development, marketing, and sales; and software itself. He also emphasizes the important role that open source has played and discusses possible next steps in this evolution.

Next, Valerie Issarny et al. present the state-of-the-art and discuss research directions in the field of "Service-Oriented Middleware for the Future Internet". Service-oriented computing is now a central paradigm for the Internet. However, the authors state that service-oriented computing has to face the ultra large scale and heterogeneity of the Future Internet, which are orders of magnitude higher than those of today's service-oriented systems. The paper then identifies key research directions to be followed, focusing on challenges for service-oriented middleware design, investigating service description, discovery, access, and composition in the Future Internet of services.

In the last paper of this issue, Mohammed Hussain and David Skillicorn address the important problem of privacy in the Internet. As we saw in the PlayStation network case, the exposure of personal data and actions publicly is often a negative impact of the Internet and this tends to become even more relevant as the Internet becomes an integral part of our lives. Their paper presents an anonymous reputation management system that avoids the linkability problem, i.e., the ability of a system to use data mining techniques to identify individuals that provided feedback anonymously. This is achieved by constructing a system that empowers individuals to interact and rate service providers, secure and anonymously.

In this second year, JISA will feature special issues on Cloud Computing and on Service Modeling and Design for the Future Internet. We hope you enjoy reading this issue as well as the next ones that will come out in a few months. As always, we expect contributions from the Computer Science community with paper submissions to the journal. We look forward to working with you.

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