

ASIS&T ANNUAL MEETING PLENARY SPEAKER

Jorge García Highlights 2013 ASIS&T Annual Meeting

by Steve Hardin

2013 Annual Meeting Coverage

EDITOR'S SUMMARY

At the 2013 ASIS&T Annual Meeting, Jorge García discussed the transformation of new information technologies from imagined abstractions to reality. Through old and current advertisements and interviews with futurist Arthur C. Clarke and communication theorist Marshall McLuhan, García illustrated the progressive revolutions embodied by the telephone, a shift from commuting to communicating, early visions of the Internet, new media and big data. Handling the change requires a continuous process of abstracting reality, augmenting, assimilating and creating models to represent its key features. García recognized data as an asset to be distilled and classified, stored in expanding volumes and transmitted at astounding speeds. Layered with contextual information and supportive technology, data can be used to enhance human intelligence and capability. García closed with an admonition to limit potential negative effects of technology by implementing clear and ethical practices in data and information use.

KEYWORDS

information technology

trends

innovation

computer mediated communications

information models

ethics

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New information technologies begin as abstractions and ultimately assimilate into human life. Jorge García – a senior analyst with Technology Evaluation Centers – described the process at the keynote session at the ASIS&T Annual Meeting in Montreal on November 3, 2013.

García began by offering accounts of how information and technology were viewed in the past. He showed an old ad: “Chat with your family and friends – even when they’re miles away.” Visionaries and futurists were able to envision today’s world. They already had an impression of how we deal with information today.

He showed a 1964 interview with author and futurist Arthur C. Clarke. Clarke predicted that the city as it existed then would not exist in the future. Technology, he said, would make possible a world where we would be in instant contact with friends around the world. People won’t commute; they’ll communicate. Clarke said we might have brain surgeons in Edinburgh operating on patients in New Zealand. The whole role of a city as a meeting place will cease to exist. García noted that, of course, we still commute to the office, but we all have the idea that we should communicate.

García showed a slide outlining a circular process. The real world leads to an abstraction, which leads to augmentation, which leads to assimilation, and the process repeats.

In the abstraction portion of the cycle, we take reality and make an abstraction of its most important features. Then we create a model to represent it. The idea is to enable people to communicate. It involves extracting the most important aspects of data transmission and creating a model from that.

García presented another video showing how people envisioned the Internet 50 years ago. It showed a woman in the future shopping from home: a camera showed wares; a woman made her choices by pushing a button. A

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console maintained a watch on her home. What the wife saw on her console was paid for by her husband at his console. (The audience gasped and laughed at *this* visionary assumption.) At the touch of a button, the husband got a printout of the family's financial situation. Also at his disposal was a home post office that allowed for instant communication worldwide. A monitor checked circuits every few seconds and inserted backups as necessary. García remarked that the idea of having a central place where information would reside was already established 50 years ago. People already understood how important communication would be.

"The medium is the message," Marshall McLuhan said. It's not just about content – it's about how we communicate. A 1960 interview with McLuhan showed him stating that everything points in direction of "tribal man" and away from "individual man." "We're getting rid of individuals," McLuhan said. García noted that as books are being replaced by new media, we won't be so concerned with self-definition and finding our own individual way; we'll be selecting with the group instead of apart from it. Print as a medium changed our sense of ourselves in the Middle Ages. New media will do the same.

A 1965 Marshall McLuhan video posed the question: "Why do wheels continue to carry us downtown?" All the materials that can be accessed downtown could be available on closed circuit back home. But, he said, we still have an obsessive drive to fit into patterns and classifications. García said McLuhan knew we have an obsession with data. Back in 1965, futurists knew we'd face the challenge of data moving with many different speeds, types and sizes. They saw the rise of social media. Among U.S. adults, one in three persons aged 65 or more now uses a social network. The challenge is to generate the right models to interpret this data explosion.



The data explosion, García said, consists of huge amounts of data coming with many different names. Some call it *Big Data*. We are very concerned with real time. García said he get lots of questions along this line: "I want to conduct my business in real time." Maybe that's not the concern – the concern is for business to handle data at different speeds in different times. Data is now polystructured. It comes with variety.

Some experts think that by 2020 we'll have 35.2 zettabytes of data stored somewhere. One zettabyte equals roughly one-quadrillion gigabytes. How will we store that much data?

One approach to the problem is cloud computing. Data is stored on servers not necessarily within our firewall. We've also sorted information into various classifications. We need to abstract those models because we know social media is a huge business nowadays. Data is now an asset.

Data can be used as a process of augmentation. Steve Jobs used to say a computer was like a bicycle for the brain – an enhancer of our intelligence. So we're looking for ways to use data as an enhancer. One example: mobility. We expect that in near future, mobile gadgets will be surfing the web more than traditional desktop gadgets. Does more human information mean less human interaction? We now realize information is being stored without us knowing about it. Some of it is produced by humans, but some is not. For every interaction we do on the Internet, there are some of which we're unaware. Let's use that information and try to augment our capabilities, he said.

García showed a video from Space Time Insight. This company collects huge amounts of data and uses it to help make better decisions. There was a big blackout in the northeastern United States that led to 11 deaths in 2003. California responded with "situational intelligence" – like looking at an

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MRI (magnetic resonance image). The benefit is letting the consumer know what the real price of electricity is. We need not only new technology but to become better integrators of that technology.

Consider the Reactive Manifesto (www.reactivemanifesto.org/): García doesn't entirely agree with it, but it presents a very good case to lead us into what we need to build modern systems. We need to build systems that are reactive by nature. They need to react to the load of data, to events, to failure and, most importantly, to users and their needs.

Event-driven design is becoming increasingly important in the industry. We need to create a virtual cycle to handle our roles as information producers and consumers. If we create systems that are naturally scalable and resistant to failure, we will be able to create systems that will be more transparent, provide the context we need and provide resiliency. That enables us to build systems that are even more reactive. If we achieve the ability to guide reactions, we could achieve not only the ability to be reactive but proactive.

If we abstract the necessary data, we can add layers to our data: augmented reality. It's simple to describe – we put layers of contextual information on top of a real object. This enables the user to react to it and learn from it in the best possible way.

García showed another video: an ad showing you how you can work using augmented reality glasses; you can do more when you know more about objects you're using. He said the important question is, "How can we approve our data in real time?"

The most important part of these technologies is their relationship with data systems. The process of assimilation, as he sees it, makes things less disruptive, less distractive and friendlier. He showed a Microsoft video of total assimilation, a view of the future in five to 10 years. It predicted the digital and the physical would come together. New interactive surfaces will let you bring your ideas to life naturally. Work and create freely on whatever device you choose. Technology can amplify our senses, transform the world we care about and help us live, work and play.

García's final video pointed out a remaining problem: every piece of technology has a good and bad side. The semantic web can expand access to information, but can also make it easier to block content. Digital identity management can enhance privacy and security but can allow collusion and profiling by identity keepers. Privacy, accuracy, property and access are all valid concerns. How can we be secure? How can we protect ourselves from misleading information? We need to take these concerns into account while we're creating this technology. Information ethics argues that we must discover what is good for an information entity and the infosphere in general. We need to discover what is good and bad for us.

A few weeks ago, he read a paper that called for an ethical code for data practices. We need clarity of practices – we need to tell people how we collect, process and deliver information. We need simplicity of privacy settings. We need to design information systems with privacy in mind.

He closed with a quote from Victor Hugo: "An invasion of armies can be resisted, but not an idea whose time has come." ■