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Editorial Column

New Directions in Service Science: Value Cocreation in the Age of Autonomous Service Systems

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I recently found myself in a conversation on the nature of service, what makes service different, and what makes studying service difficult. Actually, I often find myself in these kinds of conversations. It can be hard to understand why there might be need for a discipline focused exclusively on service. It can be hard to understand what makes service unique. It can be hard to understand when tried-and-true methods may not apply to certain service settings. I have been at this for nearly 15 years, and I am sometimes weary of having these conversations. Yet this particular conversation opened up my thinking about service, particularly in the context of technologies that act autonomously and without human control.

I first learned what service was in a paper by T. P. Hill (1977), which defined service crisply as “a change in the condition of a person, or of a good belonging to some economic unit, which is brought about as the result of the activity of some other economic unit, with the prior agreement of the former person or economic unit” (p. 318). Later, Bob Lusch directed me to an even crisper definition: “the application of competence... for the benefit of [others]” (Vargo and Lusch 2004, p. 14). These definitions are consistent but emphasize different things: Hill emphasizes agency, action, and change, and Vargo and Lusch emphasize expertise, capabilities, and value creation. Together, they form the basis of my definition of service, namely “value cocreation,” useful change that results from deliberate action by multiple entities (Spohrer and Maglio 2010, Maglio and Spohrer 2013).

Through my role as editor-in-chief of *INFORMS Service Science*, I have worked to ensure that there is some common understanding of the nature of service running throughout—not exclusively my view, but some clear view on the nature of service—and that reports of research move forward an understanding of value cocreation phenomena, service phenomena. And to some extent, we have been successful, focusing on value creation, systems and modeling, and technology and innovation (see Figure 1). In 2016, *INFORMS Service Science* added area editors for healthcare applications and service operations and management, was indexed by Thomson Reuters’ Web of Science, and received a record number of submissions. All of these aim to serve the community and help to push forward the new science of service.

But back to my story. I was describing *INFORMS Service Science* as incorporating a variety of disciplines, methods, and application areas, all aimed at understanding, modeling, and improving service or value cocreation phenomena

Figure 1. Top 100 Representative Words in *Service Science* Titles, Abstracts, and Keywords from 2013 to 2015



(see also Maglio 2013, 2014, 2015b), and was asked about the role of technology, particularly the role of autonomous technologies in value creation. After all, through the use of data analytics and deep learning, modern technologies are enabling ever more autonomous actions in real-world system settings: modern train systems may be autonomous, building control systems may be autonomous, financial investment systems may be autonomous, and automobile transportation systems may be autonomous, among many others. So I described how the sorts of service systems of primary interest are human-centered but in fact continually incorporating technology with ever more capabilities and functions, such as technologies capable of acting alone in specific settings without human intervention (Maglio 2015a; see also Larson 2016 and Medina-Borja 2015). Even though I answered the question at the time, the conversation got me thinking again about the nature of service phenomena, about the essence of service. It seems that in this context of *autonomous* service systems, fundamental notions of agency and of value might be slipperier than I had once thought. Who or what exactly is responsible for effecting change when autonomous technologies are involved? Exactly how can value be *cocreated* among people and autonomous technologies?

For years, my work has focused on how value emerges from interactions among actors and things, with the actors applying their specific capabilities in context so that all participants are better off in the end (Maglio and Spohrer 2013, Vargo et al. 2008). The idea that service depends on a system of actors and their capabilities is very powerful, and it is key to service. But what happens when actors are machines, taking deliberate action on their own, making effective changes but without specific direction by people? If my car drives me to campus by itself, certainly value was created because my location changes from where I was to where I need to be, but can we really say that my autonomous vehicle and I cocreated value together? I mean, what is in it for my car? And as autonomous technologies improve over time, there will only be more questions—these issues are not going away (see also Maglio and Lim 2016).

This line of thinking reminded me that in many ways, service is like language use. Specifically, using language may be thought of as a process by which multiple participants interact by exchanging words to build common ground (or common mental models) to achieve mutual understanding (Clark 1996). There is a lot of structure and convention in language and discourse that enable effective language interactions. The key is that understanding (i.e., value) emerges from language interactions between human participants—it is always cocreated. But what if I am reading a book, or interacting with a computer interface, or conversing with an autonomous intelligent agent, such as Apple Siri or Google Home or Amazon Echo? Who exactly am I cocreating my understanding with? On one view, the book or the technology is a kind of appliance that encapsulates some human capabilities, mediating interaction with the book author or technology creator (Clark 1999), though people often treat interactive technologies as if they have human-like agency themselves (Reeves and Nass 1996). Understanding is always established between people, even if sometimes artifacts and technologies are in the middle. But this seems like a slippery slope: What of *real* autonomous technologies, ones that go beyond what the author or creator specifically wrote—or ones that appear to have their own ability to deliberate, their own agency? The answer is that I do not know. And maybe this calls into question the foundation of our understanding of service as value cocreation. Certainly, it opens up whole new research questions concerning the nature of value cocreation and the relationship of people and technology in service systems. For example, it is not always clear what should be automated, or whether and when automation will improve overall system performance; little research addresses service design questions of what *should* be automated and under what conditions. *INFORMS Service Science* will be on the forefront of asking and answering these questions for years to come.

References

- Clark HH (1996) *Using Language* (Cambridge University Press, Cambridge, UK).
- Clark HH (1999) How do real people communicate with virtual partners? AAAI Fall Symposium, "Psychological models of communication in collaborative systems," North Falmouth, MA, November 5–7.
- Hill TP (1977) On goods and services. *Rev. Income Wealth* 23(4):314–339.
- Larson RC (2016) Smart service systems: Bridging the silos. *Service Sci.* 8(4):359–367.
- Maglio PP (2013) Editorial—Service Science 2.0. *Service Sci.* 5(2):85.
- Maglio PP (2014) Editorial column—On methods, disciplines, and applications. *Service Sci.* 6(4):i.
- Maglio PP (2015a) Editorial—Smart service systems, human-centered service systems, and the mission of Service Science. *Service Sci.* 7(2): ii–iii.
- Maglio PP (2015b) Editorial column—Metaphors of service and the framing of service science. *Service Sci.* 7(4):iii–iv.
- Maglio PP, Lim C (2016) Innovation and big data in smart service systems. *J. Innovation Management* 4(1):11–21.
- Maglio PP, Spohrer J (2013) A service science perspective on business model innovation. *Industrial Marketing Management* 42(5):665–670.
- Medina-Borja A (2015) Editorial column—Smart things as service providers: A call for convergence of disciplines to build a research agenda for the service systems of the future. *Service Sci.* 7(1):ii–v.
- Reeves B, Nass C (1996) *The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places* (Cambridge University Press, Cambridge, UK).
- Spohrer J, Maglio PP (2010) Toward a science of service systems: Value and symbols. Maglio PP, Kieliszewski CA, Spohrer JC, eds. *Handbook of Service Science* (Springer, New York), 157–194.
- Vargo SL, Lusch RF (2004) Evolving to a new dominant logic for marketing. *J. Marketing* 68(1):1–17.
- Vargo SL, Maglio PP, Akaka MA (2008) On value and value co-creation: A service systems and service logic perspective. *European Management J.* 26(3):145–152.