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Searching for the Meaning of Digital Technology: How is it Different from Information Technology?

Research-in-Progress

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ABSTRACT

The first step of science is to know one thing from another. ... Distinct names must be given to different things, and those names must be recorded and remembered.

- Carolus Linnaeus, *Systema Naturae* (1738) cited in Larsen & Bong (2016)

Information technology is at the heart of IS scholarship. In the past decade, IS researchers took much interest in a seemingly different type of technology: digital technology (as well as its cousins, such as digital innovation and infrastructure) (Baiyere et al., 2019). As scholars, we must be cautious and skeptical about the *theoretical distinctiveness* of the ongoing digital relabeling, no matter where the paper is published.

I invite you to fill the gap in the quotes below either with information or digital:

“During the last four decades, _____ technologies have disrupted many industries. Car control systems have gone from mechanical to digital. Telephones have changed from sound boxes to portable computers.” Rahmati et al., (2022, p.1025).

“_____ technologies are viewed as combinations of information, computing, communication, and connectivity technologies” (Bharadwaj et al., 2013, p.741).

Also, I would like you to fill the gap below either with IT or digital:

“Accordingly, _____ infrastructures can be defined as the basic information technologies and organizational structures, along with the related services and facilities necessary for an enterprise or industry to function” (Tilson et al., 2010, p. 748).

Yes, the answer to all three is surprisingly digital. Example digital technologies include “computer systems and peripherals, smart devices, mobile apps, emails, blogs, electronic health records, online videos, 3D printers, and enterprise systems” Faulkner & Runde (2019, p.1279). More examples include “iPad, the Internet, digital video, computer file software bug, PC, Wikipedia, and database” (Kallinikos et al., 2013, p.359). “Routers and transmission equipment” are examples digital infrastructures (Tilson et al., 2010, p.752).

Some researchers argue that digital technologies are different in that they are continuously socially constructed (Kallinikos et al., 2013). Note that this sociotechnical nature is, however, a key aspect of information technology (Sarker et al., 2019).

What is the problem of using the term digital technology to refer to information technology, which IS researchers have been studying for decades? Three key problems rise. First, it hinders a cumulative tradition (Larsen & Bong, 2016). Doctoral students or anyone who plans to examine digital technology may overlook the literature on information technology. Second, reviewer confusion happens. Specifically, some reviewers may see the notions and theories developed through “IT” are not relevant or insufficient in the current era. Papers applying the “old” notions and theories could be unnecessarily criticized or even rejected altogether. Lastly, practitioner confusion happens. In the industry, digital technologies tend to refer to front-end technologies (e.g., social media) and IT refers to the back-end ones (e.g., infrastructures).

Having all that said, I do think there are advantages of relabeling information technologies as digital technologies. First, relabeling directs our attention to different aspects of information technology, such as IT’s role in facilitating everyday activities (e.g., running, sleeping). Second, the relabeling facilitates our conversation with other disciplines that also examine digital “something”, such as digital products and entrepreneurship.

I will review key IS journals and identify the usage of the term digital technology. It will be an inductive project.

Keywords: digital technology, information technology, information systems discipline