Chapter 72
Informating Public Governance:
Towards a Basis for a Digital Ecosystem

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ABSTRACT

This treatise explores the possibilities and constraints to informate public governance. Informating as used in this context refers to the ability to technically control / steer the core provision of public governance by means of information technology, rather than steering public governance through political policies. Thus informating governance is about technology-enabled direct control of public service provision, in contrast to electronic or digital governance, which is about technology for government agencies. Well-established disciplinary theories from political sciences, sociology, and jurisprudence on public governance are explored to establish a foundation for understanding governance informatability, and a shared semantic context is established, to align the complex concepts of governance provision, and governance informatization. Based on thus established trans-disciplinary foundation, it is argued that a natural evolution of dedicated technological ecosystems can take place.

1. INTRODUCTION

The unprecedented disruption of human society caused by the discovery and evolution of information and communication technologies of the past few decades has radically transformed many areas of human interaction: new economies arose based on radically new forms of telecommunication, new production models emerged, new service industries became possible. A crucial role in these transformations play modular, generic technologies, which enable the emergence of technological ecosystems catering to designers and developers, thus unleashing self-motivated innovation potentials that drive the further evolution of technology and societal transformations.

Ecosystems can be generally defined as self-balancing systems of loosely coupled actors interacting in a shared domain, whereby the interaction is centered around the shared resources (goods, information, services, ideas, etc.) of the ecosystem's domain (cf. Gretzel, Werthner, Koo, & Lamsfus, 2015). The concept of an ecosystem is relative to the perspective on the ecosystem as such, allowing for overlapping, or cascading ecosystems to co-exist: the forest can be seen as a macro-level ecological ecosystem of

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animals, plants, microorganisms, etc. Overlapping with the ecosystem of the forest are e.g. the economic ecosystem of the wood industry, or the economic ecosystem of the hunting culture. Latter two are both overlapping with the monetary ecosystem, etc.

Technological ecosystems are then those ecosystems, which are characterized by the crucial reliance on specific technologies, such as e.g. centered around the provision of Web technologies, where the technological ecosystem includes engineers, standardization bodies, technology evangelists, toolset developers, etc., devoted to providing resources for Web development. Based on technological ecosystems, advanced ecosystems can emerge, such as the ICT-based online provisioning of tourism services (Gretzel et al., 2015), distributed Internet security (Schmidt, A., 2014), or ICT (information and communication technology) platforms (Raymond, 1999). Such ICT-based ecosystems can then be called digital ecosystems (Gretzel et al., 2015).

Ecosystems require a focal point, around which they evolve: the technical ecosystem focused on Web technologies is centered around the core technology stack comprised of technologies such as HTML, HTTP, CSS, etc. The Web's "big bang" in the late 1990ies propelled these base technologies to a level, where they serve as the "center of the universe", around which activities within this technological ecosystem revolve. Taking the Web's technical ecosystem as a focal point, Web-based economies and ecosystems could emerge.

The aim of this paper is to synthesize theoretical knowledge required to build towards a core technology stack for an ecosystem to control public governance by means of ICT. More specifically, this paper aims to provide answers to following research questions:

1. What makes up public governance?
2. How can public governance be controlled through information technology; i.e. how can public governance be informated?

The first question is relevant in order to understand how public governance is made up in connection with the second research question, which aims to understand how it can be controlled by means of technology. Both questions shall remain rooted in the context of technology, i.e. the sought-for answers should provide knowledge for the domain of design science research. This perspective is novel and challenging on its own, since it involves a trans-disciplinary approach to synthesize knowledge from heterogeneous disciplines. While disciplinary theories from e.g. law, social science, or political science, present well-established models how to explain public governance from the perspectives of their respective disciplinary foci, the relevance of these models for the design of technology needs to be further explored.

The ability to control/influence a system from within an ecosystem by means of ICT is referred-to throughout the paper as informating. This paper shall aim to delineate this term more precisely, in order to demarcate it from the commonly used term computerizing, which refers to the application of ICT to control/influence a system. This term is not yet established in science, and is here introduced to be used where the latter two terms are not applicable.

The structure of this paper is organized as follows: Section 2 focusses on the first research question, aiming to elaborate a workable definition of how public governance can be seen from a technical perspective. Section 3 shall introduce and delineate the term informating, and aim to position it as an advanced concept to control structure. For sake of comprehensibility, due emphasis shall be laid on demarcating informatization from computerization, and former's role in the shaping of the digital dimension shall