Extracting Citizen Values as Inputs for Designing Citizen-Responsive Urban e-Planning Services: The VOICE Approach and a Demonstration in the Healthcare Context

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ABSTRACT

In the context of smart cities, the design of services requires something more than an understanding of functional requirements. It requires an appreciation of basic human values. Based on interviews with citizens in a large city, and an intensive text analysis – the authors describe how such values may be inferred. The authors find that this process of inferring values must account for both real and imagined experiences of citizens, and it can reveal both conflict and congruence among different values. Based on the authors’ investigation, they describe it as the VOICE approach, and discuss the implications of how such the use of such an approach can influence the design of citizen responsive e-planning services.

Keywords: Citizen Experience, Health Services, Human Values, Service Design, Smart Cities

1. INTRODUCTION AND MOTIVATION

Much urban development and urban planning research during the pre-digital age focused on policy-level interventions to address the challenges faced by a city. Following this perspective, scholars viewed cities as a collective of millions, instead of individual citizens. The advent of information technologies (IT) has led to a reconceptualization of this view—similar to the changes introduced in several other domains (e.g., personalization and mass customization). Although applications of ‘big data’ aimed at urban challenges and citywide policy initiatives are on the rise, we find that the potential for IT can also be seized in a different manner – by focusing on services for individual citizens (Pas-
kaleva, 2009) in response to specific demands and preferences of different population segments, specific situations, and even individual citizens. The vision we describe is similar to that suggested by Dunleavy et al. (2006) as digital era governance. The IT infrastructure, including technology layers and standards, needed to realize this vision is fast becoming a reality. Such a vision—for citizen-responsive e-planning services—presents significant promise as well as considerable challenges because of the need to bridge a number of perspectives: the technological, the political and the personal. The challenges point to areas where research efforts may be directed, e.g. service design, coordinating across government agencies, budgeting and resource optimization, and privacy and security concerns related to data sharing among others. The focus of our research relates to an important foundational concern that remains a pre-requisite for several of these challenges. Specifically, we conceptualize the problem as one of translation, i.e. moving from citywide policies to services for individuals; and to do so, extract and represent citizen values (Purao & Wu, 2013).

The idea of respecting citizen values for policy making and service provision is not new in the literature. Policy makers acknowledge the importance of considering human values of citizens when planning and implementing new policies (Rowe & Frewer, 2000). Scholars have argued that incorporating values into the design of citizen services is a way to allow designers to look beyond the functional capabilities of government agencies, and respond to the ethical and moral demands inherent in the design of citizen services (Purao & Wu, 2013). Contemporary news reports also point to the importance of human values. For example, Beam (2014) reports how angry patient family members attacked doctors in China because they felt that the waiting time was too long and the needs of the patient were not attended (Beam, 2014).

Existing alternatives for software and information systems design (Babar & Lescher, 2014) focus on functional requirements. They are, however, not adequate in the context of designing citizen-responsive services because they do not allow express recognition of citizen values. Elsewhere, scholars have investigated the notion of values in the context of designing information systems. One example is value-sensitive design, which is a theoretically grounded approach that accounts for human values throughout the design process (Friedman, Kahn, & Borning, 2002). For example, research is conducted to understand the role of trust and other values in providing e-government services (Jaeger & Fleischmann, 2013). Another suggests a design way, to move towards values-inspired design which aims to design information systems that can facilitate the shaping of work, life or society by following the values we value (Purao & Wu, 2013). Values-inspired design is an approach that clarifies how values can inspire design efforts (not merely make the designers aware) so that the designers can create interactions that can serve as guideposts (Purao & Wu, 2013). These perspectives have been applied for the design of groupware, web browsers, and many other information systems.

In spite of ongoing efforts to incorporate values into design, one major challenge remains: an inconsistent or incomplete understanding of what the values actually are. Many values can influence the design of smart citizen services, such as transparency, efficiency, justice and others (Bannister & Connolly, 2014). Some of these values represent individual values, others are community values, yet others represent societal norms. Such diversity can make it difficult to understand as well as extract these before addressing questions related to practical application of these in the design of services or other software related outcomes. Given the myriad sources and levels at which values can be expressed and understood, scholars suggest using universal human values as the basis of analysis (Schwartz, 1992, 1994, 2009). These human values include ten motivationally distinct types of values: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security (Schwartz, 1992, 1994), believed to be recognized by people in all cultures. In the work...
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