Chapter 11

Personal Smart Cards: From Transportation to a City Smart Card—The Database Integration of Public Services in Curitiba

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ABSTRACT

An effective information management is one of the most valuable assets of any organization, including public administration. Database integration from various municipal Information Systems is an essential tool for urban and strategic planning. The city of Curitiba, Brazil, has implemented several Information Systems to enhance its public services, from education to health care—most of these systems use several non-integrated personal smart cards to provide access to services. In this chapter we analyze some public Information Systems in use in Curitiba, and their inputs and outputs. We also advocate that the personal smart card already used in the metropolitan transportation system only as a fare collection card, is, among all others, the best option, from a technological and administrative standpoint, to integrate all municipal Information Systems, improving the effectiveness of public services and assisting for a comprehensive planning process.

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INTRODUCTION

Information is a main key to understand and manage many aspects of contemporary society. As we are immersed in a global network of ubiquitous and pervasive technologies, most exchanges of data that permeate our lives are invisible, but represent, at the same time, the very essence of today’s life. Both private and public sectors base the provision of products and services on an information exchange with their clients – consumers or citizens. From granting access to some places, to the individualization of services provided for specific clients, the information transactions among consumers and companies involve the exchange of personal data. The same occurs with the access to public facilities and services.

Information technology systems (ITS) allow this data exchange. Therefore, an effective information management is one of the most valuable assets of any organization, including public administration. The city of Curitiba, Brazil, has been using ITS to enhance different public services, as to control the access to public schools or to follow the medical history of patients in health care facilities. Most of these services in Curitiba are mediated by a personal smart card, which is the main focus of this chapter.

The transportation system of the Metropolitan Region of Curitiba is one of the biggest public services that has adopted the personal smart card in the last decade. Implemented in 2005, the use of the transport card (cartão transporte) is not mandatory, but it has been increasing over the years – in 2006, 44 percent of the passengers were using the transport card as a mean of payment (more than twice the percentage of usage just after its implementation).

Like other smart cards adopted by the public administration in Curitiba, the transport card holds personal information about its users. However, each public service has its own card, holding only a few data, which differs from the information held by other services’ smart cards. It means that, to make use of more than one kind of public service, a citizen must carry different smart cards together and, consequently that, the databases of different public services are not integrated – what questions the smart side of this technology.

The main argument of this chapter is that from a strategic point of view, the adoption of a single personal smart card for all municipal services could help building a comprehensive citizen’s database that could enhance public services and assist a comprehensive planning process. We also advocate that the personal smart card already used in the metropolitan transportation system only as a fare collection card, is, among all others, the best option, from a technological and administrative standpoint, to integrate all municipal information systems, improving the effectiveness of public services.

We begin by briefly discussing the use of ITS in a context where ubiquitous and pervasive technologies are an inherent part of many mundane activities of our daily life. As the exchange of individual data is becoming omnipresent for the delivery of high quality public services, the adoption of personal smart cards (PSC) spreads worldwide in the municipal level. Technologically, PSC is an appropriate identification tool, but some concerns of possible misuses of private data are a key issue and will also be discussed here.

The use of PSC in public transportation is seen in this chapter as a viable strategy for integrating different public databases, as it allows the understanding of some urban dislocation patterns over time on a specific territory – what can be a valuable asset for many other public policies. Therefore, an overview of PSC adoption in transportation will be presented. The case study discussed here is the city of Curitiba, in the South of Brazil. Curitiba, a 1.8 million people city, has adopted PSC in different public services and has a metropolitan transportation system well structured that guides the distribution of public facilities.

Based on ITS and PSC already in use, it would be possible to develop a model of a municipal
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