Enhancing Electronic Governance in Singapore with Government Portals

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INTRODUCTION

The World Wide Web represents one of the most profound developments that has accompanied the evolution of the Internet. It is truly a global library. Information on the Web is increasing exponentially, and mechanisms to extract information from it have become an engaging field of research. While search engines have been doing an admirable job in finding information, the emergence of Web portals has also been a useful development—their distinct advantage lies in their positioning as a one-stop destination for information and services of a particular nature.

A Web portal can simply be defined as an online gateway for accessing specialized information and services. It services a niche audience. There are several kinds of Web portals, which have evolved over the years—community portals, government portals, knowledge portals, consumer portals, and so on (Firestone, 2002; Katz, 2000; Looney & Lyman, 2000; Mack, Ravin, & Byrd, 2001). These portals are more than just Web sites—they host domain-specific content as well as provide access to specialized services for its community of users. While Web portals are generally developed by specialist expertise, many also rely on collaborative provisioning of information by their user community.

Looney and Lyman (2000) describe the role of a portal as follows:

…portals gather a variety of useful information resources into a single one-stop Web page, helping the user to avoid being overwhelmed by "infoglut' or feeling lost on the Web.

Search engines are generally regarded as first generation portals. Ordinary Web portals are basically collections of links to diverse Web sites—as the links between them are rather tenuous or are not organized in a coherent format, information retrieval is often not efficient (Woukeu et al., 2003). It's when the disparate resources in a portal are weaved together to provide a coherent view of the domain of interest that elevates it to be a truly Web-based portal (Staab & Maedche, 2001). Such links can help to transform loosely linked collections of Web resources into a semantically in-terconnected collection (Woukeu et al., 2003). The potential of portals to affect transformation and reach out to distinct user groups has been recognized by many institutions, and many have set up their own portals (Katz, 2000).

The principal objective of this article is to explore the e-citizen portal of the electronic government in Singapore. There are a number of specialist portals on the Singapore e-government Web site—for example, government-to-business, government-to-consumer, etc. Our focus is, however, on the e-citizen portal as this is the most widely used of the various portals. As Singapore was among the early entrants to the e-government movement, since the offerings on its e-citizen portal are very comprehensive, and because it has won a number of awards, it is suggested that there are aspects of the Singapore experience, which would be of relevance and interest. The Singapore e-government is located at http://www.egov.gov.sg

BACKGROUND

Government portals are a development, which was precipitated by the rise of the Internet in the mid 1990's. It began in the USA in 1995 when about 9% of state governments had a Web presence that hosted information and basic services (Sprecher, Talcove, & Bowen, 1996). The figure went up to 40% by 1997 and by 2001, about 84% of state governments in the USA had been Web-enabled (Holden, Norris, & Fletcher, 2003)

The Singapore experience with e-government also started in 1995 with a Web presence featuring information and services. As the e-government movement was then in its infancy, there was little guidance on best practices and implementation issues that Singapore could draw on. However, with the evolution of the e-government movement, availability of technological tools and political support, the e-government in Singapore has matured tremendously over the years. (Tan & Subramaniam, 2005).

The e-government movement has moved upstream over the years and many counties have recognized the importance of having an effective Web presence (Cohen & Eimicke, 2003;

Heeks, 2000; Jakob, 2003; and Janssen, Wagener, & Beerens, 2003). Portals on e-government Web sites represent a useful link for providing convenient services to people.

Infrastructure for E-Government

Telecommunications platforms leveraging on five different technologies are in place in Singapore to support access to the e-government:

- Asymmetric digital subscriber line (ADSL) for broadband access.
- Hybrid fiber coaxial cable modem (HFCM) service for broadband access.
- Asynchronous transfer mode (ATM) for broadband access as well as for linking ADSL and HFCM to the ordinary telecommunications network.
- Public switched telecommunications network for narrowband access.
- Wireless access.

These have been described in detail by Tan and Subramaniam (2000, 2001, 2003).

The e-government architecture rides on the public services infrastructure (PSI), which comprises a three-tier framework (http://www.sun.com/br/government/feature_psi.html):

- An infrastructural ICT framework as the background layer.
- A central tier, which links all government agencies so that data can not only be hosted centrally but the database software of these agencies can also be integrated for seamless operation.
- An applications layer that features security and validation protocols for fiscal transactions.

In this way, all government agencies are able to realize operational synergies as well as cost savings. Another advantage is that the modular architecture of the PSI allows for operations to be scaled up when necessary.

E-Citizen Portal

In today's digital society, citizens still need to interact with the government for a variety of their needs. While the offline government functions mainly on weekdays and during certain hours, the e-citizen portal in Singapore operates 24/7. It was established in April 1999. A wide variety of services that people require are available in this portal (http://www.ecitizen.gov.sg). This portal alone contributes to a savings of S$40 million a year.

Featuring over 1,600 online services, it comprises 16 categories that broadly reflect the common needs of citizens. The provisioning of offerings based on the principal stages in a person's life is emulated even by other e-governments. The more important of the services in this portal are outlined next:

- **Business:** Registering a company, applying for a patent, getting a license or permit, etc.
- **Defence:** Allowing male citizens to register for national service, allowing them to apply for an exit permit to travel overseas, allowing reservists to book a date for their annual individual physical proficiency test, etc.
- **Education:** Searching for information about schools in Singapore, registering for national level examinations, applying for government scholarships, etc.
- **Employment:** Searching for jobs in the public sector, filing income tax returns, checking balances in the employee's Central Provident Fund account, etc.
- **Family:** Registering birth and marriage, applying for work permit for a foreign maid, applying for a birth extract, etc.
- **Housing:** Checking availability of flats for sale, applying for ballot for allocation of flats, etc.
- **Parking:** Online payment of fines for traffic and parking offences, etc.
- **Travel:** Applying for/renewing of international passport, etc.

Design of E-Citizen Portal

It's the diversity of content and its categorization into logical schemas that has positioned the e-citizen portal as the principal interface between the government and citizens in cyberspace. The basic tenets of perception and cognition have been borne in mind when designing the portal.

A simple design framework has been used for structuring the configuration of the portal. This layout offers some useful pointers on what makes it work well:

- The most important categories are placed in a central column on the home page. These are titled in bold, and the sub-categories under each of these classifications are indented with restrained prominence and allow for access to relevant information on the respective services. The central column is flanked by two columns towards the peripheries and offer information on other services. A click allows content to be browsed.
- The use of the quick links feature allows convenient access to services that are commonly used. This helps users to access such services quickly instead of having to navigate through a labyrinth of text to extract the desired information.
- Information provided on the portal occupies slightly more than a screen size—this makes for easy reading as well as facilitating rapid access.

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