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# The Emergence of the Intelligent Government in the Second Society

Dennis de Kool and Johan van Wamelen  
*Erasmus University Rotterdam, Center for Public Innovation  
The Netherlands*

## 1. Introduction

Modern society is facing two developments that are increasingly being interwoven with each other, namely societal and technological developments and the evolution of a virtual world alongside the physical world. The focal point of these two developments is what we will call the Second Society. New internet applications, which are often grouped under the label 'Web 2.0', play an important role in the Second Society. Well-known examples of Web 2.0 applications are Google, Weblogs, Wikipedia, YouTube, MySpace and Second Life. Web 2.0 is often presented as a revolutionary way of gathering, organizing and sharing of information. Despite the fact that some people embrace Web 2.0, some critical sounds can be heard as well. Critics state that Web 2.0 is an exaggerated hype and raise the question whether the potential of Web 2.0 will be realized in practice. Nevertheless Web 2.0 developments cannot be ignored by the public sector, because they can make governments more intelligent. In this chapter we will discuss the impact of these applications in the emergence of the intelligent government in the Second Society. The research questions to be answered in this chapter are:

- \* What is the public context in which new web applications can be placed?
- \* What is the expected impact of new internet applications on the public sector and citizens?
- \* How can modern internet applications be classified?
- \* What is the empirical impact of two specific Dutch applications within the public sector?

This chapter is organized as follows. In section 2 we explore the notion of the Second Society and the role of new internet applications. Against this background we present a framework to classify new internet applications. In section 3 we will analyze two modern Dutch internet applications in more detail, namely the website "how safe is my district?" ([www.hoeveiligismijnwijk.nl](http://www.hoeveiligismijnwijk.nl)) and the virtual platform against airport hindrance ([www.vlieghinder.nl](http://www.vlieghinder.nl)). In section 4 we draw some conclusions and reflect about the emergence of the intelligent government.

## 2. The Second Society

In recent years one can observe the evolution of a virtual world alongside the physical world. A growing number of activities is taking place within the virtual reality of the internet. More and more (business) services are delivered on line. Nowadays websites can be used for digital banking, shopping, dating, chatting and sharing interests with others. New virtual communities and networks are developing. An example is Second Life. The evolution of a virtual world has impact on the public sector too. An indicator is the number of government services available on-line that is growing steadily in the Netherlands (Ministry of Economic Affairs, 2006). Nowadays the public sector stands with one leg in the physical world and with the other leg in the virtual world. This is no static situation. New technological and societal developments will have impact on a further evolution.

The development of new technology is impressive. Examples are mobile navigation systems (TomTom) and YouTube. All these new technologies have societal implications. They will change the way citizens interact with each other and with governments. New technology can play a crucial role in fixing the problems of modern governments too (Eggers, 2007). An example is the provision of (integrated) services by governments. Some scientific reports speak about a user generated state (Frissen et al., 2008).

At the same time the public sector is facing some societal developments in which technology plays or can play an important role. Examples are individualization, the fragmentation of society, the growing attention for the quality of the provision of services and performance measurement, the active role of citizens in the policy process (co-production), the effects of aging and the discussion about scaling up and down in for example hospitals and schools. Web 2.0 applications make it possible to observe these developments from a different perspective. In the current society personalized forms of integral and tailor-made services are becoming more important.

To summarize: both technological and societal developments will change the position of the public sector in the virtual and physical world. We define the possible evolution of the public sector as the Second Society (Center for Public Innovation, 2007). See figure 1.

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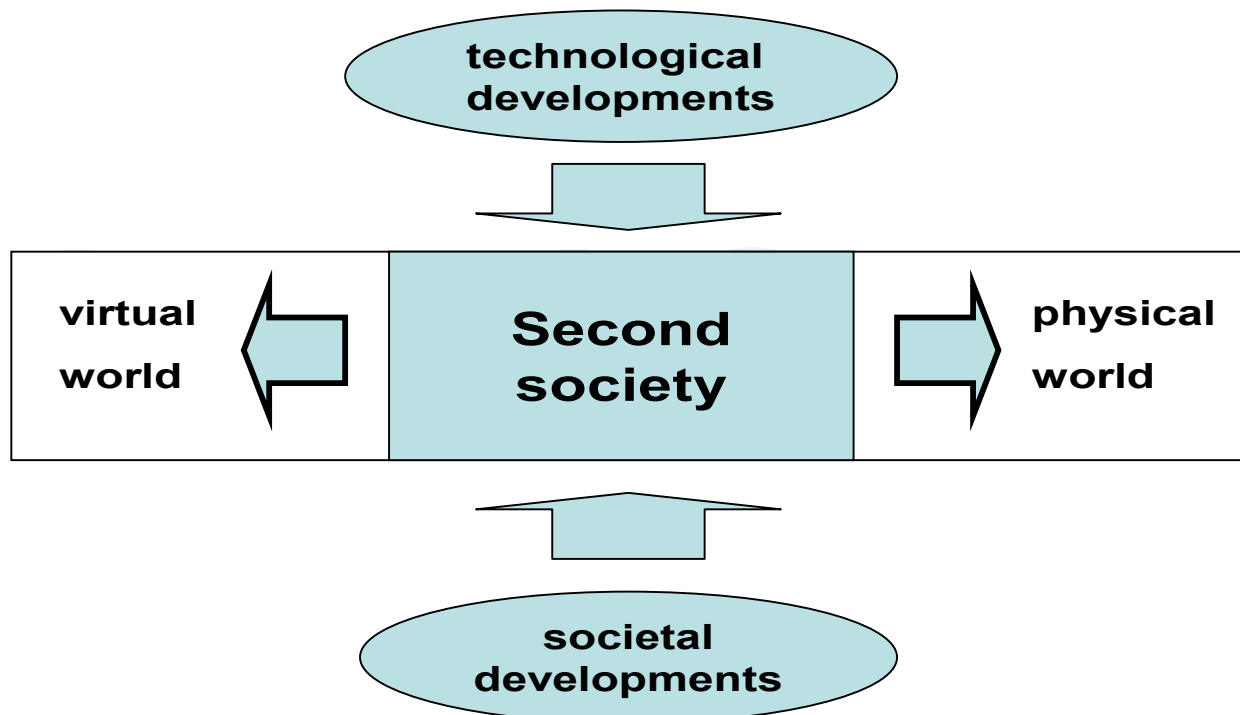


Fig. 1. The Second Society as the central focus point

The Second Society can be approached on a macro level (like a state or global community) and on a micro level (like a district in a city). In this chapter we will explore the implications of Web 2.0 on the local level, because the interaction between the government and citizens (two important actors in the Second Society) are most visible here.

*From E-Government to I(ntelligent)-Government?*

Under the label of E-Government governments are undertaking different activities that are directly related to the development of the Second Society. In this chapter we explore the implications of local Web 2.0 applications on E-government, because Web 2.0 is expected to have far-reaching impact on (electronic) governments (Frissen et al., 2008). Web 2.0 applications can stimulate the further development of E-government. The notion of E-Government is commonly used within the public sector (Bekkers & Homburg eds., 2005; Heeks, 2006; Hernon et al., 2006). E-Government is also a prominent item on the Dutch and European agenda (Ministry of Economic Affairs, 2006; European Commission, 2007). E-Government can be described as “the use of modern information and communication technologies, especially internet and web technology, by a public organization to support or redefine the existing and/or future (information, communication and transaction) relations with ‘stakeholders’ in the internal and external environment in order to create added value” (Bekkers & Homburg eds., 2005).

All policy stages within the public sector are currently being influenced by new internet applications, namely policy development, policy implementation, monitoring and management. We state that Electronic government is not a goal in itself but a process in which intelligent Web 2.0 technology is being used to make the policy process more effective and efficient. For this reason it is better to speak about Intelligent Government (I-Government). An indicator for the Intelligent Government in the Second Society is that the application must meet a successful linkage between the problem and solution, both perceived by the actors involved. The implications are as follows:

*Intelligent policy making*

An example of using Web 2.0 in the policy development process is the website [www.wijbouweneenwijk.nl](http://www.wijbouweneenwijk.nl). This website has been launched recently by the municipality of Smallerland. The goal behind this virtual community is to mobilize 'the wisdom of the crowds' in order to get creative ideas before a new district in Smallerland will be developed. Some media already speak about the wiki-district. More than 400 ideas and reactions have been placed on the website. More than 14.000 people from 43 countries have visited the website. The next step will be to combine the ideas and suggestions in a plan for a new district.

Another example is Virtuocity that has been developed by the municipality of Helmond. Virtuocity is a 3D GIS-application in which citizens could walk through the inner city of Helmond through their own internet connection by using an avatar. With this avatar one can walk around the neighborhood and see all the new plans the same way as when playing a computer game. Additionally there is a forum on which citizens can communicate with the local government and chat sessions with aldermen are organized. The municipality of Helmond hopes with Virtuocity to inform citizens but also to consult them regarding the future of the city. The municipality also expects the application will make sure that citizens feel more involved with their city.

*Intelligent policy implementation*

An example of intelligent policy implementation is the launch of the website [www.politieonderzoeken.nl](http://www.politieonderzoeken.nl) some years ago by the Dutch police. The website contains information about serious cases that have not been solved yet. The goal of this website is to solve the cases by activating the 'wisdom of the crowds' (Surowiecki, 2004). The idea behind this website is that the ideas and suggestions of citizens can be valuable to solve serious crimes.

Another example is the potential of Web 2.0 based technologies in inspection processes. Web 2.0 applications make it more easy to share information and to generate user generated content. Nevertheless, most inspection units, both national and international, are still reserved by making inspection results transparent and activating citizens in inspection processes (Meijer & Homburg, 2008).

*Intelligent policy monitoring and management*

Finally, Web 2.0 applications can be applied to make monitoring processes more effective and efficient. An example is the GIS-based Watermonitor developed by the Regional Water Authority Aa en Maas. This internal web application monitors the implementation process of the water policy goals and ambitions of this organization annually (De Kool, 2008). Other examples of GIS-based monitoring are the website [www.hoeveiligismijnwijk.nl](http://www.hoeveiligismijnwijk.nl) and the website [www.vlieghinder.nl](http://www.vlieghinder.nl). Both of these websites will be discussed in more detail in the next section.

*From Web 1.0 to Web 2.0*

Web 2.0 is not a uniform concept, but a generic term or metaphor for new internet technologies and applications. Web 2.0 can be seen as a revival, intensification, renewal or even as a second generation of the internet in which user generated content has a central place. Osimo and Burgelman state that Web 2.0 is about both technology and attitude (Osimo & Burgelman, 2007). Miller describes Web 2.0 as follows: "Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an architecture of participation and going beyond the page metaphor of Web 1.0 to deliver rich user experiences" (Miller, 2005). Web 2.0 has also been called the social web, because its content can be more easily generated by users as well as the collective intelligence of users. Users are not the passive consumers of content, but the active co-producers of content. Interaction plays an important role in Web 2.0 in order to create shared information.

It is important to state that Web 2.0 is a new stage in the technical development and no replacement of previous technologies (Boulos & Wheelert, 2007). Woods states that Web 2.0 is best understood as the latest phase in the evolution of the internet and the Web (Woods, 2007). We have to consider too that our actual frames of reference are different from the frames of references we had in the past. Interaction by sending e-mails in the past has for example a different character than interaction in virtual communities in the Web 2.0 era.

New internet applications can be classified in different ways. In the first place we can make a classification based on distinguishable characteristics.

*Generic versus specific*

Web 2.0 applications can have a general character. An example is Google Earth. At the other hand Web 2.0 applications can have a specific character too, like an interactive website of a specific district within a city. A Dutch example is the website [www.ede-west.nl](http://www.ede-west.nl).

*Static versus dynamic*

Web 2.0 applications can have a static character. An example is YouTube ([www.youtube.com](http://www.youtube.com)). On this website one can watch self made movies created by other users. These movies have to be put on the website first, before they can be viewed by other people. At the other hand Web 2.0 applications can have a dynamic character too. An example is MSN, on which one can have live chats and exchange pictures or documents.

*Closed versus open*

Web 2.0 applications can be operational in a closed environment (Frissen et al., 2008). An example is Linked-in. On this professional networking community people can block their contacts. At the other hand Web 2.0 applications can be open. An example is Google Maps. This application makes it possible to search for information in specific geographical locations.

### *Personal versus collective*

Web 2.0 applications can be personal. An example are weblogs, on which people can share personal experiences with other interested people. The number of blogs in the public sector is growing at a rapid rate (Wyld, 2007). At the other hand Web 2.0 applications can also serve collective interests. A Dutch example is the website [www.vlieghinder.nl](http://www.vlieghinder.nl) that aims to protect the interests of the people who suffer from the noise of airplanes. See figure 2.

Web 1.0 ◀	▶ Web 2.0
General	Specific
Static	Dynamic
Closed	Open
Collective	Personal

Fig. 2. Characteristics of Web 1.0 and Web 2.0

Second, we can classify local Web 2.0 applications based on the functions that these applications fulfill (Van Wamelen & De Kool, 2008).

### *Sharing of information*

Web 2.0 applications can be used as a new way to share and exchange information, like pictures, movies, news and music. Governments can use Web 2.0 applications to inform citizens, for example by means of GIS. Dutch examples are "Almere in maps" ([www.almere.nl](http://www.almere.nl)) and "Rotterdam in maps" ([www.rotterdam.nl](http://www.rotterdam.nl)). Some websites contain (personal) assessments about persons, like teachers ([www.meinprof.de](http://www.meinprof.de)) or books.

### *Mobilisation of interests*

Web 2.0 applications have mobilizing potential (Eggers, 2007). An example is to make other people aware of some unwelcome situations, for example unsafe locations in cities. People can mark these locations on digital maps by tagging. On the website [www.landroof.nl](http://www.landroof.nl) one can mark nature areas that are at risk because of building plans. The government and politicians can also use Web 2.0 applications for their own purposes. An example are the potential American president candidates who tried to reach their voters by movies placed on YouTube.

### *Social interaction*

Web 2.0 applications can be used to meet each other ("virtual platform"). These social activities can be restricted to contacts in virtual worlds only (for example MySpace and Second Life) but also be a starting point for real meetings. These social contacts can be without obligations ("fun"), but can have functional goals as well. For example bringing together of people with shared interests of the same professional background in communities.

### *Delivery of services*

Web 2.0 applications offer new ways of delivering services. Several cities in the Netherlands offer digital maps that contain information about locations of public organizations, like hospitals, libraries, nursery and schools. Some cities (like Nijmegen and Brugge) offer information about the history of houses, building licenses and so on.

*Transactions*

Web 2.0 applications can offer new ways of doing business (“transactions”) by developing new services or by matching supply and demand in innovative ways. An example is eBay. A Dutch example is the website [www.marktplaats.nl](http://www.marktplaats.nl). On this virtual market everybody can sell and buy goods. Another example is [www.lula.com](http://www.lula.com). This website offers the possibility to publish and distribute documents in an active way. The authors can be publisher, printer and/or shopper. See figure 3.

Function	Examples
Sharing of information	<ul style="list-style-type: none"> <li>• <a href="http://www.youtube.com">www.youtube.com</a></li> <li>• <a href="http://www.flickr.com">www.flickr.com</a></li> <li>• <a href="http://www.fotoshooter.nl">www.fotoshooter.nl</a></li> </ul>
Mobilisation of interests	<ul style="list-style-type: none"> <li>• <a href="http://www.upmystreet.com">www.upmystreet.com</a></li> <li>• <a href="http://www.vlieghinder.nl">www.vlieghinder.nl</a></li> <li>• <a href="http://www.vroegopstap.nl">www.vroegopstap.nl</a></li> </ul>
Social interaction	<ul style="list-style-type: none"> <li>• <a href="http://www.myspace.com">www.myspace.com</a></li> <li>• <a href="http://www.secondlife.com">www.secondlife.com</a></li> <li>• <a href="http://www.hyves.nl">www.hyves.nl</a></li> </ul>
Delivery of services	<ul style="list-style-type: none"> <li>• <a href="http://www.askbristol.com">www.askbristol.com</a></li> <li>• <a href="http://www.hoeveiligismijnwijk.nl">www.hoeveiligismijnwijk.nl</a></li> <li>• <a href="http://www.voorst.nl">www.voorst.nl</a></li> </ul>
Transactions	<ul style="list-style-type: none"> <li>• <a href="http://www.eBay.com">www.eBay.com</a></li> <li>• <a href="http://www.markplaats.nl">www.markplaats.nl</a></li> <li>• <a href="http://www.fotoshooter.nl">www.fotoshooter.nl</a></li> </ul>

Fig. 3. Functions of new internet applications

Not these functions in itself, but the way these functions are filled in is typical for Web 2.0. In the First World War the carrier pigeon was used to send messages to soldiers. This is an example of sharing information. However, the range of the carrier pigeon was literally limited. Internet has no limitations (time, space and amount of messages) for sharing information. So in the modern knowledge society sharing of information has a different dimension.

### 3. Empirical findings

In this section we will describe and analyze two cases in more detail, namely the websites [www.hoeveiligismijnwijk.nl](http://www.hoeveiligismijnwijk.nl) and [www.vlieghinder.nl](http://www.vlieghinder.nl). The first reason to select these websites is that the first website is a ‘top-down’ project initiated by the government (‘Intelligent Government’) and the second website is a bottom-up project initiated by citizens (‘Intelligent Citizens’). In the Second Society I-Governments and I-citizens interact with each other. The second reason to restrict the cases to intelligent policy monitoring is that most of Web 2.0 based activities in the Netherlands in the policy making and policy implementation are still in the pilot stage or have been developed very recently, so it is still



too early to draw conclusions about the empirical impact of Web 2.0 in these two policy stages.

### **3.1 Neighborhood: crimes in the region Haaglanden**

In April 2006 the police department Haaglanden launched the website [www.hoeveiligismijnwijk.nl](http://www.hoeveiligismijnwijk.nl). With this website citizens can view eleven of the most frequent crimes committed within the region per neighborhood, namely car theft, intimidation, mugging, theft of mopeds, theft from cars, theft from companies, theft from houses, theft of bikes, ill-treatment, shop-lifting and pick-pocketing. The viewers of the website can select the crimes-categories, the period in which the crimes took place and the municipality, district or neighborhood in which these crimes had been committed. Special software has been developed to show the data on geographical maps. By comparing current numbers with past data it is also possible to get insight in trends in crime. Besides crimes figures the website provides viewers also with information to prevent crimes. The idea behind this is that prevention measures will reduce the number of crimes within the region Haaglanden.

#### *Characteristics of website*

The website has a specific focus, namely to deliver data about specific crimes in the region Haaglanden. The content on the website is quite static, although the data on the website is being renewed regularly. The website can be viewed by every citizen, without login-codes. The website has not a personalized but collective focus. The primary focus group are citizens in the region Haaglanden.

#### *Functions of website*

The launch of the website is part of a large campaign by the police department 'Haaglanden'. With this campaign the police department hopes to actively inform citizens and societal organizations on the developments regarding criminal facts, unsafety and the achievements of the. With specially designed software the information on reported crimes is made available on geographical maps. The maps contain the numbers on eleven of the most frequent crimes. By using the maps citizens can obtain a complete image of these crimes in their neighbourhood in one blink of an eye. One must keep in mind that the site is based on reported crimes only.

The idea behind this website is that well informed citizens attribute to a safer environment. A safer environment is a common interest of both police offices and citizens. In contrary to the website [www.vlieghinder.nl](http://www.vlieghinder.nl), the mobilisation of interests plays no role at this website. In terms of social interactions the website presents crimes reported by citizens, according to the police department, the website in itself feeds this back to citizens. Citizens were also asked to give their opinion on the website and among those who do prizes can be won. The website does not contain an interactive forum. Still the police departments views the website as an important portal by which citizens can contact the police. The main service offered by the website is to provide citizens which location-based data about crimes in their neighbourhood. Next to crime statistics the website also provides for useful tips for the prevention of crime. Transactions is no relevant function for this website.

#### *Intelligent linkage*

In this case we see that the linkage between solution and problem not completely matches. In the area of information provision the linkage proves to be a large success, citizens visit the website and are informed on the safety issues in their neighborhood. The active

involvement of citizens in the safety of their neighborhood has, up till now, not been apparent.

### **3.2 Platform against airport hindrance**

On June 24<sup>th</sup> 2003 the Platform Vlieghinder Regio Castricum (PVRC) (Platform for airport hindrance in the area of Castricum) was established. An important incentive for the start of this initiative by citizens was the use of a new airport runway, the so-called "Polderbaan" by the airport of Schiphol. This, according to citizens had led to a large increase in noise nuisance. An important goal behind this association is to reduce the noise nuisance around the airport of Schiphol by providing the airport authorities and governments with grounded data. This data is real-life gathered by noise-measurement equipment around the airport and shown on a live 'radar' on the website [www.vlieghinder.nl](http://www.vlieghinder.nl).

#### *Characteristics of website*

The website has a specific focus, namely to inform or mobilize citizens who want to reduce the noise nuisance around the airport of Schiphol. The content on the website is very dynamic. The PVRC together with the Stichting Geluidsnet (Association Noise net) designed a system in which one can look at the actual flights via Google Earth. According to the starters of the website the combination of GIS, real-time measurements and internet account for one of the key success factors for the website. The website has an open character, because everybody can enter the website without login-codes. The website has not a personalized but collective focus. The primary focus group are citizens in the region of Castricum.

#### *Functions of website*

Informing citizens and government is the most important goal of the website, since the PVRC supposes that citizens have a lack of information compared to the airport. The website contains a lot of information among which background information, radar maps and flight routes. With the help of this information the PVRC can base their complaints on noise nuisance. The PVRC on the website voices its opinion that the government will not inform them on the noise nuisance. Because of this the PVRC actively tries to inform citizens themselves. The interest of the PVRC is decreasing the noise nuisance caused by Schiphol airport. The PVRC also feels that legislation has done them wrong. The law claims that there is a norm for the amount of noise allowed for areas next to the airport. But this norm does not apply to the areas of Castricum, Limmen, Heemskerk and parts of Beverwijk because these areas are located too far from the airport. The mission of this group is defending the interests of the citizens living in the area. To reach its goal the PVRC wants to use publicity and that is why they have started their website. On the website interested citizens are urged to register and become a member. A cooperation with 18 citizens groups in the region is also established. According to the starters of the website the possibility for citizens to react is one of the key factors for success of the website. There are also meetings between members. The main service provided on the website is to provide viewers of the website with actual data about the noise of airplanes and relevant policy documents about this theme. Transactions is no relevant function for this website.

#### *Intelligent linkage*

For the case of the PVRC the linkage between problem and solution is practically a hundred percent successful. The goal of informing citizens proves to be a success but also being taken seriously in negotiations has been successful.

#### 4. Conclusions and Reflections

A shift can be traced from the so-called Web 1.0 to Web 2.0. Web 2.0 is not a uniform concept, but a generic term for new internet technologies and applications. Important characteristics of Web 2.0 applications are virtual networks, sharing of information, active users that influence the products and the dynamic content of information. Both these technological and societal developments have impact on what we call the Second Society. In this chapter we explored the implications of Web 2.0 applications for the emergence of the intelligent government.

The study has shown that Web 2.0 applications can have different characteristics and functions. For that reason we have tried to classify Web 2.0 applications. We made classifications based on distinguishable characteristics (generic versus specific, dynamic versus static, closed versus open and personal versus collective) and functions (sharing of information, mobilisation of interests, social interaction, delivery of services and transactions) of Web 2.0 applications.

All policy stages within the public sector are currently being influenced by new internet applications, namely policy development, policy implementation, monitoring and management. We state that Electronic government is not a goal in itself but a process in which intelligent Web 2.0 technology is being used to make the policy process more effective and efficient. For this reason it is better to speak about Intelligent Government (I-Government). An indicator for the Intelligent Government in the Second Society is that the application must meet a successful linkage between the problem and solution, both perceived by the actors involved.

In the case of the police department Haaglanden we can conclude it is an initiative by the government aiming to inform citizens about crimes in their neighborhoods in the region of Haaglanden. The linkage between problem and solution is less than optimal, where the linkage is successful in providing information, it is less successful in involving citizens.

In the case of the platform against airport hindrance we can conclude it is an initiative by citizens aiming to mobilize citizens who claim to suffer from airport hindrance in the region of Castricum. The linkage between problem and solution is completely successful. When citizens obtain the possibility to, within ones own problem perception, contribute to a solution, the added value of this solution will be higher.

When we focus on the characteristics of these websites, we can conclude that both websites have a specific and collective focus and open access to all viewers. A difference between the two websites is that the 'governmental' website is more static then the 'citizen' website. When we focus on the function, we can conclude that informing is the most important function, but that, surprisingly, the degree of interaction is quite modest.

A critical key success factor is the influence of citizens on the process. We can conclude that websites in which citizens have a large impact on the problem perception and on the solution for this problem, have a larger degree of success than websites where this is not the case. An intelligent government is a government that mobilize the intelligence of citizens and activate, to speak in Web 2.0 terms, the wisdom of the crowds.

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## **E-learning Experiences and Future**

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This book is consisting of 24 chapters which are focusing on the basic and applied research regarding e-learning systems. Authors made efforts to provide theoretical as well as practical approaches to solve open problems through their elite research work. This book increases knowledge in the following topics such as e-learning, e-Government, Data mining in e-learning based systems, LMS systems, security in e-learning based systems, surveys regarding teachers to use e-learning systems, analysis of intelligent agents using e-learning, assessment methods for e-learning and barriers to use of effective e-learning systems in education. Basically this book is an open platform for creative discussion for future e-learning based systems which are essential to understand for the students, researchers, academic personals and industry related people to enhance their capabilities to capture new ideas and provides valuable solution to an international community.

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Slavka Krautzeka 83/A  
51000 Rijeka, Croatia  
Phone: +385 (51) 770 447  
Fax: +385 (51) 686 166  
[www.intechopen.com](http://www.intechopen.com)

### **InTech China**

Unit 405, Office Block, Hotel Equatorial Shanghai  
No.65, Yan An Road (West), Shanghai, 200040, China  
中国上海市延安西路65号上海国际贵都大饭店办公楼405单元  
Phone: +86-21-62489820  
Fax: +86-21-62489821

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