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STRATEGIC FOCUS REPORT

# By the People, For the People, @ the People: Web 2.0 in Government (Strategic Focus)

From democratization of access to democratization of participation

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## OVERVIEW

### *Catalyst*

As public agencies seek to improve collaborative outcomes across departments and enhance interactions with constituents, governments are beginning to explore the capabilities of Web 2.0.

### *Summary*

Today, we live in a technology-savvy world which demands technology-savvy government. With Web 2.0 having emerged as new form of communication between workers in the enterprise, governments have begun to leverage its functionality in order to improve the way they interact with and engage citizens, as well as to increase information sharing and collaboration between employees and across agencies. This report focuses on the emergence of Government 2.0, focusing on the following key points:

- Web 2.0 changes the way we interact, while Enterprise 2.0 changes the way we work;
- Government has realized that it can—and must—be 2.0-enabled;
- The use of Web 2.0 allows governments to reach populations they otherwise would not;
- Governments must use 2.0 to fulfill their mission and avoid the 'shiny new toy' syndrome.
- Agencies must be willing to relinquish some control to allow Government 2.0 to be effective.

# KEY MESSAGES

## *Web 2.0 changes the way we interact, while Enterprise 2.0 changes the way we work*

Web 2.0 is the new medium of mass communication. The numbers tell the story: if Facebook were a country, its 175 million users would make it the fifth largest in the world; Wikipedia has over nine million articles by 300,000 users in 250 languages; and a higher percentage of Americans have watched a YouTube video than voted in the last election. While it seems the hype around 'Web 3.0' is already emerging, one would be hard-pressed to actually define Web 2.0, with explanations ranging from 'marketing buzzword' to 'revolutionary technology'. As such, there is a need to cut through the hype and understand what 'Web 2.0' really means.

## *Government has realized that it can—and must—be 2.0-enabled*

While commercial enterprises were among the earliest adopters of Web 2.0 technologies, the uptake in government was generally somewhat slower, although is it now coming around. Questions abounded with regards to data security and privacy, and public sector IT managers were justifiably concerned with the control of public records. However, as the world becomes increasingly global, they are realizing the need for governments to share information with citizens and to allow citizens to contribute. Today, we live in a tech-savvy world which demands tech-savvy government. Agencies must use Web 2.0 to learn more about what citizens want, and essentially build 'brand awareness; an area in which government has not been traditionally strong. In addition, there are established models for information sharing using Web 2.0 which can increase collaboration between workers and functional business units—an area in which government has often struggled.

## *There are a number of drivers for Web 2.0 in government*

While Web 2.0 emerged as a tool largely for personal use, and was subsequently adopted for use by commercial enterprises, governments have increasingly realized the potential that the technology can have in public sector agencies as well. There are a number of factors which have driven the uptake of Web 2.0 in the public sector, including the democratization of participation, the 'collaboration imperative', where information has moved from the 'need to know' to 'need to share', and the fact that agencies are adopting Web 2.0 in order to attract and retain the next generation of talented workers.

## *The use of Web 2.0 allows governments to reach populations they otherwise would not*

In terms of constituent interaction, Web 2.0 features allow governments to bring services to the people, rather than the people having to come to government. By starting a Facebook group and attracting citizens to join as 'fans' or members, then subsequently sending out message and events to that group, agencies are able to target citizens who would otherwise not visit a government website. It is important for agencies not to attempt to reinvent the wheel, but rather to follow protocol on such sites and give the people what they want. Governments must realize that Web 2.0 is simply another communications tool which they must learn to leverage in order to reach citizens how they want to be reach – just as they have learned to develop walk-in offices, online portals or automated email campaigns to improve e-governance and citizen satisfaction.

## *Governments must use 2.0 to fulfill their mission and avoid the 'shiny new toy' syndrome*

While being part of the conversation is important, having something to say is paramount. Agencies that rush into implementing 2.0 without a clear strategy will not see the same gains as they would if they were to think strategically about what they hope to achieve. With many Web 2.0 technologies, there has been a tendency to confuse the 'new' with the 'good'. In particular, they must avoid the 'shiny new toy' syndrome: while an IT manager may perceive Web 2.0 in this way, it should nonetheless be deployed as a strict productivity tool. It is up to agencies to cut through the hype and understand exactly what they expect from Web 2.0; they must understand their target constituency, their end users and what channels are preferred by those accessing their services.

## *Agencies must be willing to relinquish some control to allow Government 2.0 to be effective*

While the internet and Web 2.0 tools provide governments with the opportunity to be constantly involved in the conversation, there are also a number of inherent challenges that come with moving government into the wild world of 2.0. Agencies must find a balance between managing their 2.0 initiatives and allowing organic participation. The nature of Web 2.0 tools is characterized by the need for ongoing interaction; feedback and dialogue are precisely what differentiate 2.0 from 1.0. As such, agencies must ensure that their participation is active rather than stagnant, in order to avoid the perception that they are slow-to-act or out-of-date institutions.

## TABLE OF CONTENTS

## TABLE OF FIGURES

# MARKET OPPORTUNITY

The bourgeoning of online tools which allow users to communicate and collaborate in ways that were never before possible has led to the emergence of and now well-established buzz around the term Web 2.0. Whether one believes that it is an overhyped marketing buzzword or a sociological phenomenon, there is no denying that it does indeed exist, and has had a profound impact on human society and the way in which we interact in both our personal and professional lives. Accordingly, governments have begun to examine how they might leverage Web 2.0 to challenge their traditional ways of operating, by increasing collaboration and information sharing among employees and allowing constituents to take a more active, participatory role in how their government is run. This section will outline the market opportunity for these new technologies in government, elaborating on the following:

- Web 2.0 changed the way we interact; Enterprise 2.0 changed the way we work;
- Government has realized it can – and must – be 2.0-enabled;
- There are a number of drivers for Web 2.0 in government; and
- Despite its promise, there are significant challenges to adopting Web 2.0 in government.

## *Web 2.0 changes the way we interact, while Enterprise 2.0 changes the way we work*

Web 2.0 is the new medium of mass communication. The numbers tell the story: if Facebook were a country, its 175 million users would make it the fifth largest in the world; Wikipedia has over nine million articles by 300,000 users in 250 languages; and a higher percentage of Americans have watched a YouTube video than voted in the last election. While it seems the hype around 'Web 3.0' is already emerging, one would be hard-pressed to actually define Web 2.0, with explanations ranging from 'marketing buzzword' to 'revolutionary technology'. As such, there is a need to cut through the hype and understand what 'Web 2.0' really means.

- Web 2.0 has revolutionized communications by bringing technology in line with human behavior.
- Enterprise 2.0 is the application of Web 2.0 to formal organizations.

### Web 2.0 has revolutionized communications by bringing technology in line with human behavior

Web 2.0 has taken the internet from what was a one-way tool for top-down communications to a platform on which anyone with basic technical skills can make their voice heard. In this sense, the shift from 1.0 to 2.0 is in effect the evolution of the internet, rather than a new web. The shift has been characterized by the decreased importance of the webmaster as gatekeeper, and the rise of the end user with the power to generate content and personalize their online experience. The effect of Web 2.0 is that information can now find us, rather than us finding the information for ourselves. While Web 2.0 is driven by technological tools, it is in fact much more than simply a technology. It is a sociological phenomenon: ways in which people have come to participate in the world, socially, commercially and even politically, have brought the internet to a whole new level of importance in our lives. It is no longer a place to post a webpage, but a place to offer a service. It is no longer a place to speak to the individual user, it is a place for 'crowdsourcing' and mass collaborative efforts. Not only is the internet a place for socializing, commerce, reading the news or watching television, it is a place that is always on, and increasingly, ubiquitous and instant. Web 2.0 has revolutionized not just the internet, but the way in which humans interact. It has brought technology more in line with human behavior by allowing people to contribute their own ideas and respond,

comment on or add to others' ideas. The evolution of the web is not just a shift in technology: it is a shift in culture. A new culture of participation has arisen, as Web 2.0 tools provide more sophisticated, powerful means for development and enhanced platforms on which to create interactive and collaborative spaces, which in turn allow more users to take an active role in participating, sharing and creating content. The shift to open standards and open source software—leading to the emergence of service-oriented architecture (SOA)—has allowed the ability for users to create 'mash-ups' of applications for their own use. For example, Google Maps can be used to provide an added dimension and better way of organizing and displaying information. By plotting points on a map and linking them to Wikipedia entries or blog posts, Flickr images, related YouTube videos or even associated Amazon purchases, the mashed-up, user generated application adds value, as the final application becomes a tool which is greater than the sum of its parts.

### Enterprise 2.0 is the application of Web 2.0 to formal organizations

Because of the widespread popularity of Web 2.0—largely as a tool for entertainment and personal use—enterprises have taken to leveraging these tools to improve their own operations. As the economy has shifted from a concentration on manufacturing to services, there has been a resulting increase in the need for workers to share information. While enterprises have experienced numerous pain points in implementing Web 2.0, there are a also number of well-known instances of leveraging such technology: for example, 'social constituent relationship management (CRM)' has become more commonplace, as enterprises seek to enhance their CRM offerings with Web 2.0 features such as social networking. Once organizations realized the value of Web 2.0, Enterprise 2.0—the creation of interactive, online platforms for collaborative work and knowledge sharing across the enterprise to stimulate innovation—was born. While the term Web 2.0 defines tools for individual use that have grown organically and whose uses have developed by accident, Enterprise 2.0 is the application of those tools to structured environments. Web 2.0 therefore became a way of thinking which permeated enterprises' attitudes towards operations collaboration and information sharing. While difficult to clearly classify at the enterprise level, Web 2.0 tools can be defined as online, collaborative platforms which create or enhance unified communications tying email, voice/video and telepresence together, as well as conferencing platforms for sharing ideas, creating dynamic or virtual workspaces, and social/knowledge networking services.

A key aspect of the adoption of Web 2.0 in the enterprise is the notion of gathering a 'single point of truth'. One of the challenges to the collaborative nature of 2.0 tools such as social networking or wikis is that between the numerous conflicting opinions, 'facts' and points of view, it becomes difficult to identify which content entries are more authoritative than others. Social media is seen as a messy place, in which it is difficult to discern what is 'official'. Enterprises can lend credibility to this, by helping to weed out content which is incorrect or conflicting. Agencies have an opportunity to reap significant benefits from Government 2.0, by properly leveraging the contributions of the many, while applying a light filter to help guide the conversation and contributions.

## *Government has realized that it can—and must—be 2.0-enabled*

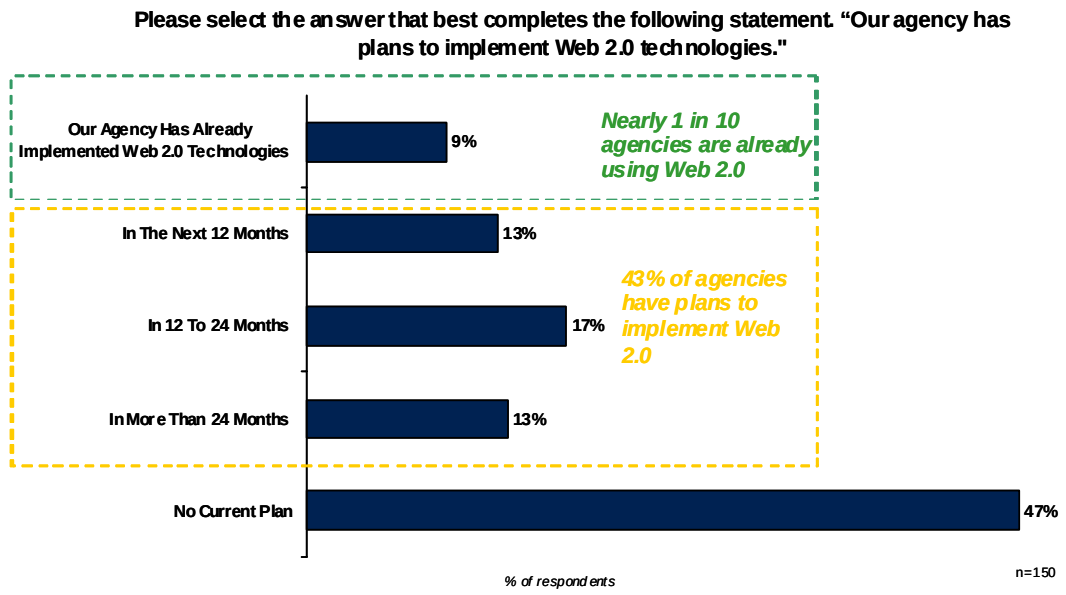
While commercial enterprises were among the earliest adopters of Web 2.0 technologies, the uptake in government was generally somewhat slower, although is it now coming around. Questions abounded with regards to data security and privacy, and public sector IT managers were justifiably concerned with the control of public records. However, as the world becomes increasingly global, they are realizing the need for governments to share information with citizens and to allow citizens to contribute. Datamonitor has identified the following trends in the adoption of Web 2.0 technologies in government:

- Government has already seen strong adoption of Web 2.0.
- RSS feeds, wikis and blogs are the most implemented technologies among agencies surveyed.
- Adoption trends differ between regions, levels of government and size of agency.

## Government has already seen strong adoption of Web 2.0

Twenty years ago, if a citizen had a question about their tax return, they could trudge down to the local IRS office to stand in line and wait for an agent. Yet today, we live in a tech-savvy world which demands tech-savvy government. It must use Web 2.0 to learn more about what citizens want, and essentially build 'brand awareness; an area in which government has not been traditionally strong. In addition, there are established models for information sharing using Web 2.0 which can increase collaboration between workers and functional business units—an area in which government has often struggled. Conventional government is in many ways unable to address society's challenges in its current state; it must reflect this new way in which we interact and communicate. Social networking, photo-sharing and podcasts have become part of our everyday lives, and increasingly will become part of our everyday interactions with government.

**Figure 1: Over half of agencies have embraced, or have plans to implement Web 2.0**




Source: Datamonitor

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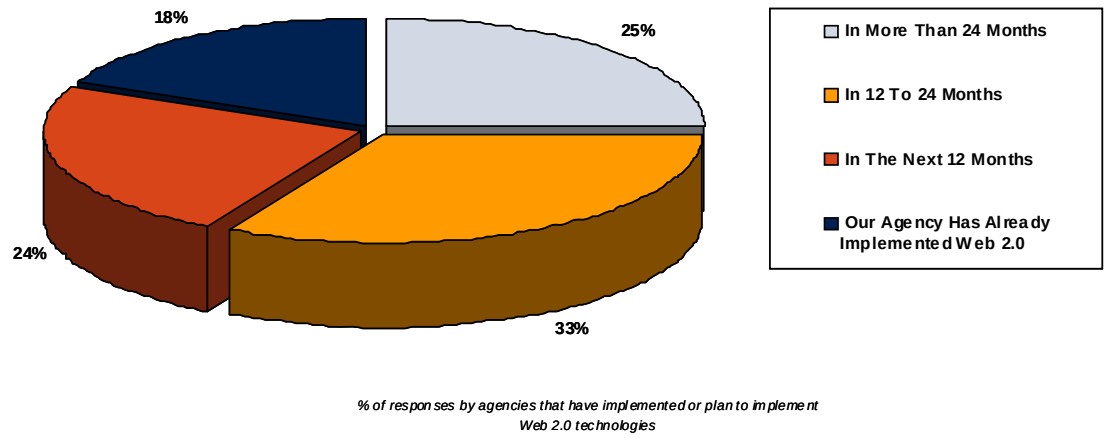
Undoubtedly, the movement is well underway. In a recent Datamonitor survey, over half of agencies had already implemented Web 2.0, or had plans to do so in the near future (Figure 1). Of those agencies, 80% will have implemented Web 2.0 in the next two years (Figure 2). This represents an opportunity for vendors to capitalize on the enthusiasm and openness to Web 2.0 adoption by government, and demonstrate its value to the remaining agencies who have yet to adopt these tools.

**Figure 2: Over half of agencies have embraced, or have plans to implement Web 2.0**




Source: Datamonitor

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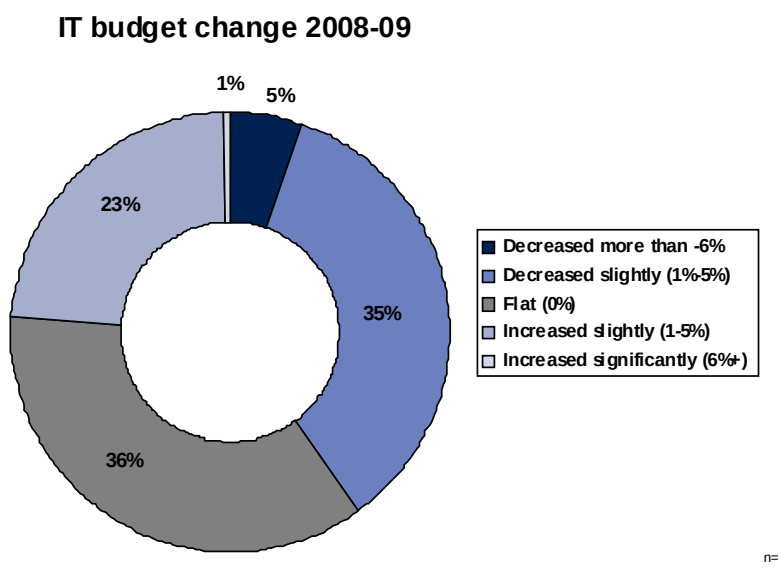
In addition, while government budgets are tight in the best of times, there is increased pressure on controlling spending in light of the dire economic climate. With government revenues negatively impacted due to a significantly reduced tax base caused by failing businesses and higher unemployment, there is a need for agencies to find tools which will allow them to provide the same level of constituent service with budgets that are remaining flat or decreasing (Figure 3).

**Figure 3: Over 75% of agency IT budgets will remain flat or decrease from 2008 to 2009**

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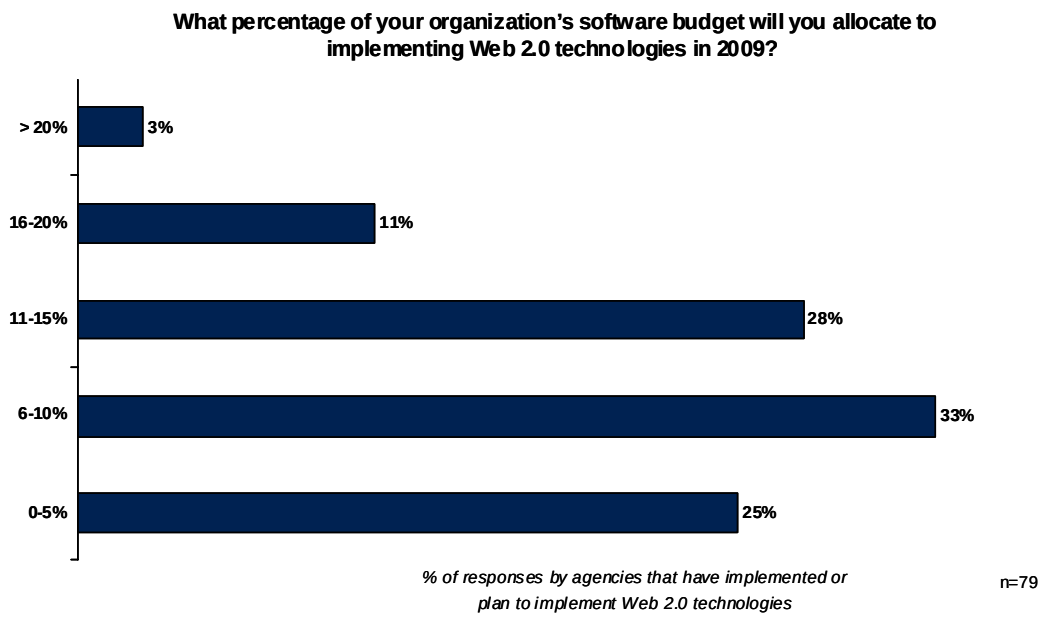
Because Web 2.0 tools can provide increased efficiencies through internal collaboration, governments are therefore investing heavily in this area. Indeed, as seen in Figure 4, the majority of agencies are spending up to 10% of their software budget on Web 2.0-related technologies.

**Figure 4: Agencies spend a significant amount of their software budgets on Web 2.0**

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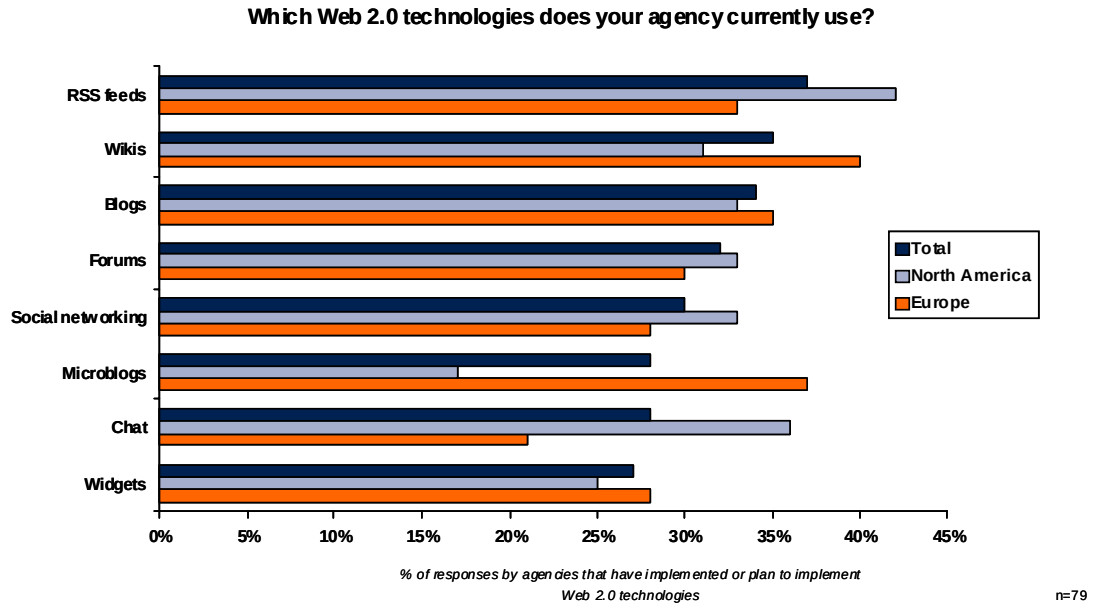
### RSS feeds, wikis and blogs are the most implemented Web 2.0 technologies among agencies

According to a recent Datamonitor survey, the most implemented 2.0 technologies among agencies are RSS feeds, wikis and blogs. In particular, RSS feeds provide agencies with a technology that is simple to use and requires little investment in terms of capital and human resources. It is a quick and easy way to let constituents know when they have posted new information on their websites. For example, the citizen trudging to the tax office to ask a question or pick up a form no longer needs to do so; they can be notified when the new forms are available for download by subscribing to an RSS feed. While wikis and microblogs are driving Web 2.0 in European agencies, RSS feeds and chat are most dominant in North America: When it comes to providing updates to constituents, North American agencies rely more heavily on RSS feeds, while European agencies have adopted microblogging. From a collaboration and information sharing perspective, North American agencies have adopted chat, and European agencies are heavier users of wikis. Ultimately, North American agencies are using Web 2.0 mainly for citizen interactions, while European agencies have more diffuse targets.

**Figure 5: RSS, wikis and blogs are the most implemented Web 2.0 technologies among agencies**

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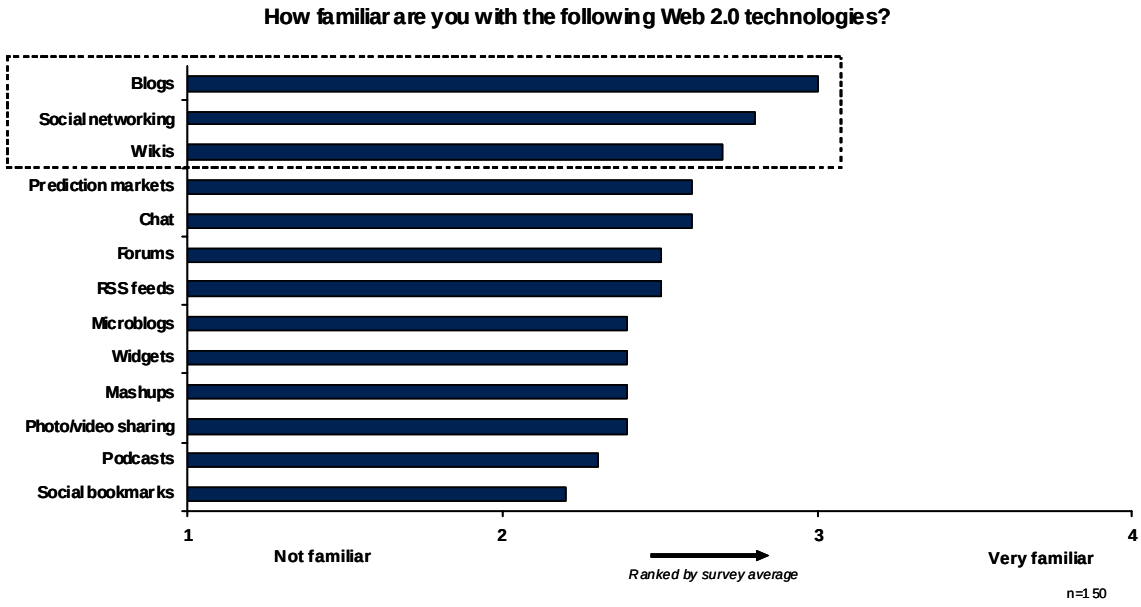
### *Web 2.0 tools that have seen wide commercial success are now being used by governments*

Blogs, social networking and wikis have all experienced widespread popularity among the general public and, increasingly, commercial enterprises (ie. blogs, Facebook, Wikipedia). As perhaps the most established Web 2.0 technology, it is not surprising to see blogs at the top. While this development took place long ago in the commercial sector, it is now being mirrored in the government sector. This explains the relative familiarity that government IT decision makers have with these technologies, and their propensity to implement them (Figure 4). IT decision makers' familiarity with wikis and blogs has translated into usage in the government. However, social networking lags behind in terms of agency adoption, due to high costs in terms of time and investment. In particular, because RSS feeds and microblogs—such as Google Reader and Twitter—are already in wide use among early adopters of technology, Datamonitor believes that are also likely to see increased familiarity as they gain traction among commercial end users (Figure 5).

**Figure 6: Government IT decision makers are most familiar with blogs, social networking, wikis**




Source: Datamonitor

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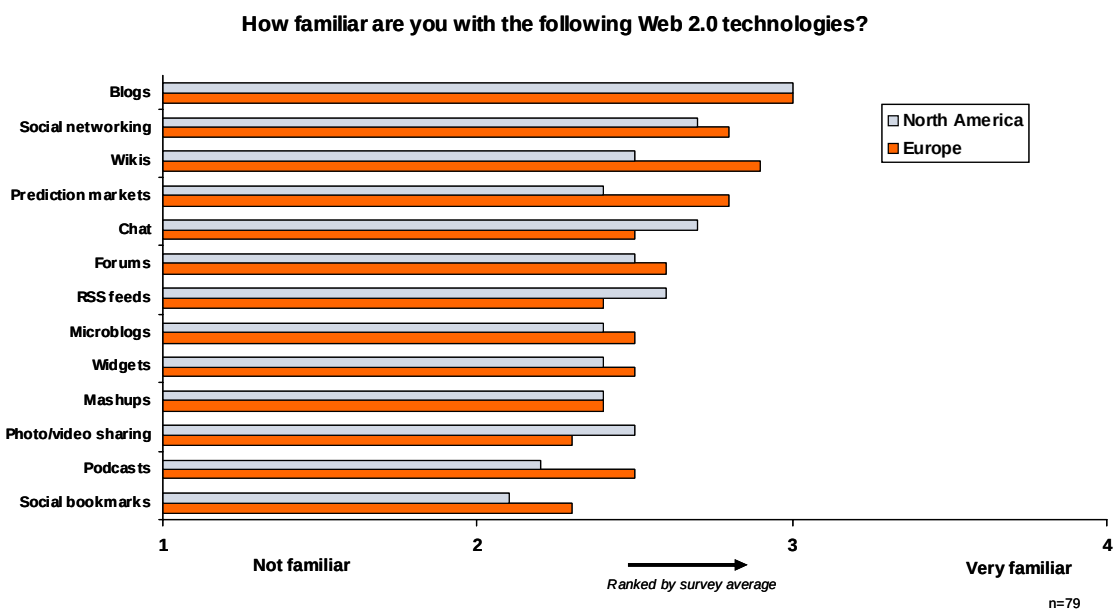
## Adoption trends differ between regions, levels of government and size of agency

While Web 2.0 is being adopted widely in government, there are some differences which exist across geographies. In particular, while adoption of Web 2.0 technologies is very similar across both North America and Europe, it is interesting to note that European agencies in general seem to be more familiar with Web 2.0 technologies (Figure 6). This is likely due to a strong push by the European Union, through initiatives such as the Electronic Service Delivery plan, to encourage governments to invest in technologies which enhance e-government offerings. Yet Datamonitor expects that two key areas with which North American agencies are particularly familiar—chat and RSS feeds—will experience significantly stronger uptake in the US and Canada than in Europe.

**Figure 7: European agencies are more familiar with most Web 2.0 technologies**




Source: Datamonitor

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## *There are a number of drivers for Web 2.0 in government*

While Web 2.0 emerged as a tool largely for personal use, and was subsequently adopted for use by commercial enterprises, governments have increasingly realized the potential that the technology can have in public sector agencies as well. There are a number of factors which have driven the uptake of Web 2.0 in the public sector, as outlined in the following section:

- While Web 2.0 democratizes the internet, Government 2.0 democratizes participation.
- The 'collaboration imperative', moving information from ‘need to know’ to ‘need to share’.
- Agencies are adopting Web 2.0 in order to attract and retain the next generation of talented workers.

### While Web 2.0 democratizes the internet, Government 2.0 democratizes participation

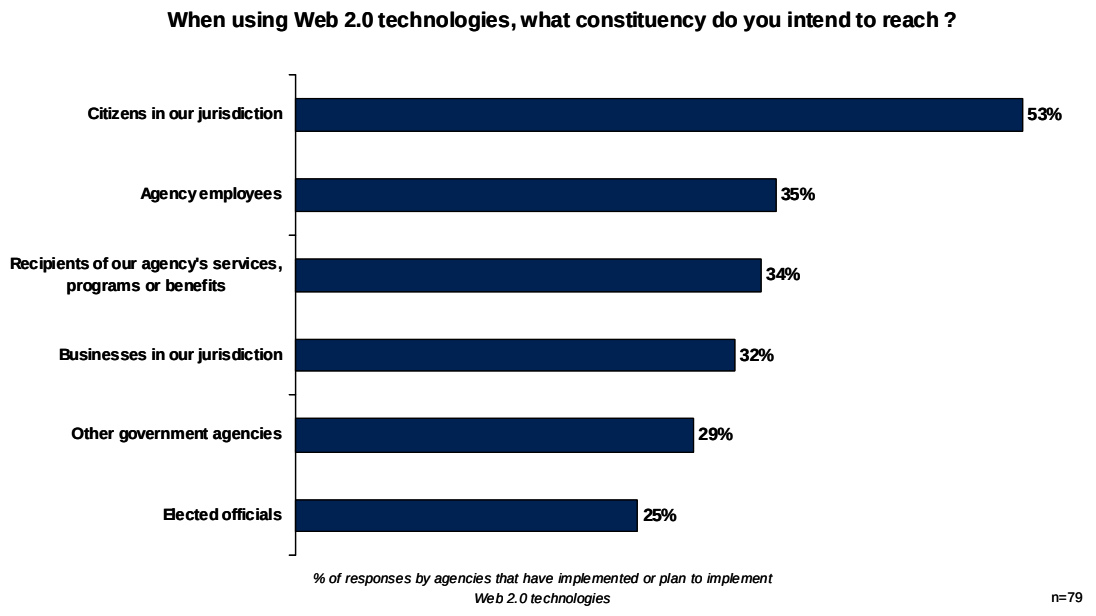
In the new culture of participation, there is a demand—indeed, an expectation—among citizens that they can take an active role in government. Governments have at their fingertips a plethora of underused resources: other agencies, businesses and citizens, and a community of academics and non-government organizations who are eager to share what they know with agencies in order to improve services delivery and society as a whole. Agencies are therefore using Web 2.0 to enable citizens to take a more active role in the way in which their government is run. Due to the low barriers to entry for Web 2.0, agencies have been able to engage constituents in what has emerged as Government 2.0; policymaking through means such as adding blogs or other interactive features to government websites. Today, anyone with an internet connection and a basic understanding of computers may participate in the public sphere. At the heart of access to government services is

the actual ability to access government using one's preferred channel. As a result, governments have even resorted to using Second Life (which now has 10 million 'residents'), social networking sites and microblogging services such as Twitter to convey information and interact with citizens. Functions which once required a trip to City Hall or the local tax office can now be performed over the phone, via email or even chat.

### The 'collaboration imperative', moving information from 'need to know' to 'need to share'

There is an also an element of collaboration, as governments are adopting Web 2.0 to improve information sharing between employees. In light of the complexity of government, a 'collaborative imperative' has emerged. Agencies can no longer afford to operate in silos, or even at different levels of government. It is interesting to note that breaking down silos remains a challenge, although one which Web 2.0 will help tackle in the future. As illustrated in Figure 7 below, as a targeted constituency, 'other government agencies' has a lower response rate than 'agency employees'. This reflects the fact that agencies are still more focused on using 2.0 tools to collaborate *within* agencies rather than *across* agencies, and is indicative of the continued difficulty of breaking down operational silos in government.

**Figure 8: Intra-agency collaboration is much more widespread than interagency collaboration**

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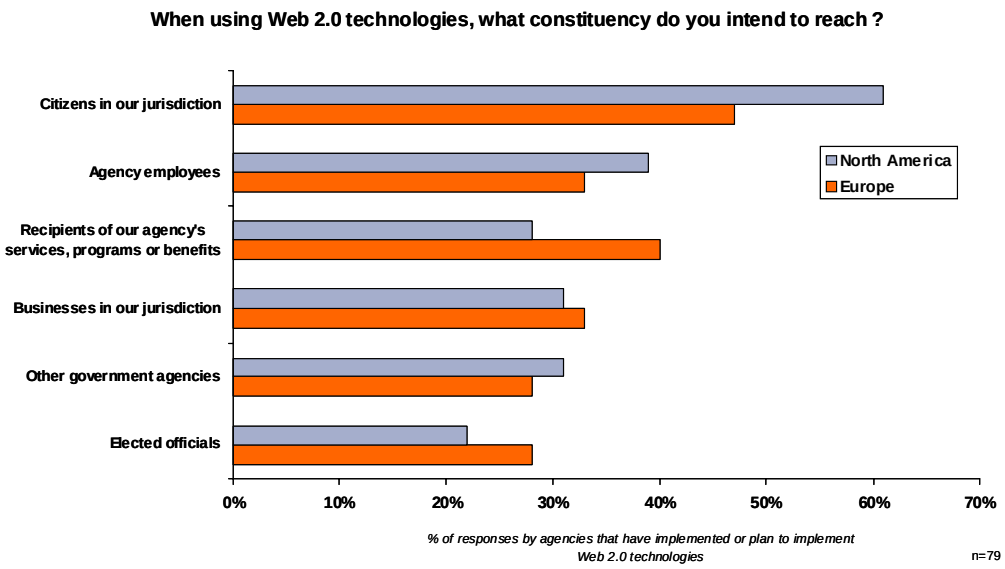
Yet in light of the fact that better information sharing can lead to better policy outcomes and increases efficiencies by reducing instances of repeated resource expenditure on the same task, there is great potential for Web 2.0 to turn governments into organizations which truly leverage its power. In addition, while citizen participation is a leading driver for Web 2.0, European and North American agencies differ in some respects (Figure 8). In Europe, for example, Web 2.0 is

used to share information between agencies, while North American agencies have been heavily influenced by government performance targets, in particular around improving constituent satisfaction.

**Figure 9: Citizens are the primary constituents that agencies intend to engage with 2.0 tools**

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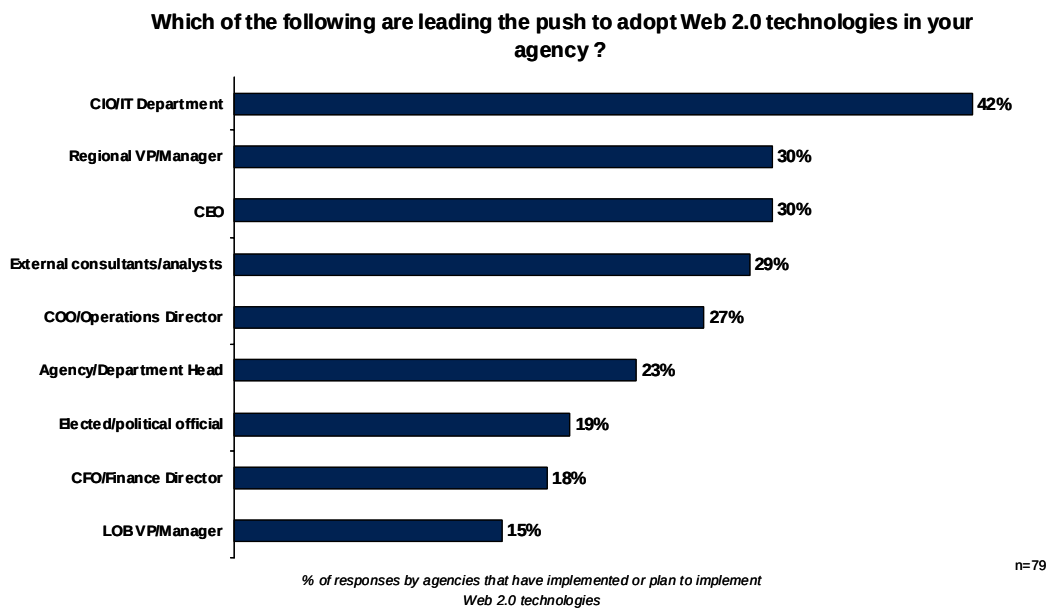
### *Adoption of Web 2.0 technologies in government is being driven by executives and IT staff*

IT staff are likely to have the best understand of the benefits of Web 2.0 technologies, as they are often the earliest adopters of cutting edge technologies such as blogs and social networking. As such, the initiatives behind Web 2.0 adoption are largely driven by chief information officers (CIOs) and IT departments (Figure 9). This poses somewhat of a challenge for the implementation of Government 2.0, as these offices are not necessarily involved in the actual business of running the agency, but rather supporting the business processes. Yet IT decision makers' familiarity with wikis and blogs has translated into a degree of uptake in the government. It is interesting to note that despite their commercial popularity, social networking still lags behind in terms of agency adoption, which can be attributed high costs in terms of deployment and maintenance, as well as ensuring that end-users will adopt these new tools in the workplace.

**Figure 10: Agency executive and CFOs have the most influence over decisions about IT spending**




Source: Datamonitor

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## Agencies are adopting Web 2.0 in order to attract and retain the next generation of talented workers

Today's government agencies are faced with aging workforces that are expected to retire in large numbers over the coming years. It is estimated that large numbers of government employees are set to retire over the coming decade, leaving a potentially huge gap in management and staff totals. With a smaller workforce, agencies will rely on technological tools to help fill the gap between expectations and what they can deliver in terms of service. As the human capital crisis plays out in the government sector, agencies will look to replace retiring staff with younger workers who have grown up in a world where Web 2.0 tools are the norm. This next generation of worker—the 'digital natives', as they are commonly referred to—not only use technology differently, but lead their lives differently. Nearly every aspect of their lives has an online component- from shopping to banking to learning. These new workers use Web 2.0 technologies in their personal lives on a daily basis, and as new ways of leveraging them to improve productivity and efficiency in the workplace emerge, they will choose their employers based on what is offered to help them do their job. As such, agencies must provide workplace tools which attract the top new talent in the workforce. With commercial enterprises having already adopted Web 2.0, government faces a challenge in terms of offering an attractive work environment which allows and indeed encourages these tools. Yet governments are increasingly seeking to provide what have become the basic tools for personal and professional communication. There is, of course, an added difficulty in deploying such tools in the public sector, largely due to the more sensitive and regulated nature of government agencies. Implementing a social network might theoretically be a simple task, but due to bureaucratic and structural complexities, this becomes more difficult in the public sector. However, agencies that do not find ways to leverage and offer these tools to their employees will become increasingly hard-pressed to attract top talent in order to replace outgoing staff.

## *Despite its promise, there are significant challenges to adopting Web 2.0 in government*

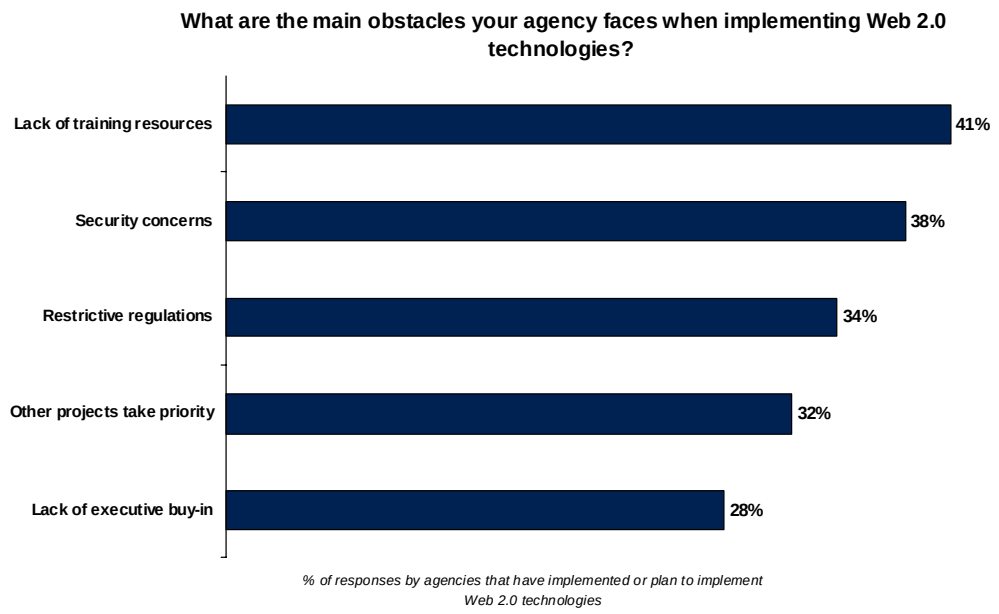
While Web 2.0 undoubtedly brings a great deal of added functionality to current applications and opens new doors in terms of collaboration in government, a number of barriers exist which must be overcome and addressed going forward. As with most new technologies, in particular in the public sector which tends to adopt technologies later, there is a reticence that permeates agencies, in particular among senior managers who are not as familiar with non-traditional methods of collaboration and information sharing. More specifically, Datamonitor has identified the following challenges which must be addressed for Web 2.0 to truly take hold in government:

- A lack of resources is the key challenge to implementing Web 2.0 in government.
- Security and privacy concerns are also paramount to agencies.
- Web 2.0 challenges the structured and hierarchical nature of government.

### A lack of resources is the key challenge to implementing Web 2.0 in government

When it comes to Web 2.0, agencies have concerns about the ability to manage new technologies effectively. According to a recent Datamonitor survey, insufficient resources and concerns around data security are the leading obstacles to government adoption of Web 2.0 (Figure 10). This pain point is particularly prevalent in that while there is certainly a qualitative benefit to implementing Web 2.0, there is at the same time some consternation among IT managers with regards to the concrete return on investment that it provides. Agencies that embrace Web 2.0 will need new production systems, staff to manage the new technologies and the skills and support to ensure that the initiative produces a tangible benefit. For example, while starting a YouTube channel or blog to promote an agency's activities is free, there is then the requirement to devote resources to keeping the data accurate and up to date. In addition, if an agency adds social networking or a video sharing service to a current application such as CRM, there are also issues with maintenance, support and bandwidth that would need to be addressed to ensure the effective operation of such a tool.

**Figure 11: Lack of resources and security are the leading obstacles to 2.0**




Source: Datamonitor

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### Security and privacy concerns around Web 2.0 are also paramount to agencies

While resource constraints can act as inhibitors to Web 2.0, there are also institutional and legal realities that pose problems for its implementation in government. A key concern related to the lack of resources is that of privacy and security of government data, often consisting of sensitive information about citizens or classified intelligence which, if breached, can have severe ramifications from a legal or public safety perspective. With the high degree of sensitive data being gathered, stored and exchanged in government, there are legitimate concerns regarding the protection of that information. While Web 2.0 opens up civic participation to constituents, and can enhance mass collaboration among internal staff, there is at the same time a delicate balance between protecting privacy and ensuring accountability of users. As with any technology, an implementation is only as successful as its users. Even with strict security measures and firewalls in place on government servers and systems, Web 2.0 opens up participation to users, which can result in human error or malicious behavior which could put highly sensitive or top secret information in jeopardy of being leaked or accessed by unauthorized users. There are also concerns about just how far Web 2.0 can permeate government without crossing privacy lines. For example, Whitehouse.gov recently decided to use its own embedded player for posting videos, when went against regulations which prohibited the use of cookies to track visitors to government websites.

In addition, due to privacy regulations and legislation, sharing information between agencies often requires navigating several bureaucratic approvals and regulatory hurdles. Whereas in a private company information flows much more fluidly, governments must avoid the perception that they are acting as ‘big brother’, compiling centralized databases of personal information about each constituent. Vendors that demonstrate a knowledge and understanding of jurisdictional legislation

and policies regarding information sharing will be at a distinct advantage, as it will show that they are concerned with the complete picture of the technological, operational and legal environment in which government operates.

### Web 2.0 challenges the structured and hierarchical nature of government

Institutional regulations and the culture of government may also inhibit Web 2.0 adoption. There is a natural resistance to change in any organization, and government is no exception. As a particularly bureaucratic environment, public agencies are often defined by entrenched processes and structures, and major overhauls to systems which have been in place for years are often difficult. As a strategy, Web 2.0 necessarily democratizes participation and influence, thus breaking down hierarchical structures which dictate how decisions are made. Therefore, in order for Web 2.0 tools to flourish in government, agencies and their employees will need to step outside of their comfort zone. Effective implementation of Web 2.0, then, necessarily involves refocusing business processes and the people overseeing those processes towards a more democratic approach. In what will prove to be a particular challenge for agencies, the use of Web 2.0 and its democratizing functions will force authorities to concede some of their authority. This is a particularly difficult obstacle for an industry which is inherently about control, structure and hierarchy. Some specific agencies, such as military organizations, are rigid for a reason, and have rightfully expressed concern about the suitability of 2.0 to their operations. In cases such as this, Web 2.0 threatens to upend coherent structures that have been established to run operations in an efficient manner, and therefore must be implemented carefully.

## CUSTOMER IMPACT

Web 2.0 has the potential to revolutionize the way we think of government, by increasing transparency, building trust, breaking down silos and increasing collaboration. It also has the potential to help agencies better align with constituent needs rather than the other way around, and move government-constituent dialogue to a new level. Constituents will have the opportunity to shape what role the government has in their lives, while government workers have the ability to collaborate and potentially shift the way government operates. This section will outline how government agencies have used Web 2.0 to better achieve their mission, and provides recommendations on issues which agencies must consider:

- The use of 2.0 technologies allows governments to reach populations they otherwise would not.
- Governments not using 2.0 risk being left out of the conversation.
- Governments must use 2.0 to fulfill their mission and avoid the 'shiny new toy' syndrome.
- Barack Obama's campaign for president demonstrated the power to mobilize using Web 2.0.
- Agencies must be willing to relinquish some control to allow Government 2.0 to be effective.

### *The use of Web 2.0 allows governments to reach populations they otherwise would not*

In terms of constituent interaction, Web 2.0 features allow governments to bring services to the people, rather than the people having to come to government. By starting a Facebook group and attracting citizens to join as 'fans' or members, then subsequently sending out message and events to that group, agencies are able to target citizens who would otherwise not visit a government website. It is important for agencies not to attempt to reinvent the wheel, but rather to follow protocol on such sites and give the people what they want. Governments must realize that Web 2.0 is simply another communications tool which they must learn to leverage in order to reach citizens how they want to be reach – just as they have learned to develop walk-in offices, online portals or automated email campaigns to improve e-governance and citizen satisfaction.

The internet has always been an excellent tool through which governments can provide information to constituents. From basic posting of legislative session minutes to contact information, governments have moved into sharing information and public records in 2.0 formats, which allows constituents to filter out and receive only the information which they want or need. For example, blogs act as useful tool for conveying articles, links, photos or other relevant information to constituents, while allowing for feedback through comments. RSS feeds, meanwhile, provide governments with a technology that is simple to use and requires little investment in terms of capital and human resources. At the same time, the ease of creating user-generated content presents the citizens with the potential to interact with government at an unprecedented level. Now, everyday technology users are turning the expertise that they have gained on a personal level into innovative ways to share their ideas with governments, to provide feedback, shape policy and provide information by leveraging a much larger group of stakeholders.

### *Governments not using 2.0 risk being left out of the conversation*

CIOs cannot ignore Web 2.0, as this will only frustrate the organization and inhibit its growth and outward-looking nature. Regardless of whether one 'gets it' or not, agencies that do not move into the world of Web 2.0 will not remain relevant to their constituents' lives. Whereas customers often visit commercial enterprises out of personal motivation—to make a

purchase or plan a vacation, for example—the challenge for government is that transactions with agencies are generally 'distressed purchases' that citizens do not want to make, but are likely performing out of necessity. As such, government must endeavor to bring those services to citizens. While businesses have largely been able to leverage the web and its interactive tools to target a niche market in order to better attract and retain customers through enhanced and targeted messaging, governments face an opposing conundrum. While there is a need to engage in similar behavior—targeting social assistance cases, for example—there is a larger question of equity of access, and the need to provide equal access to services for all its citizens. They must ask themselves, 'how can we leverage the interactive web to get our message across?'

## *Governments must use 2.0 to fulfill their mission and avoid the 'shiny new toy' syndrome*

Yet while being part of the conversation is important, having something to say is paramount. Agencies that rush into implementing 2.0 without a clear strategy will not see the same gains as they would if they were to think strategically about what they hope to achieve. With many Web 2.0 technologies, there has been a tendency to confuse the 'new' with the 'good'. In particular, they must avoid the 'shiny new toy' syndrome: while an IT manager may perceive Web 2.0 in this way, it should nonetheless be deployed as a strict productivity tool. It is up to agencies to cut through the hype and understand exactly what they expect from Web 2.0; they must understand their target constituency, their end users and what channels are preferred by those accessing their services. With this in mind, agencies must keep their audience interested in what they are saying, and keep them coming back to listen, contribute and comment on other users' contributions. Government 2.0 needs a clearly defined purpose, and, where possible, measurable outcomes. This is particularly important if an agency is to determine whether the initiative has been a success, rather than simply a drain on management resources. For example, rather than commenting mundane Tweets, agencies might use Twitter for what it will likely be in the future: a live search of users' thoughts, contributions and expertise, such as 'what is your reaction to the stimulus plan?', or providing information for users in case of emergencies.

## *Barack Obama's campaign for president demonstrated the power to mobilize using Web 2.0*

In November 2008, Barack Obama capped off a historic election campaign to win the US presidency. While the mantle of using technology in campaigning began in the US 2004 primary elections, when Howard Dean leveraged online supporters to raise record amounts for his campaign, Obama took this to new heights. Obama's campaign took full advantage of Web 2.0 and the personal aspect of the web to reach supporters across the country though online communities. Obama was on no less than twelve online communities, from popular sites such as Facebook and MySpace – where he had 4 times as many 'friends' as his rival, John McCain – to sites targeted at various demographics, from African Americans and Latinos to Baby Boomers and Christians. The result of the Obama victory in the campaign has raised the visibility – and expectations – of the potential for Web 2.0 in government. During the transition period from Nov 4$^{th}$ 2008 to Jan 20$^{th}$ 2009, Obama launched and maintained Change.gov, to keep citizens abreast of policy statements and presidential appointments, as well as a blog, forum for collecting comments, links to videos of news and interviews on YouTube and network websites, and information on how to apply for a job with the new administration.

There is also a high degree of enthusiasm around his appointment of Vivek Kundra as Federal CIO, in charge of overseeing the technology infrastructure of the federal government. Kundra, the former CTO for Washington, District of Columbia, led a number of innovative initiatives to increase transparency and effectiveness of DC government, and forged a number of high profile partnerships with major technology vendors such as Google and Microsoft. It has been pointed out

that running an election campaign is very different from running a government, what with the numerous layers of bureaucracy, legislative restrictions and security concerns. Yet there is considerable buzz around Obama's tech-savvy nature (he is the first President in history to have an email address, and is a heavy BlackBerry user), and with the appointment of Kundra to the CIO position, it is likely that the US federal government will begin to incorporate Web 2.0 tools into its operations on a more frequent basis.

## *Agencies must be willing to relinquish some control to allow Government 2.0 to be effective*

While the internet and Web 2.0 tools provide governments with the opportunity to be constantly involved in the conversation, there are also a number of inherent challenges that come with moving government into the wild world of 2.0. Agencies must find a balance between managing their 2.0 initiatives and allowing organic participation. The nature of Web 2.0 tools is characterized by the need for ongoing interaction; feedback and dialogue are precisely what differentiate 2.0 from 1.0. As such, agencies must ensure that their participation is active rather than stagnant, in order to avoid the perception that they are slow-to-act or out-of-date institutions. From a resource perspective, this requires maintaining an online presence which in turn requires ongoing monitoring and updating. At the same time, the benefit of Web 2.0 is the organic growth of ideas that are borne out of a free and unrestricted collaborative environment. As a result, government IT managers implementing Web 2.0 initiatives must be willing to cede some of the control that they have traditionally enjoyed. In order to best navigate effectively between these two extremes, agencies must ask questions such as where Web 2.0 is best-suited for use in the agency. Furthermore, how will employees and constituents contribute and use Web 2.0? How can the CIO and IT staff facilitate discussion? How can we discourage/remove inappropriate content? Agencies must therefore find this middle ground between, on one hand, letting employees or citizens participate in an unregulated fashion which could potentially expose private data, and on the other, acting as a strict host which censors ideas and contributions which hinders information sharing and collaboration. Only by encouraging and providing 'light guidance' which does not hinder collaboration will Web 2.0 flourish in government.

# COMPETITIVE LANDSCAPE

## *System integrators provide expertise in implementing Web 2.0 applications*

**CSC –** Computer Sciences Corporation takes a wide approach to 2.0 functionality, offering tools in the enterprise around unified communications, effective conferencing services, dynamic work product and knowledge management services. Its approach is focused on selling 2.0 as a component of business solutions, rather than the technology itself. As one of the only pure play system integrators remaining in the market, CSC brings a vendor agnostic approach that is different than its competitors, allowing it to implement best of breed technologies and products that fit its clients' requirements. At the same time, CSC's Global Alliance Group provides access to major strategic vendor-partners. CSC also places a very high priority on security, which is a key component of ensuring successful Web 2.0 implementations. Its focus is approximately 90% federal where Web 2.0 has yet to permeate as widely as at the state and local level. Although with its heavy presence in Defense and Intelligence- agencies that have demonstrated innovation and a willingness to experiment with 2.0 technologies- CSC has a good understanding of what agency CIOs are after.

**EDS –** EDS, an HP company, has a strong understanding of Web 2.0, which it has build into its composite applications. With the recent acquisition by HP, it also provides the company with access to the research and development capabilities of HP. EDS has a number of 2.0 implementations at the US federal level, including at Veterans Affairs, Housing and Urban Development and Homeland Security. One of its key implementations is the Electronic Alien Removal Model (e-ARM), a module of services and data shared by twenty US federal law enforcement and intelligence agencies, which is essentially a social network with profiles of illegal aliens. With complex data and logic functions on the back end, the user interface is familiar and offers particular ease of use.

## *Vendors are using Web 2.0 to create new platforms and enhance existing applications*

**Google –** The key to Web 2.0 is making it easy to use, navigate and above all, intuitive. As such, for Google – a company whose mission is to organize the world's information, Web 2.0 seems like a natural fit. While best known for its search technology – which is used widely in government, including in all 15 federal cabinet level departments at the US – it is placing an increased emphasis on government adoption of cloud computing, which it sees as a key enabler for 2.0-based collaboration and information sharing. In addition to its line of search technologies, its enterprise offering also includes Google Apps, a cloud computing productivity suite which is deployable to the enterprise, and its geospatial technologies, Google Maps and Earth, which have been leveraged by governments to display information geographically. Google Apps, which was release two years ago, currently has over 1 million business users, including thousands in the public sector. While it is focused largely on the executive levels of the US federal government, it also has a strong presence in state and local market in the US. One of its marquis clients include the District of Columbia, which implemented Google Apps as a means for its workers to collaborate and share documents and manage projects online, as well as sites to share information with the public, such as events and policy developments. Google Maps and Google Earth are also used frequently by a number of government agencies worldwide. Among its most innovative uses has been by the Alabama Department of Homeland Security, whose Virtual Alabama platform has integrated a number of innovative Web 2.0 features. Both applications are also frequently used in mash-ups by citizens to create dynamic geospatial representations of government data.

**Microsoft –** Microsoft offers a number of collaborative services, including Dynamics, SharePoint, Live Meeting and Communicator, as well as its Business Productivity Online Suite and Azure. In particular, Microsoft sees the cloud as having a significant impact on the popularity of Web 2.0 technologies, and is focused on leveraging its partner network to build Web 2.0 capabilities into its current solutions. Notably, it has recently announced six new Web 2.0-based partner applications for its Public Sector on-demand offering, which sit on top of its Dynamics CRM. The new solutions include PublicRecordsTracker for FOIA requests; FastTrackGov, an e-permit solution, and Public Sector Idea Bank, which demonstrates the most potential for leveraging Web 2.0 tools in the public sector. Developed by Neighborhood America, Idea Bank is an online social network portal which allows public sector customers and partners to share and discuss their current applications which have been built and customized for Microsoft Dynamics CRM. Datamonitor believes that this is the type of application which will have particular resonance in the public sector; it provides agencies with a platform to work together and collaborate across agencies and even jurisdictions, without the cumbersome bureaucracy or siloed nature of government to burden the initiative. In addition, such application sharing communities are particularly useful for government agencies, which do not compete with each other for business as commercial enterprises do, but rather seek to improve operations through collaborative approaches to delivering better public services.

**Oracle –** In September 2008, Oracle announced the launch of its iGovernment platform, which seeks to modernize government IT infrastructure, increase efficiency and transparency and transform public service delivery. This shift in thinking from 'eGovernment' to 'iGovernment' – the 'i' stands for innovative, integrated, and intelligent – in some ways mirrors the evolution of online services from Web 1.0 to 2.0 functionality, and is a clear indication that Oracle has taken into account how Web 2.0 technologies have impacted governments. From an Enterprise 2.0 perspective, Oracle focuses on supporting portal technologies that include Web 2.0 capabilities and business process management (BPM) tools to manage workflows and enhance collaboration. In particular, its WebCenter Suite provides customers with the ability to interact and collaborate using a unified communications approach, with the ability for portals to encompass Oracle Communicator and other services within a common display, as well as mashups and dashboards for improved reporting and chart building. In addition, its business process execution language (BPEL) allows governments to tag business processes which can lead to both improved operations as well as the potential to share best practices across agencies. As one of the largest technology vendors in the world, Oracle has a strong presence in the government space and many of its clients have leveraged its Web 2.0 offerings.

**RightNow Technologies –** RightNow is a leading CRM vendor in the public sector, known for its strong customer service offering. With CRM having been widely adopted in the private sector, governments are increasingly turning to CRM in order to manage constituent relationships, and are leveraging a number of interactive, 2.0 tools offered in RightNow's solution. Its knowledge foundation is fully optimized for indexing by Google and other search engines so constituents will receive answers from an agency's knowledge base in their search results - a feature currently being used by the US Social Security Administration (SSA). Its knowledge syndication widget also allows for agencies to push information from the RightNow knowledge base out to any web page or site, as is used by the State of Indiana's website. It also offers collaboration tools around forum integration, which, although not used widely by its government clients, but has a good deal of potential as the legislative and regulatory concerns around electronic data privacy and security are worked out in the government sector.

**SAP –** SAP is one of the world's largest business software companies, and the world's third-largest independent software provider. They are heavily focused on implementing 2.0 in the enterprise, and are increasingly putting resources towards the government sector. In particular, they have been successful in leveraging the SAP Developer Network Community

(SDN) and the SAP Business Expert Community (BPX) to interact with their public sector customers, where there has been a strong response to best-practice sharing from clients using SAP. They are focusing heavily on making the wikis and blogs in the public sector manageable and searchable, as well as allowing users the personalize content and share information though wide use of Rich Internet Applications in its offerings. Good examples of this are found in SAP for Public Sector that includes a composite application supporting taxpayer online services, in SAP CRM, which allows users to mash-up the user interface for their own purposes and in the Ajax-enabled SAP NetWeaver Portal offering.

## *Free Web 2.0 services are being used to connect government workers and engage citizens*

**GovLoop** – Launched on Memorial Day 2008, GovLoop is a free, social networking site for all things government, including discussions and groups on topics from human resource policies to e-government initiatives to best practices. It has allowed government employees to seek advice from one another on the structure of standard operating procedures (SOPs) and human resource policies, while also serving as a platform for making professional – and personal – contacts for government employees. It currently has over 7,000 members, consisting of about 80% government employees from the US and abroad- including CIOs and CTOs- with the remainder split between contractors and the academic community. Impressively, it has attracted users young and old; while a solid base of young government employees are signed up for the site, over 60% of its membership is over 35. As a relatively small site, the challenges of managing content have not yet run into challenges; political discussion and contractor sales pitches have been limited, and user growth has remained steady. Users have also been self-regulating, and there have been no instances of sensitive or unauthorized information being posted- a risk that as the site grows, could possibly arise. Yet the site is in many ways a public model of what governments can look to when thinking about how to leverage Web 2.0 as collaborative tool to improve productivity and information sharing. In addition, vendors would be wise to engage GovLoop in discussions around their solutions, and perhaps even leverage the wisdom of the growing crowd on this new, innovative social network.

**Apps for Democracy** – Apps for Democracy was a competition run in the Office of the Chief Technology Officer (OCTO) for the District of Columbia (who at the time was Vivek Kundra, the new US Federal CIO), that allowed citizens to create and submit web applications, widgets, Google Maps, mash-ups, iPhone apps, Facebook apps, and other digital utilities that visualized the OCTO's data catalog, a service that makes available real-time data from DC government agencies online. Gold-medal winning submissions were iLiveat, an application which maps DC addresses and provides detailed information on everything from local services to crime rate, and DC Historic Tours, a Google Maps mash-up that combines custom walking tour creator—with Flickr photo feeds and Wikipedia entries—that can be saved on any device and used for later reference. The competition proved a very cost efficient way for the government to develop beneficial applications for citizens at a very low cost: 47 applications were received, and a total of $20,000 in prize money was awarded, with prize amounts ranging from $100 to $2,000.

## GO TO MARKET

In light of the findings and analysis presented in this report, Datamonitor makes the following recommendations for vendors seeking to leverage Web 2.0 tools in their solution offering:

- Vendors must help educate agencies on how Web 2.0 can be leveraged to achieve successful outcomes.
- Vendors with a deep vertical offering will be best suited to guide Web 2.0 implementations in government.
- Vendors can demonstrate the power of Web 2.0 through online forums for the public sector.

### *Vendors must help educate agencies on how Web 2.0 can be leveraged to achieve successful outcomes*

For their part, vendors must take an active role in educating agencies in how Web 2.0 can be used, by drawing on their experience in the commercial sector, where Enterprise 2.0 has been implemented to wide degree. In particular, online communities such as blogs, user forums and application sharing communities should be actively promoted by vendors among their public sector customers. This is because agencies are eager to share best practices and applications, and are not limited in the sense that they are competing in a commercial marketplace, they are more willing and able to participate in and benefit from such online communities.

Going forward, vendors must add Web 2.0 functionality into their existing offerings—such as a CRM or an ECM application—and demonstrate how they will help enhance current operations and provide value for agencies and constituents. In doing so, they must be mindful that government is a highly-siloed organization, where agencies hold guarded control over their internal processes and information. Working independently of each other, agencies have developed their own processes, organizational structures and IT systems that work for their own unique need. As a result, they often do not work together naturally on initiatives, and the value of gaining a wider perspective on constituent requirements is not always apparent to government managers. This poses a particular problem when it comes to implementing new forms of working using Web 2.0. In addition, at a frontline level, implementing Web 2.0 can also meet with resistance from employees who are not keen on organizational and operational changes. Government employees are often well-trained in their specific tasks and might see Web 2.0 as both a threat to their job and a process change which renders them beginners at a new system being implemented by a new and younger generation. Accordingly, vendors must work closely with agency staff from executives to front-line workers to demonstrate how Web 2.0 can help improve their day to day duties, by leveraging tools which enhance the applications they are currently using.

### *Vendors with a deep vertical offering will be best suited to guide Web 2.0 implementations in government*

As Web 2.0 and Enterprise 2.0 tools become more widely adopted in government, Datamonitor believes that the use of Web 2.0 will develop into more nuanced tools for particular agencies. While Web 2.0 was adopted by commercial enterprises and gave rise to Enterprise 2.0, each industry has adopted the '2.0' moniker for their own purposes, such as Government 2.0 or Banking 2.0. In turn, the term—and the functions which go along with it—are likely to be tailored even further, into subsectors such as Intelligence 2.0 and Education 2.0. In particular, agencies which are more citizen facing will engage in leveraging communities of interest, based on applications such as social CRM or mash-up functions for data manipulation. Agencies which are more inward facing and operationally focused will invest in wikis and social networks to

help improve internal collaboration and knowledge sharing. As a result, vendors must be mindful of developing their solutions to meet the particular vertical needs of government, as well as the particular needs of each agency, such as tax and revenue, social services or defense.

### *Vendors can demonstrate the power of Web 2.0 through online forums for the public sector*

While agencies traditionally do not share information well in their formal structures, they are nonetheless inherently non-competitive when it comes to best-practices, and they will therefore be more apt to engage in forums and sharing of though online communities established outside of government. As a result, specific applications posted on vendors' online forums and app sharing services are likely to develop and be tailored for use by agencies working in different areas of government, such as intelligence, environment or tax and revenue. Many vendors have already launched or will soon launch online communities dedicated to their public sector customers, which allow participants to discuss, comment, collaborate and download each other's applications. Vendors that can leverage this information sharing platform as a tool to help improve their understanding of government—and, more importantly, the various functional areas within government—will be most likely to see success. They will provide not only an attractive option in which governments may participate, but can also benefit from user input to help develop their own applications which are in line with both customers' wants and needs.

# APPENDIX

## Definitions and abbreviations

BI – Business intelligence

CIO – Chief Information Officer

CTO – Chief Technology Officer

CRM – Constituent relationship management

FOI – Freedom of information

ERP – Enterprise resource planning

RSS – Really Simple Syndication

ROI – Return on investment

SaaS – Software as a service

SOA – Service oriented architecture

SOP – Standard operating procedure

SI – System integrator

## Methodology

- **Industry opinion research** – Datamonitor conducts briefings on an ongoing basis with leading technology vendors serving the government market. Typically, 10–15 vendor briefings will be conducted for each research theme.
- **Government Technology Business Trends Surveys** – through Business Trends surveys, Datamonitor interviews government organizations in Canada, France, Germany, the UK and the US about their business and IT priorities, budget outlooks, vendor preferences, purchasing preferences and plans for specific solution investments.
- **Technology Trends Surveys** – Datamonitor's Technology Trends survey interviews 1,000 decision makers across Europe and North America, including those in the public sector. The surveys ask respondents about the key horizontal IT issues affecting their organization.
- **Secondary research** – Other secondary sources of information include international organization statistics, national/government statistics, broker and analyst reports, business information libraries and databases

## Further reading

*Business Trends: Understanding Your Government Customer 2009*, February 2009, DPTC0052

*Decision Matrix: Selecting a CRM in Government*, February 2009, DMTC2243

*Trends to Watch 2009: Government Technology*, December 2008, DPTC2188

*Can Obama Bring Change(.gov) We Can Believe In?*, November 2008, BFTC1959

*Where in the City? Using GIS to Manage Government Information*, December 2008, DMTC2248

*Government IT Spending to 2013 (Interactive Model)*, October 2008, IMTC0092

*Elections in the 21st Century: The Growing Adoption of Electronic Voting (Strategic Focus)*, September 2008, DMTC2210

*Future IT Trends and Projects: South Korea Public Sector (Industry Focus)*, June 2008, BFTC1939

*Future IT Trends and Projects: Russia Public Sector (Industry Focus)*, June 2008, BFTC1979

*Future IT Trends and Projects: South Africa Public Sector (Industry Focus)*, June 2008, BFTC1940

*CRM and the Move to Constituent-Centric Government (Strategic Focus),* March 2008, DMTC2179

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## *Datamonitor consulting*

We hope that the data and analysis in this brief will help you make informed and imaginative business decisions. If you have further requirements, Datamonitor's consulting team may be able to help you. For more information about Datamonitor's consulting capabilities, please contact us directly at consulting@datamonitor.com.

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