Gohar F. Khan

Social Media for Government

A Practical Guide to Understanding, Implementing, and Managing Social Media Tools in the Public Sphere

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Foreword

One of the most unenviable endeavors that I can imagine is to write a book focused on the use of technology. Only an indomitable writer should face the unavoidable stretch of time between the initial research and the book finding its place on shelves and in tablets. No matter the urgency of the author and expediency of the publisher, the unforgiving pace of technological change threatens the value of the book. I can only imagine the number of authors who have chastised themselves for using examples of Alta Vista instead of Google, Corel Draw instead of Adobe Illustrator, Myspace instead of Facebook, Firefox instead of Chrome, SharePoint instead of Dropbox, Secret instead of Yik Yak, and BlackBerry Messenger instead of WhatsApp. On the other hand, some clever authors, confident in their prescience, have written about promising applications that suddenly disappeared, such as Google Health, Google Wave, TweetDeck, Bump, and 280 Slides.

With this in mind, I must express my great admiration for Gohar F. Khan and this book. He has created a very smart and stimulating balance between highlighting slowly evolving concepts and illustrating fast changing tools. I find thoughtful insights into the dimensions of participatory government and the challenges of mass collaboration. I also find detailed instructions for using Fusion Tables and Google Analytics. Of course, I realize that some of the details of the latter might change before I am ready to experiment. I am confident that YouTube and SharePoint tutorials will be available to provide updated instructions. The willingness of people to freely provide their expertise and to offer their opinions is one of the more amazing phenomena that has developed within social media.

Social media has a role in the future of government. The better we understand social media, the more it will improve government. Gohar F. Khan has given us a framework that we can build upon. For that I thank him.

Mark C. Hoffman, Associate Dean
College of Community and Public Service
Grand Valley State University

Preface

Social media is becoming an integral part of life in contemporary society and has changed the creation, sharing, and consumption of information. There are countless stories related to the role of social media in the contemporary society either in the entertainment industries where it propelled Psy (a Korean rapper) to worldwide fame through the spread of his "Gangnam Style" YouTube video or its role in political landscape commonly called as the "Arab Spring" or "Facebook revolution."

Diffusion and use of social media in contemporary society is noteworthy. Billions of people are flocking to social media platforms such as Facebook, Twitter, and YouTube where they share, tweet, like, and post contents. In the contemporary society, these tools are necessary part of communication, content sharing, and collaboration. This growth and tools also present unparalleled opportunity for implementing a transparent, open, and collaborative government. Through social media government can not only keep citizens informed and promote public services, they can empower ordinary citizens in envisioning and co-designing future self-sustainable service ideas. However, many government organizations are still reluctant to leverage social media as it requires significant policy and governance changes, as well as specific knowhow, skills and resources to plan, implement, and manage social media tools. As a result, governments around the world ignore or mishandle the opportunities and threats presented by it.

To help policymakers and governments implement a social media-driven government, this book provides practical knowhow on understanding, implementing, and managing main stream social media tools (e.g., blogs and microblogs, social network sites, and content communities) from a public sector's perspective. The book also provides practical guidance in developing a social media policy and strategy, and addressing issues such as those related to security and privacy.

Hamilton, New Zealand — Gohar F. Khan

Organization

Chapter 1: *Introduction to Social Media*—this chapter defines social media and introduces several social media tools.

Chapter 2: *Social-Media-Based Government*—this introductory chapter aims to set the theme for the rest of the book by introducing several core concepts of social media use in the public sector including components, models, and implementation scenarios. In the subsequent chapters these concepts are elaborated in detail with practical examples and exercises.

Chapter 3: *Enabling a Sharing and Participatory Government*—this chapter introduces the three core concepts of participatory government: information socialization, participation, and communication. To enable the three core components, several practical examples on understanding, configuring, and managing various social media tools are provided. Topics covered include, setting up a Twitter account for official use, setting up an official Facebook page, setting up an official YouTube channel, and setting up an official blog.

Chapter 4: *Enabling a Collaborative Government*—this chapter discusses collaborative government and introduces a variety of ways to establish mass collaboration and crowdsourcing through social media channels. Several practical examples on understanding, configuring, and managing various social media tools are provided, including setting up a wiki for collaborative projects/use, and setting up cloud-based services.

Chapter 5: *Enabling an Open Government*—this chapter discusses open government, its components including government transparency and efficiency, collaborative innovation ecosystem, open data, open government policies and legal framework, open data technologies, open government readiness assessment. Step-by-step guidelines are included on opening your data using Google Fusion Table. A real-world case study of the Helsinki open data initiative is also part of the chapter.

Chapter 6: *Social Media Analytics*—this chapter focuses on monitoring and measuring social media activities. Social media analytics and its seven layers with several analytics tools are introduced to the readers coupled with practical examples on understanding and configuring Google analytics, HootSuite, and blog analytics.

A real-world case study of Seoul local government transportation department on big data analysis is included in this chapter.

Chapter 7: *Social Media Strategy*—this chapter discusses social media strategy in public sector and emphasize that social media efforts should be strategically aligned to support existing agency objectives. Topics covered include understanding social media and agency alignment, social media engagement matrix, steps in formulating a social media strategy, and roles and responsibilities of the government chief information officer (CIO).

Chapter 8: *Social Media Risks Management*—this chapter deals with social media risk management. Issues related to social media risks identification, assessment, mitigation, evaluation, and assessment are discussed. Common social media risks discussed include damage to reputation, releasing confidential information, legal, regulatory, and compliance violations, identity theft and hijacking, loss of intellectual property, virus, and privacy issues. Techniques related to securing your social media platforms discussed include two-mode authentication, strong passwords, and third-party application.

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Contents

List of Figures

List of Tables

List of Case Studies

List of Screenshots

Chapter 1
Introduction to Social Media

Abstract Before diving into the specifics of the social-media-based government, let us spend some time understanding different types of social media tools currently available. The chapter provides an overview of the social media and its underlying tools and technologies. After reading the chapter users will be able to understand the followings.

1. Differentiate among Web 1.0, Web 2.0, and social media.
2. Define social media.
3. Understanding different types of social media.

Keywords Social media · Social media types · Web 1.0 · Web 2.0 · Web 3.0

1.1 Web 1.0, Web 2.0, and Social Media

Before attempting to define social media, we need to understand the platforms/technologies at its foundation. Below, we provide a brief introduction to each.

1.1.1 World Wide Web

The Internet (the global network of interconnected devices) is composed of several technologies (hardware and software) and one of the underlying techniques is the World Wide Web (WWW) or simply the "Web." Web in its simplest form is an arrangement of interlinked hypertext documents (i.e., websites) that can be accessed through the Internet (Berners-Lee 1993).

G.F. Khan, *Social Media for Government*,
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1.1.2 Web 1.0

Web 1.0 or "read-only web" is an early version of the web. At the core of the Web 1.0 were static technologies which allow only one-way information flow (in a one-to-many fashion). Web 1.0 users were only passive recipients of the information/content and could not contribute contents. It was pretty much similar to any other conventional one-to-many technologies such as radio and television. Most websites based on Web 1.0 can be considered as presentational of contents and not generative.

1.1.3 Web 2.0

Unlike to Web 1.0, Web 2.0 supports two-way information flow and user-generated contents (Kaplan and Haenlein 2010; Oreilly 2007; Kietzmann et al. 2011). Through Web 2.0 interface, user can present as well as generate contents (UGC). Web 2.0 works on the principles of sharing, openness, participation, and collaboration. Through a Web 2.0 interface, users can actively participate using a variety of tools including podcasting, blogging, tagging RSS-generated syndication, social bookmarking, social networking, wikis, and other collaborative tools. One important think to note is that Web 2.0 is not a technical standard or an update to the early standard (i.e., web 1.0), but it reflects the changes in the way people use the Web (or programmer design the websites).

1.1.4 Web 3.0

Web 3.0 is the next revolution in the WWW. In addition to having the properties of Web 2.0, Web 3.0 will mark the era of a connected web operating system where most software components (e.g., application programs and operating systems) and data processing will reside on the web. The web 3.0 will be smarter, quicker, and reliable with connecting data, concepts, applications, and people.

1.1.5 Social Media

In its simplest form, social media is an easy-to-use Internet-based platform that provides users with opportunities to create and exchange content (information, opinions, and interests) in a many-to-many context. Social media and Web 2.0 are often used interchangeably. However, they can be slightly differentiated (Kaplan and Haenlein 2010). At the core of social media is Web 2.0 concept and it is an

application of the Web 2.0 concept. In other words, social media is realized based on Web 2.0 concept.

More formally, social media can be defined "an Internet based technologies/tools/concept that allows the creation and exchange of user-generated content while letting users establish (at least one of these) identity, conversations, connectivity (i.e., presence), relationships, reputation, groups, and share contents" (Khan 2014).

Social media is not limited only to some well-known platforms such as Facebook, Twitter, YouTube, and blogs. In this book, we consider any online platform as social media that enables users to participate, collaborate, create, and share content in a many-to-many context. Below we explain some core characteristics of social media.

1.1.6 Core Characteristics of Social Media

One way to understand social media is through its core characteristics that set it apart from the conventional medium. Studying the above-mentioned types of social media one can observe the following core characteristics.

Social media is a many-to-many medium—unlike the conventional medium (e.g., print, radio, and TV), social media enables interaction among the users in a many-to-many fashion.

Social media is a participatory—social media is a participatory medium open to feedback and participation. Social media users can participate in the online discourse in a variety of ways, including podcasting, blogging, tagging RSS-generated syndication, social bookmarking, social networking, wikis, and other collaborative tools.

Social media is user owned—social media content is mostly granted, owned, and controlled by users themselves. Facebook or YouTube, for example, without user generates contents would be empty boring online spaces.

Social media is conversational—social media is a many-to-many conversational medium unlike to the traditional one-to-one or one-to-many medium of interaction.

Social media enables Openness—social media provides new opportunities to access to data and information through social media and Web 2.0 channels.

Social media enables mass collaboration—social media channels allow user to establish mass collaborations by working together in a many-to-many context to achieve certain shared goals.

Social media is relationship oriented—most of the social media tools allow users to easily establish and maintain social and professional relations in a many-to-many context.

Social media free and ease of use—yes, most of the social media platforms are free and easy to use.

1.1.7 Types of Social Media

Social media consists of a variety of tools and technologies that include the following.

1.1.7.1 Social Networking Sites

Social network sites or services (SNS) are mostly focused on online social relationships (e.g., Facebook and Cyworld) among users. SNS is an internet-based platform that is used to build and maintain social relations among people who share interests, activities, backgrounds, or real-life connections. With SNS user can (1) construct a public or semi-public profile, (2) establish link (friendship) relationships with other SNS users, and (3) view and traverse their list of connections and those made by others within the system Boyd and Ellison (2007, pp. 1–2). Currently, there are two versions of SNS, a publically available and a business SNS. For example, in addition to its public version, Facebook recently announced releasing a business social networking site 'Facebook at work' aimed at cooperate users, allowing them to create social networks and collaborate.

1.1.7.2 Content Communities

Content communities, such as YouTube and Flicker, are defined[1] by "a group of people coalescing online around an object of interest held in common. The object can be just about anything e.g., photos, videos, links, topic or issue, and is often organized and developed in a way that either includes social network elements or makes them central to the content."

1.1.7.3 Blogs

Blog is a type of online personal space or website where an individual (or organization) posts contents (text, images, videos, and links to other sites) and expresses opinions on matters of personal (or organizational) interest on a regular basis. It is not just a personal diary or journal, but a great way to built a community of readers and receive early and direct feedback on issues and innovative ideas.

[1]*Source* Technology in Prevention, "Content Communities". Available from http://technologyinprevention.wikispaces.com/Content+Communities.

1.1.7.4 Terminologies

Blog(noun)—an online personal space or website.
Blogger(noun)—a person who maintains a blog.
Blog(verb)—to write a blog—I write a blog every morning.
Blogging(verb)—the action of writing a blog—Blogging is my passion.
Blog posts(noun)—the individual entries or articles on a blog—my blog has 100 posts. Posts are listed in reverse chronological order on the blog home page.
Posting(verb)—is the act of posting articles (contents) on a blog.

1.1.7.5 Features of a Blog

Interactivity—is the ability of readers to leave comments in response to a blog post.
Archives—blogs provide archives of past blog entries stored in a reverse chronological order (most recent appears first).
Subscription—internet users can subscribe to blogs. Subscribed users are alerted users when new content is post on the blog.
Focused—most blogs are focused on a certain area of interest.

1.1.7.6 Blogging Platforms

Several companies provide blog services. The most popular ones are http://www.wordpress.com and http://www.bloggers.com. This link provides a list of more than 40 free blog platforms. With most of the platforms, one can easily build and manage a professional-looking blog without any technical know-how or programming skills.

1.1.7.7 Micro-blogging

Allow users to exchange/publish brief messages. The message can be text, images, or links to other websites. The most popular micro-blogging platform is Twitter.

1.1.7.8 Online Collaborative Projects (e.g., Wikipedia and Wikispaces)

Online collaborative projects (such as Wikipedia) carried out through Web 2. Technologies allow people to plan, coordinate, add, control, and monitor content in collaboration with others. At the core of the online collaborative projects is the concept of Wiki. Wiki is a type online content management system that allows

users to add, modify, or delete content simultaneously in collaboration with others. Famous examples of wiki-based platforms are Wikipedia add Wikispaces. The concept of wiki was first conceived by Ward Cunningham.

1.1.7.9 Folksonomies or Tagging (e.g., Delicious)

The term folksonomy, also known as social tagging, social indexing, and collaborative tagging, is attributed to Thomas Vander Wal. It is created by fusing folk and taxonomy. In simple words, it is the method of organization data and constant (through tagging) from a user's perspective. For example, del.icio.us—a social bookmarking system allows users to tag, organize, classify, and share content (web address or sites) in their own unique ways. These days, almost all prominent companies (e.g., Facebook and Flicker) also provide tagging services to their users. Since the contents are tagged with useful keywords, social tagging expedites the process of in searching and finding relevant content.

1.1.7.10 Virtual Worlds

Virtual world is a computer-generated online environment. It can take the form of three-dimension (3D) virtual social world (e.g., Second Life) where people digitally represent themselves inform of avatars and interact with others through text and voice messaging. It can also take a form of virtual interactive games, for example, World of Warcraft. Mostly, the virtual world environment is created by the users themselves. Virtual reality is another dimension of the virtual worlds, where real and virtual are fused together. Virtual reality uses computer software and hardware tools to simulate physical presence the virtual world.

1.1.7.11 Purpose-Built Platforms

Social media is not only limited to the aforementioned types, but any online platform (including purposely built in-house platforms) that enable us to participate, collaborate, create, and share content in a many-to-many context can be called social media. Content can be anything including information, audio/video, profiles, pics, text, etc.

Chapter 2
Social-Media-Based Government

Abstract This introductory chapter aims to set the theme for the rest of the book by introducing several core concepts of social media use in the public sector including its components (namely, sharing, participation, openness, and collaboration), models, services, and implementation scenarios. Social-media-based government is compared and contrasted with e-government and government 2.0. After reading the chapter the readers will be able to understand: (1) Social-media-based government, (2) Components of social-media-based government, (3) Models for social-media-based government, (4) Uses of Social-Media-based Government.

Keywords Social media in government · Readiness · STOC culture · Components · Models · Use of social media

2.1 Social-Media-Based Government: It's All About Culture

Social-media-based government (SMBG) is more than just tweets, post, likes, and share. It is a governance culture of transparency, sharing, openness, and collaboration facilitated (or fostered) by social media (Khan 2014). SMBG is not just about establishing social media presence (e.g., creating a Facebook fan page or a government Twitter account), but it requires or should be complemented with a governance culture of sharing (S), transparency (T), openness (O), and collaboration (C) (let us call it STOC culture). Without a STOC culture, full benefits of SMBG (such as, promoting transparency, openness, fighting corruption, and empower ordinary citizens in cocreating public services) cannot be realized. While of the profound importance, STOC culture is composite construct and nurturing it is daunting task requiring administrative, financial, political, legal mandate, and behavioral changes at all levels of public sector. Governments should start considering social media as a strategic tools to serve citizens effective, give a voice to them, and at the same time reducing administrative cost. It is beyond the scope of this book to discuss strategies and techniques to induce a social media conducive

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culture. However, the World Bank open government readiness framework (discussed in Chap. 7) can be used to access STOC culture readiness on institutional, political, legal, financial, technical, and social dimensions. Below we briefly discuss these dimensions.

Leadership—in order to induce the STOC culture, a strong commitment for engagement through social media from the leadership is crucial. For STOC culture to take its roots in the public sector, a strong leadership, political well, commitment, and desire to make government more transparent and open is crucial. One of the main force, for example, behind the uptake of Open Government Partnership (OGP) to make government more transparent, open, and collaborative was the strong leadership and commitment of Obama Administration. A cultural and behavioral change is needed toward social media technologies and its potential in public service provisioning. Asking the following questions may provide some clues.

- ➢ Is there visible political leadership of engaging through social media?
- ➢ Does the high level leadership understand social media its potential in public service delivery?
- ➢ Is there an established political structure for policy and implementation of social-media-based government initiatives (such as crowdsourcing and cocreations)?
- ➢ Are there any existing political activities or plans relevant to social media?
- ➢ Does the wider political context of the country help or hinder engaging through social media?

Policy and legal framework—having a sound policy and regal is very crucial for the startup stage of the social-media-based conducive culture. For example, Australian Justice Ministry enacted a social media policy to establish a culture of openness, trust, and integrity in their online activities (the policy in included in Chap. 7). The following questions need to be asked.

- ➢ Is there any policy on social media use of public sector?
- ➢ What policies/laws help or hinder the sharing of information over social media?
- ➢ What policies/laws help or hinder providing opportunities to citizens to participate in policy and decision-making through social media channels?
- ➢ What policies/laws help or hinder access to government structured data and information opened through social media and Web 2.0 channels?
- ➢ What policies/laws help or hinder all together with citizens in a many-to-many context to achieve certain shared goals carried through social media channels?

Institutional structures, responsibilities, and skills within government—agencies should also possess or develop structures, procedures, and skills to manage the "supply side" of the social media initiative including processes for social media management, skilled ICT staff capable of handling social media platforms (e.g., crowdsourcing platforms and analytical abilities). Questions to ask are:

➢ Is there an agency or entity that has the mandate, project management experience, and technical skills to manage existing and purpose built social media platforms.
➢ Do any agencies have a CIO, CTO, or permanent official positions dedicated to social media management?
➢ Is there any process currently used to measure agency performance or quality of service delivery?
➢ Is there a systematic process for collecting, cleaning, and analyzing social media data (including comments, ideas, and suggestion submitted)?

Demand for social media/citizen engagement—to get out most social and economic value out of the social media engagement, creating and having a strong demand for it is crucial. Agencies also need to manage and develop "demand side" partnership by engaging with consumers of social media including, citizens, developers, companies, nongovernmental organizations, and other agencies. Only a strong demand can lead to an innovative ecosystem where societies create new business and services that deliver social and economic value. A demand can be created, for example, by establishing a formal government policy on social citizen engagement policies and by empowering civil society champions.

- What is the level and nature of demand for data from civil society?
- What is the extent of engagement with government through social media and other digital channels?
- What is the extent of intra- and inter-government demand for engaging though social media?

Collaborative innovation ecosystem—for a greater social and economic impact, alongside sharing information through social media, governments should try to create a "collaborative innovation ecosystem" where governments address the policy/legal framework for social media engagement, institutional readiness, capacity building, citizen engagement, innovation financing, and technology infrastructure. In the "ecosystem" approach agencies create social and economic value by engaging civil society to get feedback, cocreate public services, crowdsourcing solutions and idea, and create new innovative business.

- Has government engaged in activities to promote collaborative use of social media? (e.g., organizing crowdsourcing and cocreation events)?
- Is there a collaborative economy that already exists or is emerging in your country/locality (e.g., has any business or individual developed any apps mass collaborative activities)?
- Is there an academic or research community that both trains people with technical skills and has people skilled at crowdsourcing and cocreation tools?

Financial considerations—Financial resources are need to fund both the "supply side" (e.g., development and maintenance of social media portals, ICT skills training, application development, and data analytics) and the "demand side" (e.g., financing innovative projects arising from the collaborative ecosystem and capacity

building) of the social media initiative. The following question will assist you in determining financial resources.

- Have sufficient resources been identified to fund social media engagement?
- Do any resources exist or have any been identified to fund development in-house mass collaboration platforms, if needed?
- Is sufficient funding available to support the necessary ICT infrastructure and ensure enough staff have the skills needed to manage social media?
- Does your government have any funding mechanisms for innovation arising from the collaborative ecosystem?

National technology and skills infrastructure—this component of the readiness assessment looks into national ICT knowledge and skill infrastructure, for example, the availability of high speed internet access, government web presence, smartphone penetration, skilled developers and programmers, open data standards, and data analytics skills.

- Is Internet access at sufficient levels and at low enough cost to support collaborative ecosystem in your country?
- How strong is the government's overall ICT skill base among senior government leaders and civil servants?
- How strong are the IT industry, developer community, and overall digital literacy in your country/locality?
- How active is the government's presence on the social media?
- How active is the citizen's engagement in social media?

One point to note is that there exist a cyclic relationship between the SMBG and the STOC culture (see Fig. 2.1) (Khan 2013b). They both exert positive influence on each other and existence of one may nurture other. Important thing to note, however, is that the presence of the needed STOC is crucial regardless of how it is nurtured: it can either exist prior to the social media adoption or it can be nurtured by social media. Without a complementary STOC culture social media use in public sector may not lead to any targetable benefits (discussed later). It is the existence or absence of the STOC culture that will determine how much social media initiative at your organization is fruitful. Without complementing it with a STOC culture, your social media efforts will only be limited to tweets, post, likes, and share (see Fig. 2.3). Components of the STOC culture are briefly defined below and discussed in detailed in the proceeding chapter.

2.1.1 Components of Social-Media-Based Government

Following are the main components of social-media-based government reflected in the STOC culture (Fig. 2.2). These components will be discussed in the subsequent chapters in detail.

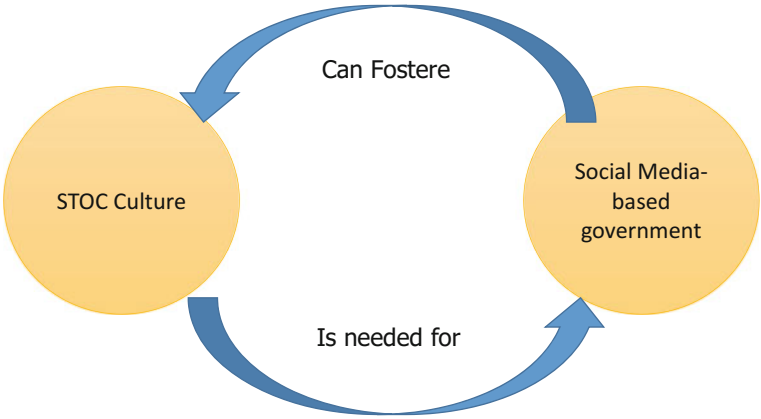

Fig. 2.1 Culture for social-media-based government

Fig. 2.2 Components of social-media-based government

2.1. **Sharing**—refers to the use social media channels (such as, Twitter, Facebook, wikis, YouTube, and blogs) to disseminate and share useful information (news, alerts, and updates) to public in variety of formats including, text, video, audio, and graphics (discussed in Chap. 3).
2.2. **Participation**—refers to providing opportunities to citizens to participate in policy and decision-making through social media channels (for example through comments and feedback expresses through social media channels) (discussed in Chap. 3).
2.3. **Mass Collaboration**—refers to working together in a many-to-many context to achieve certain shared goals carried through social media channels. It may take a variety of forms, including government working with government, government working with citizens, and citizens working with citizens to achieve certain shared goals (discussed in Chap. 4).
2.4. **Openness**—refers to free unrestricted access to government structured data and information opened through social media and Web 2.0 channels (discussed in Chap. 5).
2.5. **Measurement**—the measurement components employ social media analytics in monitoring and measuring social media activities (discussed in Chap. 6).
2.6. S**trategy**—strategy components of the SMBG deals with developing a course of actions to strategically align social media with existing agency goals (discussed in Chap. 7).
2.7. **Risks management**—risks management component deals with social media risks identification, assessment, mitigation, evaluation, and assessment (discussed in Chap. 8).

2.1.2 Potential Versus Current Use of Social Media

Public sector from around the world is using social media in their day-to-day activities for different purposes, such as, to disseminate useful information, to foster mass collaboration, and to enforce laws and regulation (Khan 2014; Osimo 2008). Leveraging social media tools, government can not only keep citizens informed and promote public services, they can empower ordinary citizens in envisioning and codesigning future self-sustainable service ideas. Through social media, governments can provide online services at various levels, including government-to-government (e.g., government wide collaborative projects facilitated by wikis), government-to-citizen (e.g., dissemination of critical information and news through Twitter), government-to-business, and government-to-employee (e.g., using YouTube as a training medium or collaborative tools to generate idea), citizen-to-government (e.g., public service cocreation where citizens serves role of active participant in delivering public services to other citizens). However, the role of social media in public service delivery is not yet fully realized. A recent study (Khan 2014) found that governments from the around the world use social media

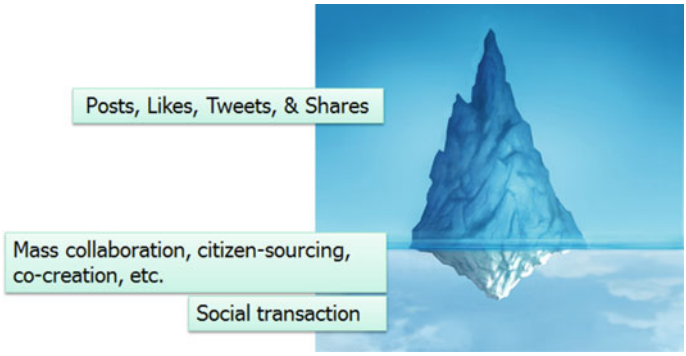

Fig. 2.3 Current social media use by governments

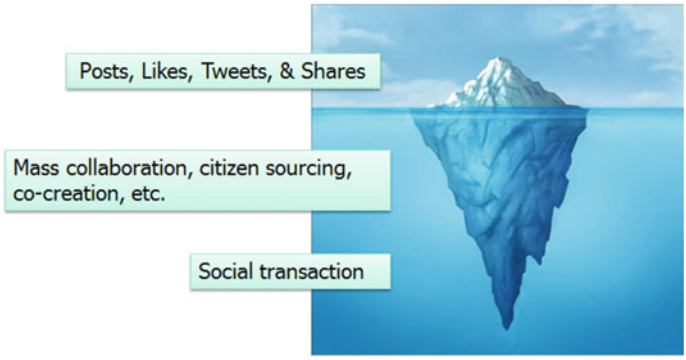

Fig. 2.4 True potential of social media in public sector

mostly for informational purposes (such as, tweets, shares, and likes), and using social media in this way is just the tip of the iceberg (see Fig. 2.3).

However, the true potential of social media in public service delivery lies in establishing mass collaboration through social media channels, citizen-sourcing, cocreation of services, and providing tangible online transaction through social media/web 2.0 channels. Leveraging social media tools for informational services is just the tip of the iceberg (Fig. 2.4). Harnessing the true potential of social media (e.g., through mass collaboration, citizen-sourcing, and cocreation of services) is largely dependent on complementing social media efforts with a STOC culture.

2.1.3 E-Government Versus Social-Media-Based Government

Social-media-based government can be considered as a public face of electronic government (or e-government) focused on sharing, participation, openness, and

collaboration. While both faces of government use ICTs to make delivery service transparently and efficiently; they can be slightly differentiated in three ways (Khan 2013a). First, from a technological perspective, e-government leverage static enterprise and domain specific technologies and Web 1.0. Whereas, social-media-based government leverage consumer and commoditized technologies, such as social media and Web 2.0 (Maio 2009). Second, e-government is based on an inside-out strategic approach, i.e., transforming and employing internal government resources (such as computerization of government systems and processes) to deliver public services. Whereas; social media mandated government employee an outside-in strategic approach to harness external resourcing (e.g., social media, collaborative technologies, and wisdom of crowds) to service its constituents. Third, e-government services flow in one direction from the government to the public, whereas, in the social-media-based government settings the end user is not merely consume of the public services, but also an active producer of the services (Linders 2012, #42).

2.1.4 Government 2.0 Versus Social-Media-Based Government

Social media (if defined broadly as in the book) in public sector may take different forms. Mostly, in the academic literature, social media/web 2.0 use by governments is known as Government 2.0 (Eggers 2005). Some scholars define Government 2.0 as "the use of information technology to socialize and commoditize government services, processes, and data". Socialization of information can be achieved in three ways: (1) from government to citizen, through opening government data to the public for creating public value through aggregation; (2) from citizen to government, by incorporating user generated data/information that is relevant to the government processes; and (3) inside government, through using internal or consumer collaboration platforms for internal socialization of knowledge. The following are some of forms social-media-based government is taking in the academic literature.

- Do-it-yourself Government (Dunleavy and Margetts 2010);
- Collaborative Government (McGuire 2006; Chun et al. 2012);
- Government as a Platform (O'Reilly 2010);
- Open Government (Patrice 2010);
- Social Government (Khan et al. 2012); and
- We-Government (Linders 2012).

Regardless of the ways to describe it, the primary purpose of leveraging social media tools/technologies in public sector is to make the governments more transparent, open, accessible, and collaborative.

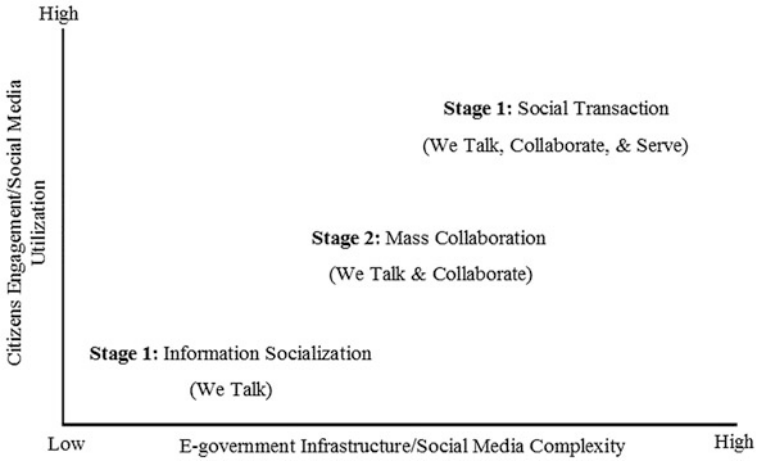

Fig. 2.5 Government 2.0 utilization model (*source* Khan 2014)

2.1.5 Social-Media-Based Government Services and Stages

The services provided through social medial can be broadly categorizes manly in three ways (Khan 2014): information socialization, mass collaboration, and social transaction depending on the existence of e-government infrastructure, Web 2.0 complexity, and citizens' engagement level (see Fig. 2.5).

2.1.5.1 Information Socialization

Information socialization is the concept of using social media tools mostly for informational and participatory purposes. Social media is used by the public sector as an informational and participatory channel to increase citizens' awareness and enable them to monitor and participate in government activities. Socialization of government information can be achieved through establishing dedicated social media pages (e.g., Facebook fan page or Twitter account) to delivery day-to-day information or news to the citizens. Chapter 3 discusses the use of four popular social media tools (i.e., Facebook, Twitter, YouTube, and Wordpress) to socialize government information.

2.1.5.2 Mass Social Collaboration

Mass social collaboration is the concept of using the collaborative power of social media to tap in the collective intelligence of the masses. Governments use social media tools to foster mass collaborations among different government organizations, and between governments, citizens, and businesses at different levels.

Mass social collaboration enabled through social media can be instrumental in crowdsourcing, regulation, law enforcement, and cross-agency collaborations. Chapter 4 discusses two popular social media tools (e.g., wikis and cloud-based services) to establish mass collaboration.

2.1.5.3 Social Transaction

Social transaction is the concept of providing tangible online services through social media channels. Currently, governments around the world hardly use social media for tangible transactions (e.g., using Facebook to provide tangible services to citizens such as renewing driver's license and paying parking tickets). However, in future, once the trust over social media develops and technology is ready to serve the citizens, governments may consider it. Discussing social transaction over social media is beyond the scope of the guide.

2.1.6 Models for Social-Media-Based Government

While governments are exploring social media use in public, researchers are documenting this use and have suggested several models for social media use in public sector (Lee and Kwak 2012b; Mergel and Bretschneider 2013; Khan 2014; Khan and Swar 2013). Document technology use in form of models is very common in electronic government literature (Andersen and Henriksen 2006; Layne and Lee 2001; Khan et al. 2011); mainly, because these models provide useful guidelines to policy makers and researcher. Looking at literature, one can identify at least five that documented social media use in public sector. The number is limited because the field is emerging and in future more such models will be available. We discuss four models here (the forth model is discussed in the Chap. 5 because it relates more to open government).

2.1.6.1 Social Media Utilization Model

Social media utilization model, developed by Khan (2013), looks into social media in public sector from the citizen's perspective, i.e., how social media can be used to engage and serve citizens. The model was developed through an analysis of government websites and social media and Web 2.0 initiatives from around the word. Following are the three stages of social utilization model.

Stage 1—Information Socialization: at the first stage, public sector uses social media channel, such as, Twitter, Facebook Fan pages, and blogs to disseminate information and news to citizen.

Stage 2—Mass Collaboration: at the second stage, governments move beyond information dissemination to establishing to mass collaboration efforts through social media. Techniques, such as, crowdsourcing and coproduction are used to create and distribute public goods.
Stage 3—Social Transaction: Stage 3 is the advance stage in which government tries to use social media and Web 2.0 tools to provide tangible online services to the citizens.

The model does not follow a structural approach and suggest that depending on the expertise and resources available to government agencies, the proposed stages can be implemented at any order regardless of the other stages. For example, depending on the resource availability (such as financial and technical), some government may choose to jump start mass collaboration or social transaction stages without establishing much social media presence (i.e., stage 1). However, mass collaboration and social transaction efforts require a robust human, financial, and technical (e.g., e-government) infrastructure (Khan 2013a) to make it work.

2.1.6.2 Adoption Process for Social Media

Mergel and Bretschneider (2013) suggest a three stage adoption process for social media use in public sector. According to the model the government use of social media evolves from an informal experimentation by few entrepreneurs to an organized agency wide form of communication medium involving clearly outlined strategy and polices of social media use (Mergel and Bretschneider 2013).

Stage 1—Decentralized Informal Experimentation: at its first stage social media use in public sector is mostly an unofficial bottom-up experimentation carried by a few innovative employees for sake of their own departments or services. Such use is mostly informal and outside the normal control of information technology departments.
Stage 2—Coordinated Chaos: at stage two, informal social media use standard emerges to avoid social media dangers that may arise due to the unofficial bottom-up experimentation carried in stage 1.
Stage 3—Institutionalization and Consolidation: at this stage, formal organizational guidelines, strategies, and policies emerge, and social media is recognized as a one of the official mediums of communications and engagement.

2.1.6.3 Social-Media-Based Engagement

Schwalji and Aradi (2013)'s model of social media engagement documents contextual of social media from the Arab's perspective. With three stages, the model shed light on the use of social media in public sector in Arab world (Schwalji and Aradi 2013).

Stage 1—Initial transparency and citizens' engagement: Like Khan's model, the first stage of this model deals with use of social media as information dissemination channel. Here, social media is mostly used as a one way communication to share news items and important events.
Stage 2—Enhanced transparency, citizen participation, and collaboration: at this stage a limited two communication happens related to the services offered by governments.
Stage 3—Full transparency, citizen collaboration, and participation: at stage 3, using social media channels, government tries to provide services and become more accessible.

2.1.6.4 Framework for Government's Use of Web 2.0

Chung and Kannan (2008)'s *Framework for Government Use of Web 2.0* provides an overview of social media in public sector from use perspective and suggest that the Web 2.0 use in public sector can take three distinct types, (1) communication-focused use, (2) interaction-focused use, and (3) service-focused use. The framework further suggests that the level of engagement with the citizens and constituents increases as we move from communication-focused uses to service delivery focused uses.

Stage 1—Communication-Focused Uses—at this stage the main objective of the social media is to disseminate government information to citizens using variety of social media tools such as blogs, podcasts, RSS, wikis, and enterprise social networks.
Stage 2—Interaction-Focused Uses: interaction-focused use of social media is primarily focused on two-way interaction and communication with citizens. Using social media tools and technologies, the government enables two-way communication channels to get citizens feedback on policies, issues, services, and plans of the government. In short, the main objective of interaction-focus use is to tap into the "wisdom of the crowd" for improving government services.
Stage 3—Service-Focused Uses: at this stage the governments try to "marry the network effects of social computing with the intermediary role of network members" to provide customized services to the citizens. Examples of such uses include service provision at citizens' location, virtual world experimentation, and citizen/business engagement to enhance trust and loyalty.

2.1.7 Conceptualizing Social-Media-Based Government

Figure 2.6 illustrates the use of social media in public sector. As shown by the pipe in the middle of the Fig. 2.6, governments use social media to socialize government information, establish mass collaboration, and provide tangible online services

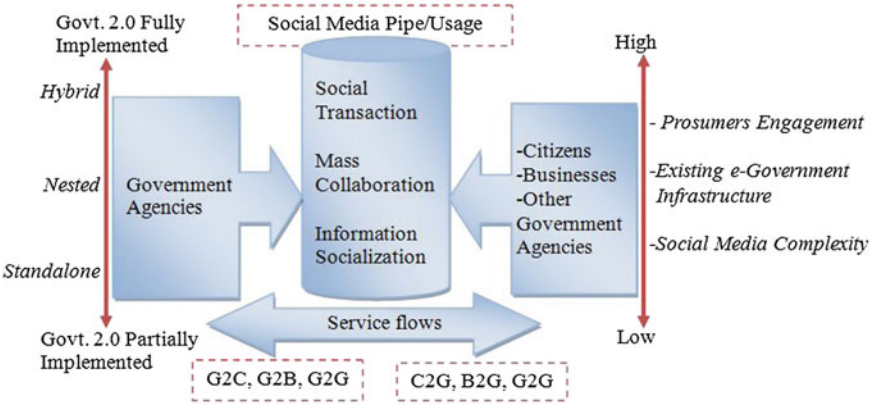

Fig. 2.6 Conceptual model of social media use in public sector (*source* Khan 2014)

(Khan 2013a). Through this pipe producer and consumer (or prosumers, i.e., government agencies, citizens, and businesses) of government services are connected. Note that the flow of services created is bidirectional, i.e., they are coproduced by government and citizen (Linders 2012). However, the services coproduced depend on the existence of sound technical and social infrastructure. For example, countries with low technical and e-government infrastructure will be limited only to provide limited services over social media. And as the capabilities improve, more complex services can be coproduced. The figure also shows three stages of social-media-based government (information socialization, mass collaboration, and social transaction discussed earlier), implementation scenarios (i.e., standalone, nested, and hybrid forms) at which social-media-based government can be enabled and the type of relations it holds with the citizens.

2.1.7.1 Implementation Scenarios

The three social media implementation scenarios are explained below.

Standalone scenario—in the stand alone scenario, implementing government 2.0 does not require complex technical, financial, and e-government infrastructure. For example, it can be directly implemented under paper-based government settings without the need for a complex ICT or e-government presence. All it will need is internet connected computer and a personnel with basic know-how's of social media tools. Under these settings, however, government cannot move beyond tweet, share, like, and cannot reap full benefits offered by social media, such as, crowdsourcing and social transaction. Nevertheless, it will be instrumental in establishing online presence and initiating two-way communications with citizens. The least developed countries with no or limited finical and technical infrastructure may fully benefit from this scenario.

Nested Scenario—under this scenario government takes full advantage of existing financial, human, and e-government infrastructure to implement a social-media-based government. Government goes beyond tweet, share, like, and starts social media tools for internal and external collaborations and service provisioning. The developing and transitional economies are mostly implementing nested government 2.0 (Khan 2013a).
Hybrid Scenario—under this scenario, governments (mostly in advance economies) fully leverages financial and human resources, and e-government infrastructure and mobile technologies to implement social-media-based government in its full swing. This scenario can be defined as "a flavor (or subset) of ICT-based government that harnesses social media tool and technologies to establish open, transparent, and participative government". Government employs social media technologies for informational, participatory purposes, and collaboration and transactional purposes.

2.1.7.2 Relationships in Government 2.0

Conventionally, the main purpose of the government, be it a paper-based government or electronic government is to provide services to citizens (G2C), business (G2B), and governments (G2G). In the literature these services are referred to as the service relationships e-government holds with its constituents (Silcock 2001; Layne and Lee 2001).

However, social media extends these relationships further by letting both parties to be coproducer of services. In other words, service now flows in both directions (that is citizens are actively providing public services). Due to social media the roles of government and citizens are interchangeable. Citizens are no more passive receivers of government services, but rather partners in the delivery of public services (Linders 2012). This new type of relationship is called as C2G (citizens to government). Under C2G relationship, using social channels, citizens actively provide services meant to be originally produce by governments. A good example of such services is "MyBikeLane" a citizen led initiative (http://www.mybikelane.com/) for reporting illegal car parking. Another good example is "Caughtya" (http://www.caughtya.org/) a Web 2.0 website for reporting illegal car parking in disability parking spaces.

Chapter 3
Enabling a Sharing and Participatory Government

Abstract This chapter focuses on three dimensions of participatory government, namely, information socializations, participation, and two-way communications. A case study on the use of Facebook for effective social marketing and awareness campaign by Ministry of Health (MoH) of New Zealand is also included in the chapter. The chapter also provides practical guidelines on understanding, configuring, and managing various social media including setting up official Twitter, Facebook, blog, and YouTube Channel. After reading this chapter you will be able to

- Understand the concept of participatory government;
- Understand, configure, and manage a Twitter account for official use;
- Understand, configure, and manage an official Facebook fan page to keep citizens inform and engaged;
- Understand, configure, and manage an official YouTube channel; and
- Understand, configure, and manage an official blog.

Keywords Social media participation · Socializations · Two-way communication · Facebook · Twitter · YouTube · Blogs

3.1 Introduction to Participatory Government

The purpose of participatory government is to leverage social media as an informational and participatory channel to increase citizens' awareness and engagement. Three main important components of participatory government are information socialization, participation, and communication. Information socialization, participation, and communications are at the essence of social media-based engagement (Fig. 3.1). Social media-based engagement and messaging is very cost-effective and can research a huge number of people reached almost in real time. For example, as of October 2014, a tweet by President Barack Obama can instantly reach 48.4 million followers. Unlike the traditional media, sharing, participation, and communication over social media is two and many-to-many with a feedback loop

G.F. Khan, *Social Media for Government*,
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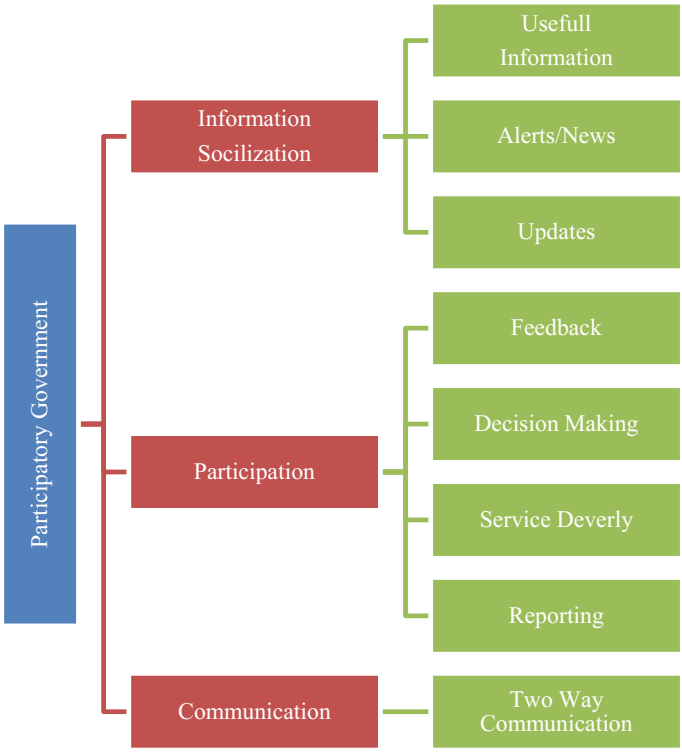


Fig. 3.1 Dimensions of participatory government

between government and citizens that helps ensure messages are being understood and acted upon. The engagement process between the citizen and government over social media is much better and offers governments a good picture of citizens' needs and expectations. The case study included in chapter demonstrates the use Facebook for effective social marketing and awareness campaign by Ministry of Health (MoH) of New Zealand. Below we briefly discuss the main components of the participatory government.

3.2 Components of Participatory Government

3.2.1 Information Socialization

Information socialization is the use of social media channels (such as Twitter, Facebook, YouTube, blogs, and purpose-built platforms) to disseminate and share useful information (news, alerts, and updates) to public in variety of formats, including text, video, audio, and graphics (Fig. 3.2). Information socialization can

Fig. 3.2 City and County of San Francisco Facebook page

take two forms: (1) simple information socialization and (2) complex information socialization (Khan 2013a).

3.2.1.1 Simple Information Socialization

Simple information socialization is achieved by merely incorporating social media channels in the existing government website (e.g., by embedding Facebook-like buttons and RSS feeds in the website) and creating official social media pages (e.g., Facebook fan page or Twitter account) to deliver day-to-day information or news to the citizens. Governments around the world use social media outlets to provide citizens with information about government services and projects, local events, rules and regulations, and other relevant topics. For example, City and County of San Francisco (Fig. 3.2) maintains a healthy social media presence and has thousands of followers on Facebook and Twitter. In addition, citizens can send service requests by sending a tweet to the City 311 Service center using their twitter handler: @SF311 (more information on the Twitter handlers is provided in the proceeding sections). In this way, the city takes advantage of the free and conversational nature of social media to disseminate information and news in timely manner. Establishing simple information socialization is almost free of cost and easy to Accomplish. Developing countries, for example, with low technical and financial resources can take full advantage such platforms. However, it may not have huge impact in terms of social and economic value creation.

3.2.1.2 Complex Information Socialization

Complex information socialization is achieved through creating advanced in-house Web 2.0 platforms for information display and participatory purposes. The School Information Service initiative by the Ministry of Education of Singapore (http://app.sis.moe.gov.sg/schinfo/index.asp) is a good example of an advanced social complex information socialization where parents and students keep track of useful information such as location of the school, contact details, and its achievements. Other examples include http://www.chicagocrime.org, http://openlylocal.com/, and http://www.farmsubsidy.org/. Enabling complex informational and participatory government portals (such as http://www.data.gov/about) may have huge social and economic impact and requires financial and technical resources and existing e-government infrastructure.

3.2.2 Participation

Participation refers to providing opportunities to citizens to participate in policy-making and decision-making, and service delivery through social media channels (for example through comments and feedback expresses through social media channels). Participation through social media can take several forms. Some forms of social media participation are discussed below.

Feedback and discussion making—feedback or social listening is listening to the formal or informal citizens' feedback (comments complaint, question, or suggestion) on social media sites expressed in the form of comments or posts. Actively listening can help governments better understand citizen's needs, build loyalty, and tap into the wisdom of crowds. Citizen's feedback can then be reflected in decision-making and policymaking.

Reporting—citizens increasingly use social media and Web 2.0 tools and technology to report issues of urgent attention to the government. For example, "Fixmystreet" (http://www.fixmystreet.com/) is a good example of using social media and Web 2.0 tools for reporting purposes, where citizens use a Web 2.0 portal to report a problem related to their locality (such as fly tipping, broken paving slabs, or street lighting) which is then forwarded to the council to fix the problem. Citizens and police departments, for example, use online tools for reporting crimes and other unacceptable behavior. A good example of such services is 'MyBikeLane' a citizen-led initiative for reporting illegal car parking or 'Caughtya' a Web 2.0 website for reporting illegal car parking in disability parking spaces. This type of reporting mechanism which is entirely citizens initiated (e.g., FixMyStreet) comes under the C2G (citizens providing services to government) and C2C (citizens providing services to other citizens) social media-based engagement.

Service delivery—social media platform can be used to provide tangible online services to the citizens. Service deliveries over social media channels go beyond

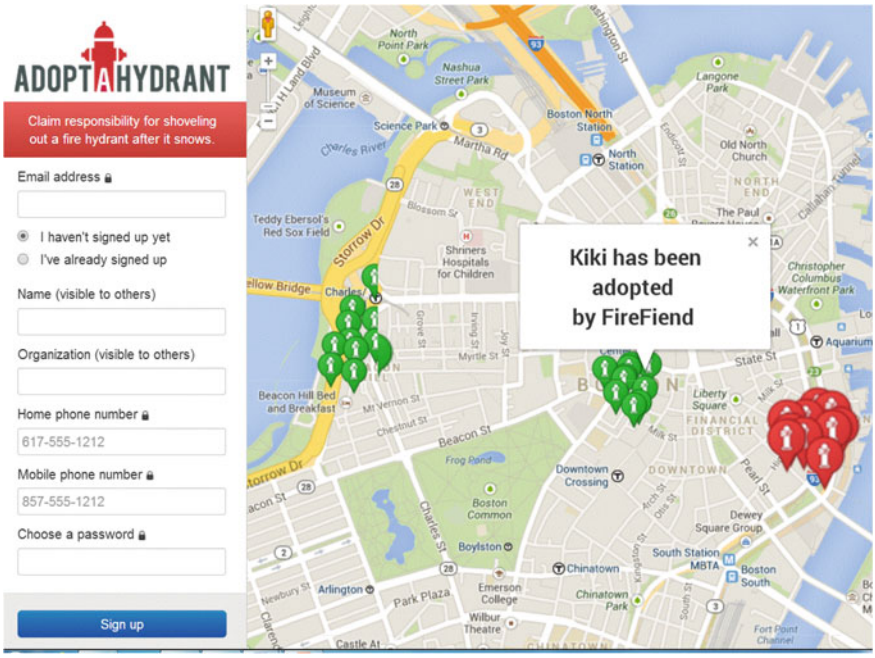


Fig. 3.3 Adopt a hydrant initiative

information sharing and reporting and enable governments and citizens to cocreate public services. Social media is used to provide online service to the citizens. Service delivery can also take the form the G2C form where government uses social media and Web 2.0 channels to provide online services, or it can take a form of C2G where citizens and government cocreate public services. Yet another form it can take is C2C where citizens provide public services to other citizens. A good example of service delivery over Web 2.0 technology is the "Adapt a Fire Hydrant" initiative (http://adoptahydrant.org/): an online crowdsourcing platform where ordinary people take responsibility for digging out a fire hydrant after it snows. Or the "Adapt a Tsunami Siren" (http://sirens.honolulu.gov/) initiative by the government of Honolulu, where using Web 2.0 platform ordinarily citizens take responsibility for taking care of Tsunami Sirens installed in Honolulu (Fig. 3.3).

3.2.3 Two-Way Communication

Communication refers to the two-way exchange of information among government and citizens through social media channels (for example, through comments and feedback expresses through social media channels). Social media channels provide

a very cost-effective way of communication with a huge number of people in a real time and may take the forms of one-to-one communication among government and citizens, one-to-many, and many-to-many.

3.3 Enabling Participation and Sharing

There are countless ways to enable sharing and participation on social media, including the free tools available tools (e.g., Twitter, Blogs, and Facebook), and special purpose in-house made tools such as the "Adapt a Tsunami Siren" platform. The development of in-house tools is beyond the scope of this book. In terms of the free platforms, the following are some of the widely used platforms/options:

➢ An official Twitter account.
➢ An official Facebook fan page.
➢ An official YouTube channel.
➢ An official blog.

If configured correctly and used properly, these channels can greatly improve social media-based engagement and open new and cost-effective ways of information disseminations, feedback, and reporting. The next sections will provide step-by-step guidelines on how to configure these channels.

Case Study 1: Breastfeeding New Zealand on Facebook

Background: A research conducted by Ministry of Health (MoH) of New Zealand finds a link between increased breastfeeding rates and lower rates of obesity and type 2 diabetes.
Problem: An effective social marketing and awareness campaign was needed to increase the numbers breastfeeding mothers, especially among Maori and Pasifika women, and to encourage them to continue feeding beyond the minimum recommendation of 6 months.
Context: With the problem identified and a clear goal set, MoH developed a social marketing campaign strategy to target the risk group and let them know the benefits of breastfeeding. This would also provide the MoH with better information on the kinds of support for breastfeeding women in this risk groups that might require. Work in the first year involved engaging with stakeholders including maternity caregivers, Maori and Pacific health providers, health promoters, and breastfeeding mothers. Moh also created television, radio, and magazine advertising to help build awareness. The campaign was successful; however, in the second year of the campaign, MoH was finding ways to go beyond the conventional marketing strategies and to maintain a close connection with breastfeeding mothers. More specifically, the aim was to extend the support for breastfeeding women into the home, and also continue growing community support. Thus, MoH initiated a

second phase of the program which included use of social media among other strategies such as promotion and distribution of an informational DVD and online and print advertising.

Solution—Facebook Pages: In 2009, the Breastfeeding NZ Facebook page was launched with great anticipation. The community managers, the breastfeeding experts who were also skillful users of social media, were an important feature of the Facebook page. They were instructed to post information as well as respond to questions and issues arising from posts on the wall. Using the information gained from other work with mothers and their support networks through the stakeholder engagement group, the Ministry was able to compile a list of topics for the community managers to post on the Breastfeeding NZ wall. These posts further stimulated discussion and feedback from the target audiences, and kept people revisiting the page as the sense of online community and knowledge sharing grew.

Outcome: The Breastfeeding NZ page on Facebook is extremely successful on a number of levels. It has achieved a community of over 10,000 people and continues to grow on a daily basis. The conversations on the page have extremely high levels of engagement: All posts have some level of interaction either as likes, comments, and/or sharing the content on individual women own Facebook page.

Metrics show increased engagement. For example, statistics from January to March 2012 show

- an increase of 2324 likes (to 9404).
- 17,330 stories created about the page.
- 23,415 engaged with the page.
- 101,977 viral reach.
- 13,009,702 impressions of page content (appearing on newsfeed, ticker, wall posts, etc.).

The levels of engagement increase dramatically during competition periods. As an example, the 2012 "Kiwi Heroes" Mother's Day competition ran for approximately four weeks with the following results:

- an increase in page likes of 627.
- 10,753 stories created about the page.
- 58,601 people engaged with the page.
- 270,360 viral reach.
- 4,448,559 impressions of page content.

Resources: MoH spends less than $200,000 a year on the Breastfeeding NZ Facebook campaign. This includes the Community Managers' time to post material and respond to questions, ongoing support for the development (such as the competitions described below), monitoring of the Facebook page, and other resources to support breastfeeding mothers. The campaign includes promotional material such as informational DVDs, T-shirts to keep the breastfeeding messages alive.

Lessons learnt

✓ Contract expertise as needed

The excellent relationship with marketing and advertising consultancy GSL provided a level of service that contributed to the success of this campaign.

✓ Monitor traffic and content on the social media page and be prepared to respond

The Facebook page would not have worked effectively without the ability to monitor traffic on the page and respond where necessary.

✓ Build in the capability to seed information through and monitor response

The community managers are a critically important component. They support the breastfeeding community on Facebook by providing responses to questions and systematically seeding information to generate interest.

✓ Learn as you go

Everyone involved contributed learning. This helped make the Breastfeeding NZ Facebook page work to support mothers, and contributed to achieving the Ministry's goal of increasing rates and duration of breastfeeding.

✓ Commit to the long term

It takes time to build an audience for a Facebook page. The numbers visiting and liking the page have grown steadily over the 4 years, and continue to grow. Key to maintaining this interest is the use of deliberate strategies, such as the posts by the community managers to stimulate discussion and the competitions aimed to draw others to the site.

✓ Think 'where to next'

The children of many of the mothers who have been followers of Breastfeeding NZ on Facebook are now toddlers. Is there an opportunity for the MoH to build on the success of Breastfeeding NZ with a new page focused on the care and feeding of toddlers? MoH are actively thinking about how to support their Well Child strategy and how they can learn from their Breastfeeding NZ on Facebook experience—"you go where your target audience is likely to go."

The ultimate level of success is determined by the perceived value to the community and feedback they provide. The types of posts from users stand out as a mark of the success of the page. A recent comment from a Maori mother exemplifies:

> I love sharing a success story after getting such wonderful advice. What a difference a day makes. Yesterday I pumped 100mls of milk for my baby, today 225mls! I had a hot bath this morning, and while a friend looked after my bubba I went into our bedroom and relaxed, watched a cute video of him, breathed deep, dropped my shoulders, drank some water and voila, milk! I pumped twice, once at 11am and once at 4 pm. Thanks for all the great advice you are awesome wahine. You've all kept me going.

Source Social Media in Government: Ministry of Health Case Study, Breastfeeding NZ on Facebook Government Information Services Department of Internal Affairs New Zealand, July 2012. Accessed on 16 July 2014: https://webtoolkit.govt.nz/files/Social-Media-in-Government-Case-Study-Ministry-of-Health-v1.0.pdf.

3.4 Twitter: Keep Citizens Informed

Twitter is a great way to keep citizens informed. Governments from around the world use Twitter to keep citizens informed by disseminating news and information almost in real time. Before getting started with Twitter, we need to understand some basic terminologies related to it.

3.4.1 What Is Twitter?

Twitter is an online micro-blogging service that enables users to send and read short messages commonly known as "tweets." A tweet is a text message limited to 140 characters.

3.4.2 Twitter Terminologies

Tweet
A Tweet is a 140-character message posted via Twitter. You can also include links and pictures in a Tweet. An example of a Tweet by NASA is shown in Fig. 3.4. For more information on Tweets, refer to the links provided below.

Retweet (TR)
A retweet is a re-posting of someone else's Tweet or message.

Direct Messages
Unlike a tweet, which is public and seen by everyone, a direct message is a personal Tweet (like email) seen only by the sender and the recipient. However, a direct message can only be sent to people following you.

Following
Following are the people who you follow over Twitter. On Twitter, following someone means that:

- You are subscribing to their Tweets as a follower (their tweets will appear on your Twitter main page).
- Their updates will appear in your Home tab.
- That person is able to send you direct messages.

Fig. 3.4 A Tweet by NASA

Followers

Followers are people who follow you over Twitter. If someone follows you it means that:

- They will show up in your followers list.
- They will see your Tweets in their home timeline whenever they log into Twitter.
- You can send them direct messages.

Mention

When another user includes your username preceded by the @ symbol in a Tweet, it is called a "mention." Your Mentions tab (on the Notifications page) collects Tweets that mention you by your username so you can keep track of conversations others are having with you. Mention is an indication of influence or popularity.

Hashtage (#)
The hashtag (# symbol) is used to mark keywords or topics in a Tweet. It is an easy way to categorize messages. Clicking on a hashtagged word in any message shows you all other Tweets marked with that keyword.

3.5 Configuring a Twitter Account for Official Use

Setting up Twitter is a very simple process. However, it should not be taken lightly, as the twitter channel will officially represent your organization, before proceeding to setup do a little bit of home. The following question may bring some clarification and focus to your Twitter efforts.

Review questions:

➢ What is the purpose of the twitter account? And is the purpose aligned with the agency goals?

■ Your social media strategy (discussed in Chap. 7) will determine the main purpose of using Twitter or any other social media platform.

➢ Who will be responsible to handle it?

■ Since it is not a one-shot business, once a social media presence is established it needs to be sustained and managed properly (more discussion on this is provided in Chap. 7).

➢ What should be your Twitter handler or username?

■ Be thoughtful while creating a handler, think of a name that truly sums up your organization.

➢ What information should be posted and what should not be posted?

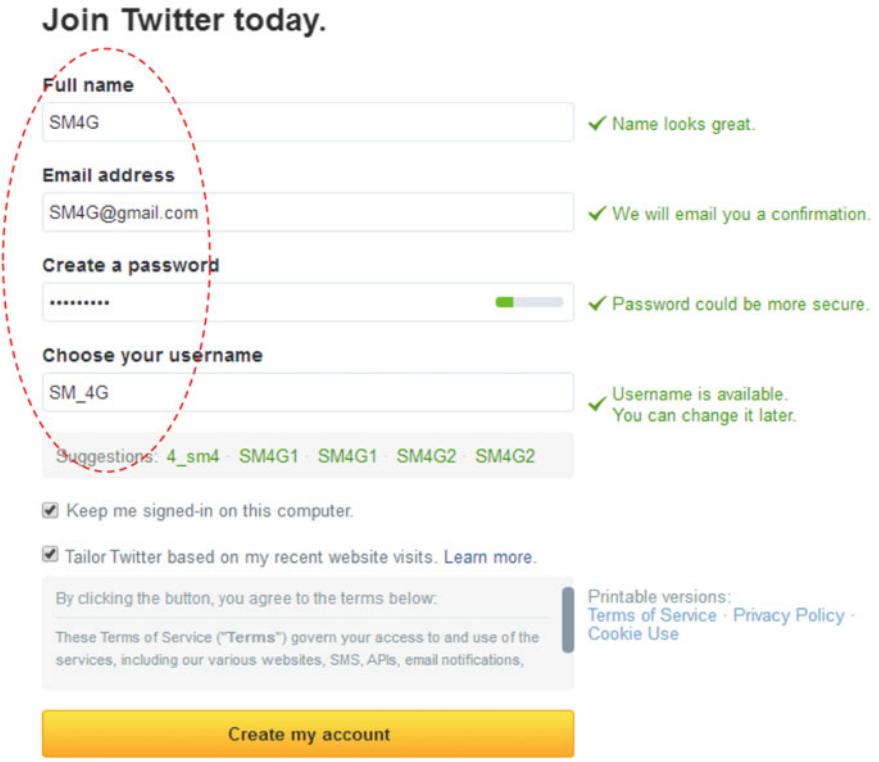
■ Your departmental information or communication policy may provide a useful place to start with.

➢ Do you have legal mandate to establish a twitter account?
➢ Do you have a plan to collect and analyze feedback generated over twitter?

■ In addition to its role as an information dissemination channel, Twitter can serve an excellent source of collection and analyzing public semantics and opinion. More information on this topic is provided in Chap. 6.

➢ How will you secure your account from online security risks?

■ Information on securing your social media accounts is provided in Chap. 8.



Screenshot 3.1 Twitter account creation

Below are step-by-step guidelines to set up an official Twitter page. Alternatively, you can watch this YouTube video on how to set up a Twitter account.

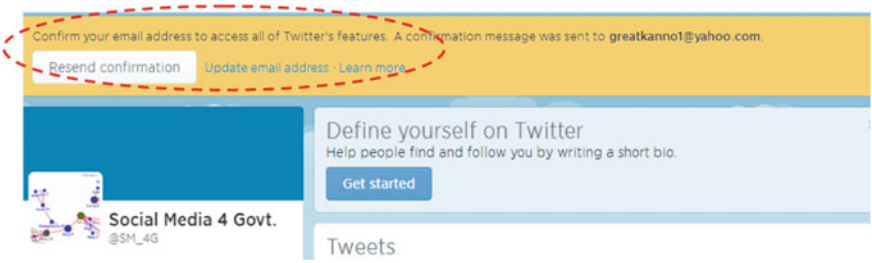
Step 1: You can either go to https://twitter.com/ and click the **Sign Up** button on the bottom right or go directly to https://twitter.com/signup to sign up.

Step 2: Fill in the first field with the name of your organization and provide your organization's email (this will be used to verify and activate your account) (Screenshot 3.1). In the password box provide a strong password. In the last field, provide your Twitter username (i.e., Twitter handler). For example, NASA use the term NASA as the handler.

Step 3: Click **Create My Account**.

Congratulations! Your account is created now.

Step 4: Click the **Next** button. Twitter will present you with a list of popular people to follow (optional, you can skip it). If you choose to follow the suggested people, their Tweets will start appearing on your timeline. Click **Next** to move on to the next step.



Screenshot 3.2 Email confirmation

Step 5: You will be given the option to follow people you know or search the Twitter users you are interested in using keywords. Click on the **Follow** button next to the Twitter user that you and your organization would like to follow (you must follow at least five people in order to continue to the next step, so chose the most relevant users and follow; a good practice is to follow the most influential users).

Step 6: Verify your Twitter account. At this stage your organization's Twitter account is created, but not verified yet (Screenshot 3.2). Open your email box and click on the verification link sent by Twitter.

Step 7: Upload your profile picture. Click on the empty profile photo to upload an image (logo) of your organization.

Step 8: Write a short bio. Click on the area below your profile photo. Write a short bio about your organization in 160 characters or fewer. It is useful to write your organization's mission statement here.

Step 9: Click on the **Edit Profile** button that appears at the bottom right of your profile on your Twitter home page (Screenshot 3.3). When you edit your profile, you can add more information about your organization in the following ways:

Screenshot 3.3 Editing Twitter account

- You can change your profile picture anytime.
- You can customize your header photo.
- You can update any information regarding your organization name, bio, website, and location.
- Click **Save Changes** when you have finished expanding or changing your profile.

Your profile page also indicates the following:

- The number of Tweets you have sent.
- The number of people/organizations that you follow, i.e., the followings.
- The number of people/organizations that follow you, i.e., the followers.

Tip: With Twitter, you want to continually increase the number of followers—i.e., citizens, organizations, and business listening to you—so that the tweets that you post will spread more quickly as more people read and retweet your posts. One way to increase the number of followers is to follow a lot of people/organization with similar interests to your organization, who in-turn may follow and inspire others to follow your organization.

3.6 Facebook Pages: Network with Citizens

3.6.1 What Is Facebook?

Founded in 2004 by Mark Zuckerberg, Facebook is an online social network service or site where users can create profiles, upload photos and video, send messages, and keep in touch with friends, family, and colleagues. As of May 2013, Facebook had more than 1.11 billion registered users. Apart from its primary function as an online social network site, Facebook has become an important marketing and outreach channel for all sorts of organizations including governments. Recently, in addition to its public version, Facebook announced to launch a business social networking site called 'Facebook at Work' which will allow business employees to network and collaborate.

3.6.2 Facebook Pages

How can public sector institutions take benefit of Facebook? The answer is Facebook pages or fan pages. Through fane pages governments can broadcast useful information and network with citizens in an official and public manner to people who choose to connect with them (for example, see case study 2).

Facebook fane pages are a great way to connect and network with citizens. Like Twitter account, it also serves as an official communication and networking channel. The questions raised in the previous section also apply here and should be reviewed before configuring a Facebook fan page.

Review questions:

- ➢ What is the purpose of the Facebook page? And is the purpose aligned with the agency goals?
- ➢ Who will be responsible to handle the Facebook (e.g., posting information, responding to comments and complains)?
- ➢ What should be your Facebook page name?
- ➢ What information should be posted and what should not be posted?
- ➢ Do you have legal mandate to establish an official Facebook page for your organization?
- ➢ Do you have a plan to collect and analyze feedback generated over Facebook page?
- ➢ What are your security measures from possible online risks?

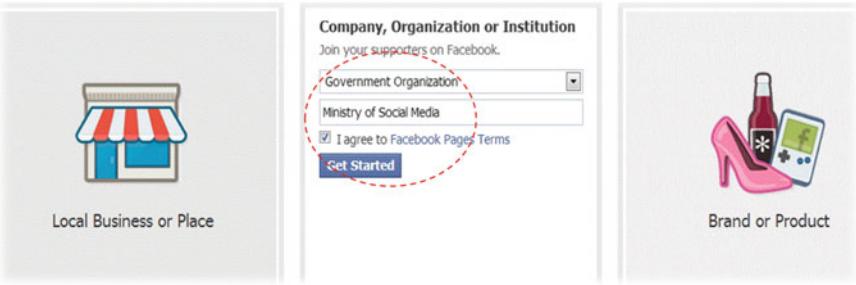
To create a Facebook page, you need to first sign up as a registered user. For this, you can use your organization's email address.

Creating a Facebook page for your organization

Step 1: To create a Facebook page, go to http://www.facebook.com/pages/create.php.

Step 2: Next, select the **Company, Organization or Institution** option (as shown in the Screenshot 3.4).

Step 3: Select the **Government Organization** option from the drop down box and write the name of your organization (e.g., Ministry of Social Media), check the **I Agree to Facebook Pages Terms**, and then click on the **Get Started** button.



Screenshot 3.4 Selecting and naming your organization

Screenshot 3.5 Facebook fan page admin panel

Step 4: In this step, you will provide the basic information about your organization. You should include a description, a website address, and write a unique Facebook web address (this will be used by users to find you on Facebook). Next, click the **Save Info** button.

Step 5: Upload a profile picture. You can upload the photo (e.g., logo) from your computer or a website. Choose a photo/logo that will represent your organization.

Step 6: Add to Favorites. Add the page to your favorites and click **Next**.

Step 7: Reach more people. You may choose to advertise your page on Facebook and select a payment method. Otherwise, click **Skip** to move on.

Step 8: Congratulations: Now your Facebook page is created. You will be brought to the **Admin Panel**. In the admin panel you can do the followings (Screenshot 3.5).

- Edit page. With this option you can update your page, manage permissions, add administrators to your page, manage notifications, use an activity log, and see a list of banned users.
- Build audience. With this option you can invite your email contacts, invite your Facebook friends, share the page, or create an advertisement for your page.

Step 9: Improving your page.[1] To improve your newly created page, you can do the following:

- First, like your page to build support.
- Post a message to give your fans more information. You can write a post in the comment box and then click on the **Post** button.
- Upload some photos of your organization. To do so click on the **Photos** button.
- Upload a cover photo that will appear at the top of your page. Click on the **Add a Cover** button on the right-hand and then click on **Upload Photo**.
- Invite your friends and fans. Here you can invite any existing friends on Facebook or important contacts from an address book to view your new Page.
- Link the page to your organization's website.

3.7 YouTube Channel: Keep Citizens Engaged

What is YouTube?

YouTube is a video-sharing website on which users can upload, view, and share videos. It was created in February 2005 and owned by Google since late 2006.

What is a YouTube channel?

YouTube channel is a public online space (or page) on YouTube. YouTube channel allows you to upload videos, leave comments, or make playlists. Governments from around the world use YouTube channel in a variety of ways. For example, it is a great way to educate citizens by uploading training materials, awareness videos, information about your services, or distribute political information outside traditional media outlets. Khan Academy is a great example of the effective use of educational videos on YouTube. YouTube has a dedicated page for governments which provides useful tips and guidelines on using YouTube (see Fig. 3.5).

Before configuring the YouTube Channel, the questions raised in the previous section should be reviewed and answered. Answers to most the questions should be rooted in the social media strategy of the department (social media strategy is discussed in Chap. 7).

[1] http://www.socialmediaexaminer.com/20-ways-to-promote-your-facebook-fan-page/ provides useful suggestions on ways to promote your Facebook fan page.

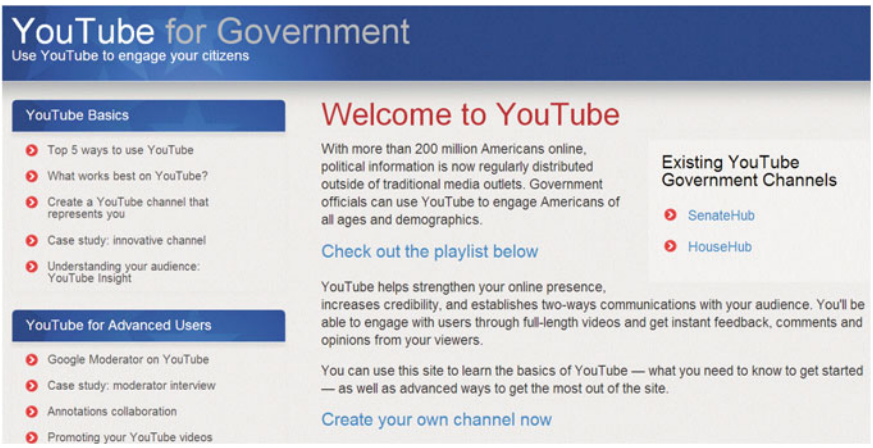


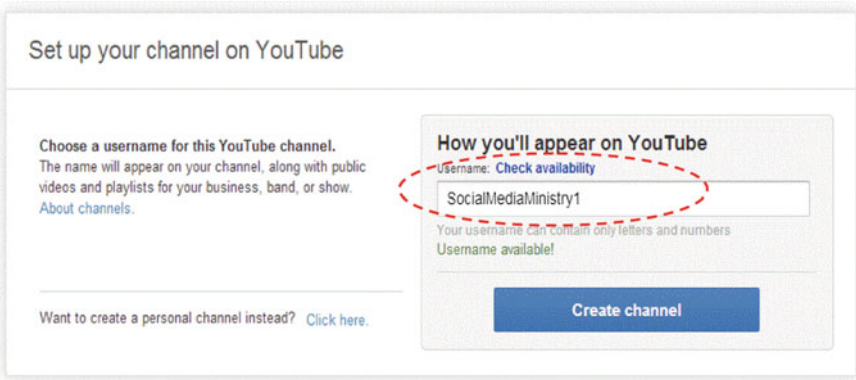
Fig. 3.5 YouTube for government

Review questions:

➢ What is the purpose of the YouTube page? (e.g., promote awareness, share useful content, provide training, etc.). And is the purpose aligned with the agency goals?
➢ Who will be responsible to handle the channel (e.g., creating and posting videos)?
➢ What should be the name of your Channel?
➢ What type of content should be posted and what should not be posted?
➢ Do you have a legal mandate to establish an official YouTube Channel for your organization?
➢ Do you have a plan to collect and analyze feedback generated over Channels?
➢ How will you secure your channel from possible online risks?

3.7.1 Creating a YouTube Channel for Your Organization

Step 1: Go to http://www.youtube.com and click on the **Sign-in** button, and then click on **Create an Account**.
Step 2: Provide the information as requested: name, email and password, etc. and then click **Next Step**. Once you click **Set Up** and all the information you provided is correct, your account will be created.
Step 3: To create a YouTube channel, click on **My Channel** located on the top right corner and then click **Create a Channel**.
Step 4: Since you want to create an organizational channel, click on the **To Use a Business or Other Name** option.



Screenshot 3.6 Naming your YouTube channel

Step 5: Choose a name for your channel (e.g., Social Media Ministry 1), check its availability, and then click the **Create Channel** button (Screenshot 3.6).
Step 6: Congratulations! Your channel is created.
Step 7: Customize your channel. Click on the **About** button to provide some meaningful information about the channel (e.g., organization description and website).
Step 8: Other things to do are as follows:

- Add a channel icon (i.e., logo or photo).
- Configure privacy settings (found in Account Settings).
- Configure connected accounts (found in Account Settings), so that when you post something on YouTube it will automatically be posted on other social media platforms (e.g., blog).

Tips: If you want to educate with YouTube, consider the following[2]:

- Ensure that your content is engaging.
- YouTube not only looks at the comments, likes, and shares, but also at how active people are when they watch your video and how long they watch it for. It is a crucial metric that YouTube looks at to help rank your video.
- If your education videos only include screen-capture content or slides, then you are at a higher risk of losing viewers. You need to combine a talking head along with slides and illustrations.

[2]Michael Stelzner, YouTube Success: How to Create a Successful YouTube Channel, Social Media Examiner, 23 August 2013. Available from http://www.socialmediaexaminer.com/how-to-create-a-successful-youtube-channel/.

3.8 Blogs: Talk and Listen to Citizens

3.8.1 What Is a Blog?

A blog (short for web log) is a type of personal website on which individual (or organization) post opinions and information. The information posted on a blog can be in the form of text, images, videos, and other multimedia contents. The person who keeps a blog is called a blogger, and the act of maintaining/updating a blog is called blogging. The most important feature of a blog is interactivity, i.e., the ability of readers to leave comments in response to a blog post.

3.8.2 Blog Pages Versus Posts

The individual entries or articles on a blog are called blog post. Posts are listed in reverse chronological order on the blog home page, whereas pages are static and are not listed by date. An 'About page' of a blog is the classic example. For more information visit http://en.support.wordpress.com/post-vs-page/.

3.8.3 Who Provides Blogging Platforms?

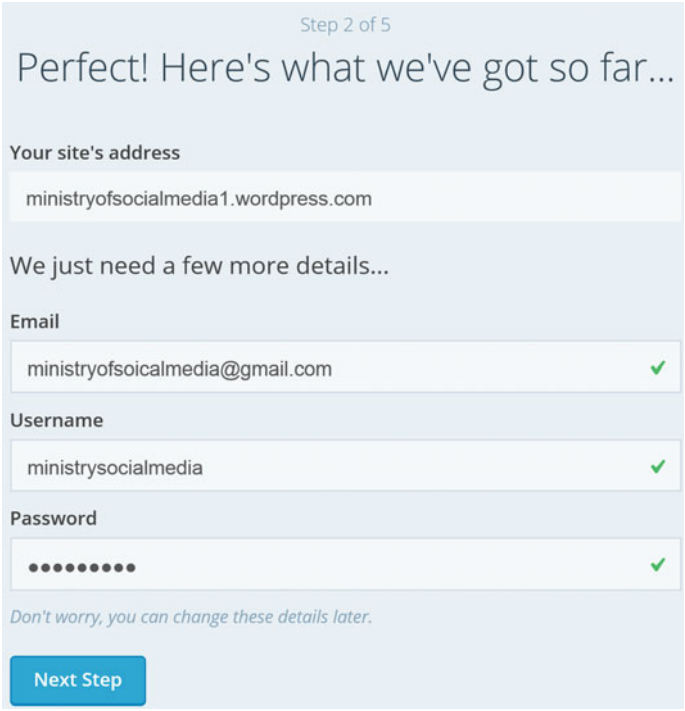
There are several companies that provide blog services. The most popular ones are http://www.wordpress.com and http://www.bloggers.com. This link provides a list of more than 40 free blog platforms. This guide will provide the steps for creating a blog on WordPress. On WordPress, you can easily build and manage a professional-looking blog without any technical know-how or programming skills.

3.8.4 Creating a Blog for Your Organization

As with the other platform, before creating a blog review the following questions.

3.8.4.1 Review questions

➢ What is the purpose of the blog? And is the purpose aligned with the agency goals?
➢ Who will be responsible to handle the blog (e.g., creating and posting content)?
➢ What should be the name of your blog?



Screenshot 3.7 Creating a blog

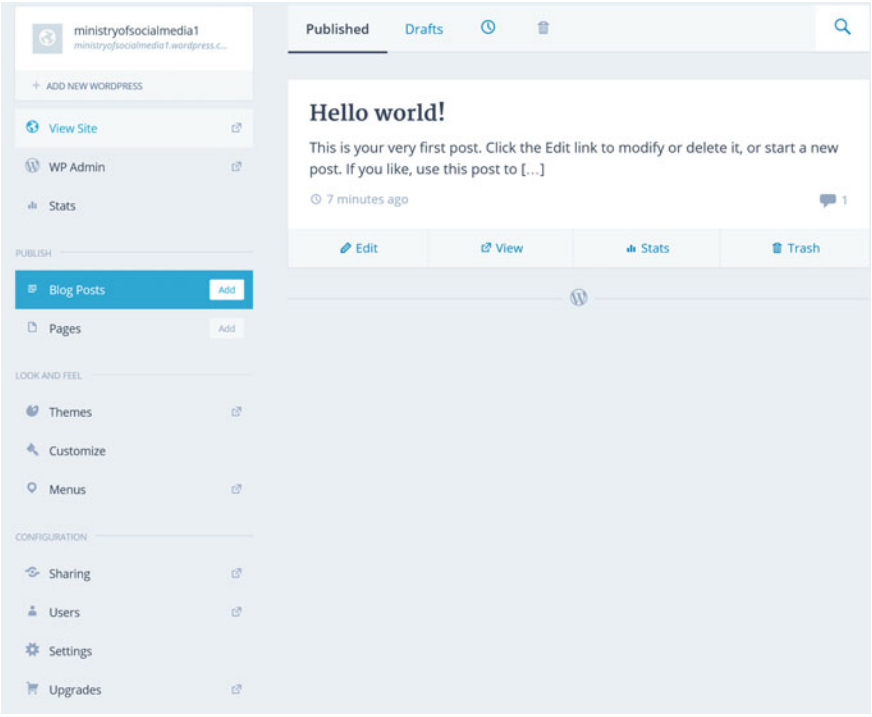
➢ What type of content should be posted and what should not be posted?
➢ Do you have a legal mandate to establish an official blog for your organization?
➢ Do you have a plan to collect and analyze feedback generated over the blog?
➢ How will you secure the blog?

Step 1: Go to the http://www.wordpress.com and click on the **create website** button to start the 5-step process.

Step 2: Next provide the requested information (Screenshot 3.7)—meaningful blog address, organization's email, username, a strong password, and click on the **Next Step** button.

Step 3: You will be presented with an option to buy a custom blog address (e.g., http://www.ministryofsocialmedia.gov). In this exercise, we chose the free option, i.e., http://ministryofsocialmedia.wordpress.com. However, in future, you can change to a custom blog address anytime. So, click **No thanks** option.

Step 4: Choose a theme for your blog from available options (you can always switch to a different theme later), and click **Next Step**.



Screenshot 3.8 Blog's site

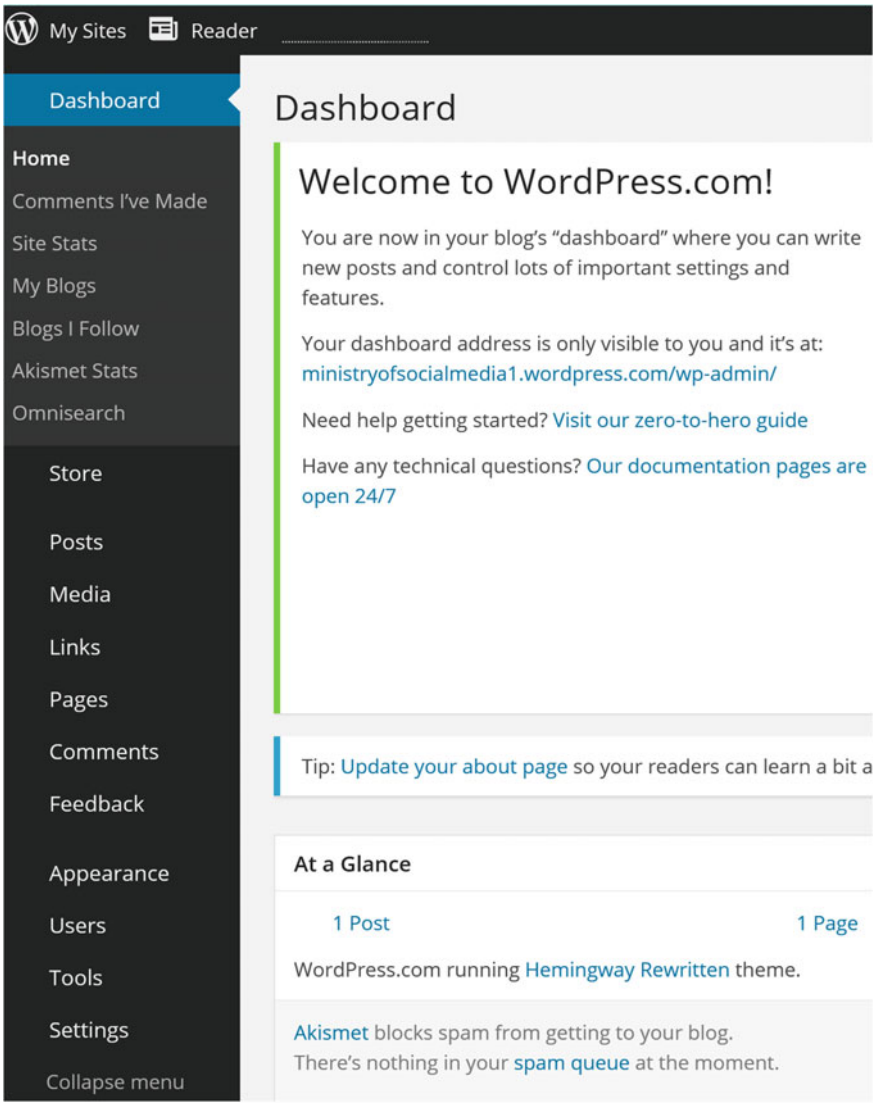
Step 5: In the final step you will be offered to choose a subscription plan. For now select the **binger plan** and click on the **Select Free** button. You can always switch to a paid plan later.

Now your blog is created and you will be brought to your blog's site (Screenshot 3.8) where you can view your blog, manage your using WordPress administration page (WP Admin), customize your blog, check the status of your blog, etc. You can always come back to your blog's site by clicking on the **My Site** option available at the top left corner of the window.

Configuring you blog

In its current stage, your blog has only one page and needs a lot of configurations.

Step 6: To start configuring your blog click on the **WP Admin** option. Clicking on **WP Admin** will bring you to the blog's dashboard (see Screenshot 3.9). Here you can carry out several administrative tasks, e.g., creating blog pages and blog posts, and designing blog layout. To return to your blog homepage, click on the name of your blog (e.g., in this case Ministry of Social Media) on the top left corner.

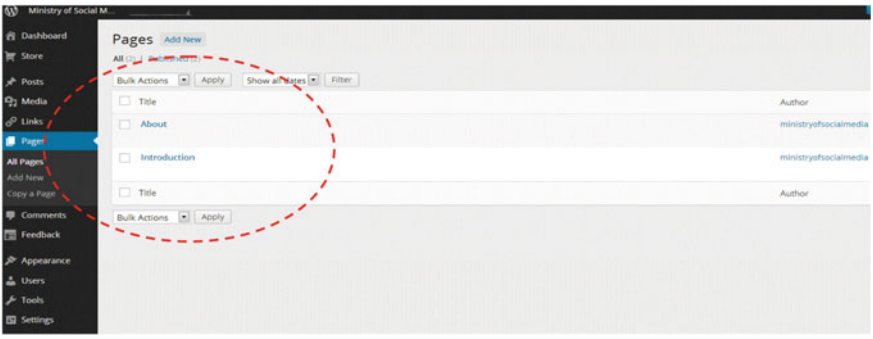


Screenshot 3.9 Blog dashboard

Creating blog pages

Step 1: To create your first blog page, click on the **Pages** option given at the center left of the dashboard and then click **Add New**.

Step 2: Next, you will be brought to the **Add New Page** window. Here, provide a meaningful name (e.g., Introduction) for the new page and write some description of the page (or content that you want to include in this page).



Screenshot 3.10 New page creation window

After you are done, click the **Publish** button available at the right middle corner (leave other options default).

Step 3: To see the new page you just created, click on **Pages** and then on the **All Pages** option available at the center left corner of the dashboard.

Step 4: Next, you will see the new page you have just created (i.e., Introduction) (Screenshot 3.10).

Note: By default, WordPress creates the **About** page for your blog.

Create more pages by clicking on the **Add New** option at the top left corner, next to the **Pages** option.

Configuring Menus

In order for your readers to find these pages easily, their titles need to appear on the navigation panel of your blog site. In this Reddle theme chosen, the navigation panel is at the top of the blog site. In other themes it may be on the left or right of the blog site.

Step 1: For the page titles to appear on your blog site, you need to configure the Menu option. To do so, click on **Appearance** and then click on the **Menus** option available at the bottom left corner.

Step 2: You will see that a menu (i.e., Menu1) is available to you by default. Enable this menu, and Click on the **Create Menu** button.

Step 3: Check the **Automatically add new top-level pages to this menu** and **Primary Menu** boxes available under the Menu Settings and then click the **Save Menu** button. After this, the title of any new pages created will be automatically added to your blog's navigation menu.

Step 4: To see your newly created blog and the menus (pages), hover your mouse over the **My site** option available at the top left corner then click on the **View site** option from the dropdown menu.

Step 5: This will bring you to your new blog. You can see that blog now has three menus (or page titles), one that you created (i.e., Introduction), and two created by Wordpress by default (i.e., Home and About). New blog posts will appear in the homepage and the other pages created will remain static. You can add as many pages as you want.

Creating blog posts

It times to go public and create our first official blog post.

Step 1: To create a blog post, you need to go back to the dashboard. You can do this by hovering your mouse over the **My Site** option available at the top left corner then click on the **WP Admin** option from the dropdown menu.
Step 2: Once in the dashboard, click on Posts and then click on the **New** option.
Step 3: Write a title and body of the post. You can include multimedia (e.g., pictures and videos) by clicking on the **Add Media** button. You may also include some tags at the right bottom (they will be used for searching purpose).

On the top right, there are the options to **Save Draft** and **Preview** the post to see what it will look like to readers. Once you are satisfied with the post, click on the **Publish** button available at right side. This will publish your post online and the post will be available over the Internet.

Note: Once the post is published online, you will still be able to edit and make changes to the post.

Step 4: As mentioned earlier, the post will now appear on your blog's homepage.

Customizing your blog

In its current form, your blog is in a very rough shape. To give it a more professional touch, you need to customize it. With customization, you can do the following:

- Manage themes (overall appearances).
- Manage logo and background image.
- Manage colors and fonts.
- Manage widgets.

Managing themes

Step 1: To change themes, go to the blog's dashboard, if you are already now there. You can do this by hovering your mouse over the **My Site** option available at the top left corner and then click on the **WP Admin** option from the dropdown menu.
Step 2: Once in the dashboard, click on **Appearance** available at the bottom left side and then click on **Themes** available at the top of the menu.

Step 3: In the Manage Themes window, on the top you can see your current active theme. You may choose a different theme from the available ones and click on the **Activate** option available below the theme. However, changing themes frequently may not be a good idea. It is recommended that you choose one theme that best represent your organization and stick to it. Also, some themes require payment.

Step 4: To customize your theme, click on the **Customize** button below your chosen theme. This will bring you to the customization window.

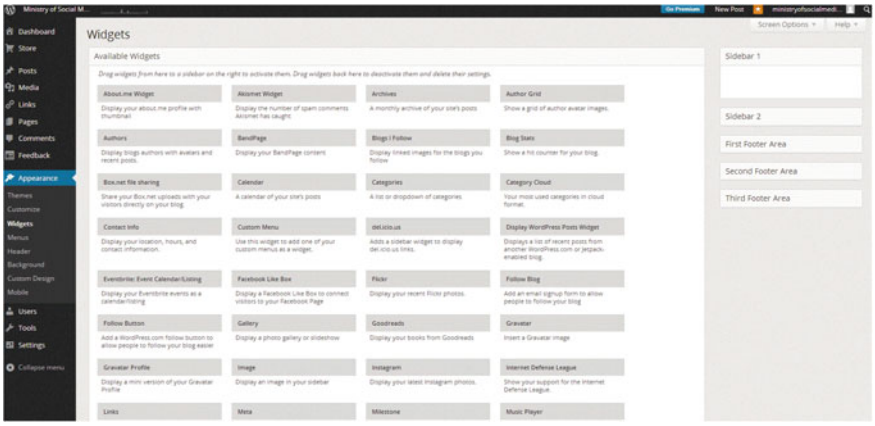
Step 5: In the customization window, you can manage colors, background (BG) image, menus, fonts, and site title. Make the necessary changes that you want and click on the **Save** button available at the bottom right corner.

Managing widgets

Widget is a small block of code that performs a specific function. A widget may contain some simple static content like a newsletter subscription form, introductory text and advertisement, or some dynamic content such as a list of recent tweets from your Twitter account, tag cloud, and calendar. Widgets can be placed in the nominated areas of your theme, which is mostly in the sidebar, but it can also be in other areas in your theme. The available widget areas that you have will vary from theme to theme. Most WordPress themes are widget ready and have multiple widget areas.

Step 1: To manage widgets, click on **Widgets** available in the Appearance menu.

Step 2: To add the available widgets to your blog, drag and drop it in the designated areas (i.e., Sidebar 1, Sidebar 2, First Footer Area, etc.) available on the right side of the window (see Screenshot 3.11).



Screenshot 3.11 Managing widgets

Step 3: In the example below, **Search**, **Calendar,** and **Category Cloud** widgets are added to Sidebar 1. And to Sidebar 2, the **Facebook Like** widget is added. Note that some widgets, such as the Facebook Like widget, require additional information (e.g., your Facebook page link) to work properly. Remember to click the **Save** button appearing below every widget.

Step 4: Go to your blog and check the newly added widgets (to go to your blog, click on the name of your blog appearing in the top left corner of the dashboard). In this Reddle theme, the newly added widgets appear on the right side of the blog.

Adding a header image

Step 1: Click on the **Header** option available in the Appearance menu. This will bring you to the Custom Header window.

Step 2: Click on the **Choose File** button and select a picture from your computer and click **Open**.

Step 3: Next, click **Upload**.

Step 4: If the picture is larger than the area click **Crop and Publish**, otherwise click on the **Skip Cropping, Publish Image As Is** option.

Step 5: Go to the blog and check the header image you just uploaded. It will appear on the top of the blog, below the name of the organization (to see your blog, click on the name of your blog on the top left corner of the dashboard).

Step 6: Go the blog's dashboard and click on the **Settings** option. Here you may configure several things (e.g., general, writing, reading, discussion, media, and sharing) according to your requirement.

Chapter 4
Enabling a Collaborative Government

Abstract The purpose of this chapter is to introduce a variety of ways to establish mass collaboration and crowdsourcing through social media channels. The chapter demonstrates the different ways social media tools can be leveraged to increase mass collaborations, particularly inter-agency collaboration. Practical guidelines on understanding, configuring, and managing a Google wiki and cloud-based tool are provided. After reading this chapter you will be able to: • Understand the basic concepts related to mass collaboration, crowdsourcing, and co-creation; • Understand, configure, and manage a wiki (e.g., Google wikis); • Understand, configure, and manage cloud-based tools (e.g., Dropbox).

Keywords Mass collaboration · Co-creation · Crowdsourcing · Mass collaboration tools · Google wiki · Dropbox

4.1 Mass Collaboration

In this book, mass collaboration refers to working together and independently in a many-to-many context to achieve certain shared goals carried through social media channels. The basic idea behind mass collaboration efforts is to tap into the collective intelligence or wisdom of crowds that emerges from collaborative efforts of masses working independently. The idea of collective intelligence itself is not new; it has been long established that "groups are remarkably intelligent, and are often smarter than the smartest people" (Surowiecki 2004). Though, due to social media the ease and scale at which we are able to tap into it is astounding. In fact, social media contents (e.g., Wikipedia, YouTube, Twitter, Facebook, and Flicker) are themselves the product of mass collaboration. Recall from Chap. 2, that the true potential of social media in public service delivery lies in establishing mass

G.F. Khan, *Social Media for Government*,
DOI 10.1007/978-981-10-2942-4_4

collaboration through social media channels carried out through citizen-sourcing and co-creation of services. Co-creation and crowdsourcing can be considered as mechanisms to carry out mass collaboration activities over the Internet. Though used interchangeably, both crowdsourcing and co-creation involve mass collaboration activities and are at the heart of innovative collaboration ecosystems. However, they can be differentiated slightly.

4.1.1 Crowdsourcing

Crowdsourcing is a mechanism of obtaining ideas, information, and content about services or product by soliciting and channeling contributions from a large group of people. Unlike co-creation (discussed below), crowdsourcing is mostly focused on generating, soliciting, refining, and ranking ideas from a large heterogeneous crowd. Web 2.0 and social media tools allow deliberation, organization, and collection of ideas from heaps of crowds a lot easier and cost effective. It can take both the form of offline and online crowdsourcing. Offline crowdsourcing has a long existing, for example, in 1714 the British government offered a monetary prize to whoever came up with a simple and practical method for the precise determination of a ship's longitude (O'Connor and Robertson 1997). However, in this book we only limit our discussion to crowdsourcing occurring online through social media channels. Crowdsourcing in the context of public sector is referred to as citizen-sourcing (Nam 2012).

4.1.2 Co-creation

Co-creation or co-production refers to the systematic mechanism of a product or service creation where a comparatively small group of consumers (i.e., ordinary citizens) with specialized set of skills engage with the producers (i.e., government) of products and services in their creation. In the co-creation mechanism a particular group of skilled consumer is repeatedly engaged throughout the lifecycle of the product (or service) from the inception of the idea (Youseph 2014; Williams et al. 2010). Co-creation of services through social media engages ordinary citizens in envisioning and co-designing future service ideas. Citizens are empowered, involved in the process, and their interests are aligned to create self-sustainable services (Selloni and Cantù 2014). Co-creation takes crowdsourcing a step ahead and calls experts in the crowd to innovate and create the products they have envisioned. For example, through crowdsourcing crowds are invited to contribute and rank innovative ideas and as a next step experts among the crowd are empowered to create the envision products/services.

4.2 Purpose of Mass Collaboration

Online mass collaboration (including both crowdsourcing and co-creation) can be seen as a new sustainable way of living where emerging social issues are solved through creative collaborative communities of masses. It has been successfully used to generate funds (e.g., through crowd funding platforms like kickstarter.com), create online encyclopedia (e.g., Wikipedia), test software (e.g., utest.com), and for crow voting (e.g., The Iowa Electronic Market (http://tippie.uiowa.edu/iem/) solicit and analyze crowds' opinion to predict political outcomes). Governments particularly employ citizens sourcing for the following purposes (Nam 2012).

✓ Information creation with citizens
✓ Service improvement with citizens
✓ Solution development with citizens
✓ Policymaking with citizens.

4.3 Benefits of Mass Collaboration

Mass collaboration activities have several potential benefits. Citizen-sourcing, for example, enhanced trust and engagement with citizens, improved citizen–government relationship, and faster policy implementation to minimize conflict between government and citizens. By involving citizens in deliberation the process from the beginning, government can easily garner legitimacy and political support to implement new services or polices. Studies have shown that citizens positively evaluate initiatives in which they are part of and policymakers consider their views (Tyler 2006).

4.4 Challenges of Mass Collaboration

While the benefits of mass collaboration are countless, it poses many challenges both from supply and demand side. Its supply side issues include data management, quality assessment and improvement, latency, scheduling, and cost optimization (Doan et al. 2011). From the supply side of crowdsourcing, it is difficult to find expert and loyal users to contribute to the initiative and maintain a reasonable level of quality, and privacy (Oomen and Aroyo 2011). Other potential challenges include.

➢ Lack of dedicated staff and resources for maintaining, update, and expanding the mass collaboration platforms.
➢ Accidental disclosure of confidential and private information.
➢ Lack of clearly crafted mechanism for public participation.

➢ Creating and sustaining public interest in the data.
➢ Low level of time commitment from top executives to posting blogs and responding to public comments.
➢ Creating and sustaining collaborative innovation ecosystem to create economic and social value from the mass collaboration.
➢ Lack of open data legal and political framework, laws, and policy (e.g., Freedom of Information/Right to Information/Access to Information Law).
➢ Lack of strong and sustained political leadership.

4.5 Dimensions of Mass Collaboration

When we talk about mass collaboration carried out though social media from a public sector perspective, it may take a variety of forms, including government working with government, government working with citizens, and citizens work with citizens to achieve certain shared goals (Fig. 4.1). Each dimension requires unique strategies to make it work and has its own associated supply and demand side challenges.

4.6 Enabling Mass Collaboration

Ideally, you social media strategy will determine what type of mass collaboration approach/tool is needed to achieve agency goals. Mass collaboration can be enabled using preexisting social media tools such as wikis or using purpose-built platforms. Below, we briefly examine some options.

Purpose-built platforms—purpose-built mass collaboration platforms are created to carry out crowdsourcing activities at a larger scale. Configuring a purpose-built platform is behind the scope of this book. However, depending on the scale, complexity, and availability of technical and financial resources, three options are available to create purpose-built platforms.

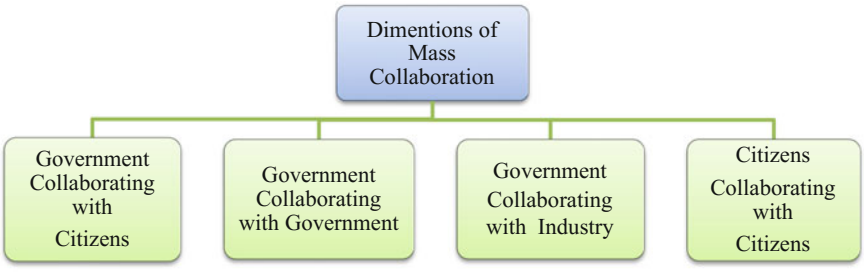


Fig. 4.1 Dimensions of mass collaboration

- **Open-source platforms**: open-source crowdsourcing platforms (such as, http://pybossa.com/ and http://www.ushahidi.com/) are great ways to enable mass collaboration activities. However, technical know-hows on setting up, designing, and running the platforms are required.
- **Proprietary platforms**: proprietary platforms (such as http://www.chaordix.com/platform/ and http://www.crowdfunder.co.uk/) provide the needed technology infrastructure and technical support with the cost of using the services. A potential drawback is the loose of control over your data.
- **In-house platforms**: if financial and technical resources permit, an ideal scenario will be building and managing an in-house mass collaboration platform.

Social media tools—an easy way to kick start your mass collaboration activities is through existing free social media tools such as Wiki (to carry out a collaborative knowledge sharing) and cloud-based services for collaborative sharing. These tools are best suited to establish within agency mass collaboration activities. However, the potential downside is security of and control over your data (e.g., your data will reside on the cloud), thus using these for nonsensitive data/issues is advisable.

4.7 Wiki: Collaborative Knowledge Sharing

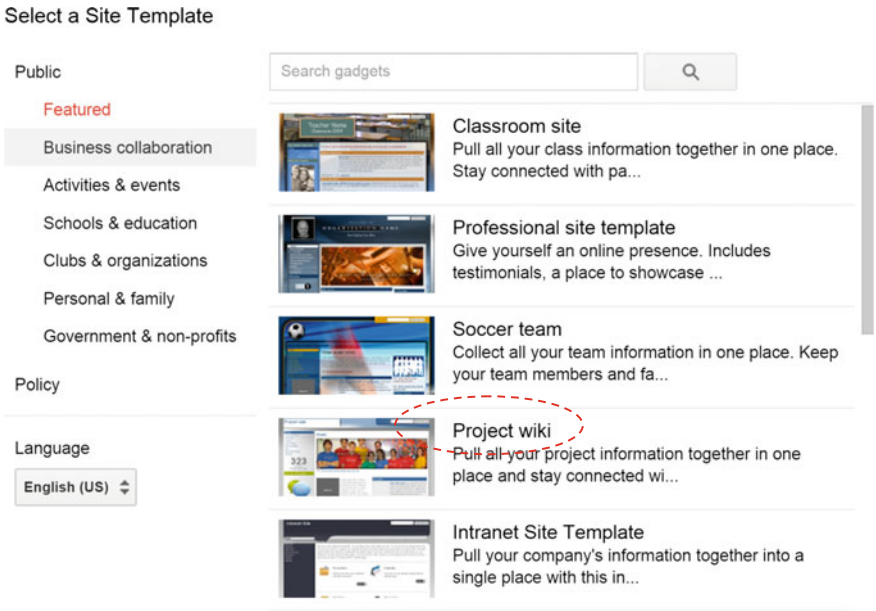
4.7.1 What Is a Wiki?

Wiki is a type of website created collaboratively by a community of users allowing them to add, modify, or delete content. Wikis are a great way to communicate and collaboratively work on projects with other people. A good example of collaborative wiki is http://www.wikipedia.com. Wikipedia has more than 30 million articles in 287 languages written collaboratively by volunteers around the world.

However, Wikipedia is just one type of a website built on the wiki model. There are several other notable wikis. This link lists several (https://en.wikipedia.org/wiki/List_of_wikis) websites that use the wiki concept/model. In this book, we will create a project wiki using Google Sites (http://www.sites.google.com/). The review question discussed in earlier chapters should be reviewed before configuring the wiki.

4.7.2 Setting up a Project Wiki

Step 1: You need to have a Google account to create a wiki with Google Sites. Go to the http://www.sites.google.com and login with your Google account.
Step 2: Once you login, click the **Create** button to start creating your own wiki.



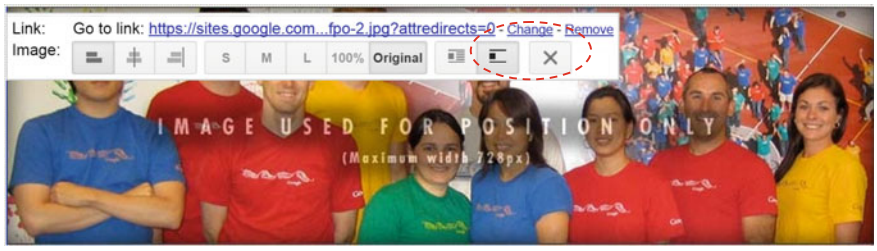
Screenshot 4.1 Select Google project wiki

Step 3: Google Sites has different templates that you can choose from for your wiki. To start creating your wiki, select **Project Wiki** and then click **Select** (if you cannot see the Project Wiki option then click on the **Browse the gallery for more** option) (Screenshot 4.1).
Step 4: Specify a name that best describes the purpose of your wiki (e.g., Social Media Project) and specify the site location (web address). Then click on **More Options** and write a meaningful description for your wiki. Finally, type the security code in the box provided and click the **Create** button at the top left of the window.
Step 5: After clicking on the **Create** button, your wiki will be created with some default settings. You can use the default wiki temple and customize it for your own collaborative projects. For example, you can add a project description and information about the teams. You can also add a time tracker, publish project updates, and upload project-related documents.

4.7.3 Customizing the Wiki

Step 1: Start by clicking the **Edit Page** button available at the top right corner (as shown in the Screenshot 4.2).
Step 2: The site editor lets you insert objects (e.g., pictures, links, table, charts, etc.) and customize the site layout, color, fonts, and theme.

Screenshot 4.2 Editing Google project wiki

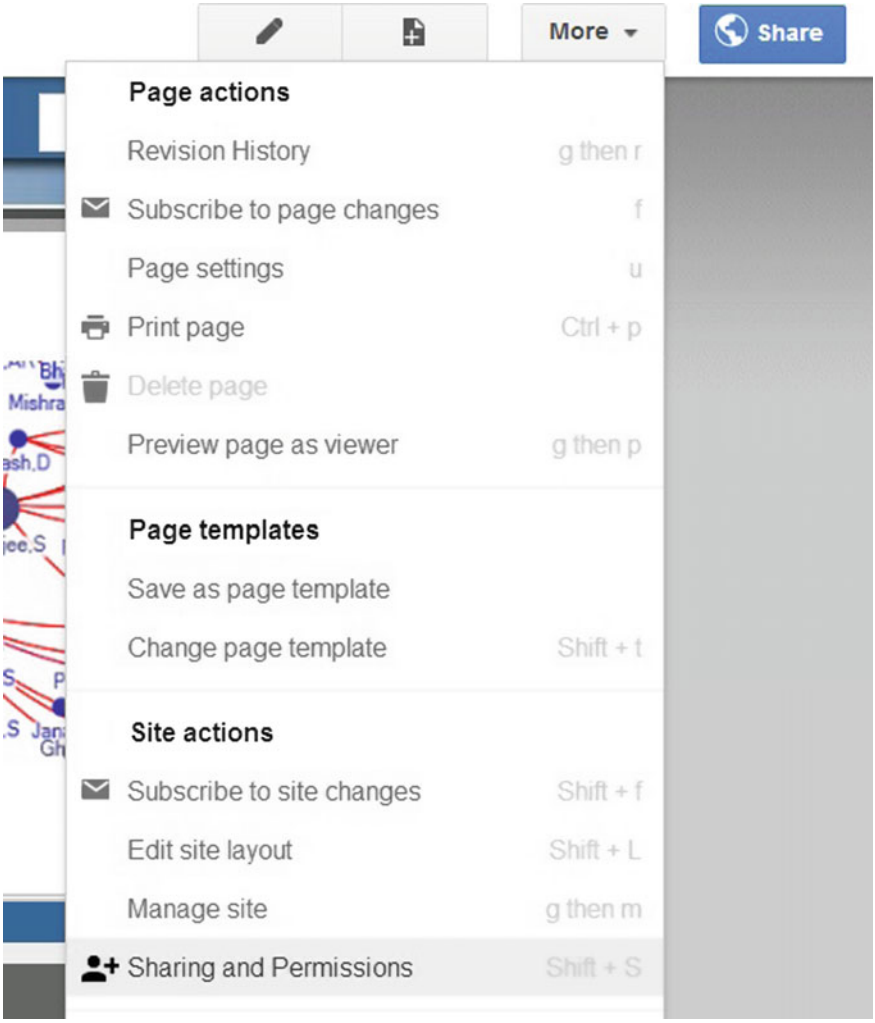


Screenshot 4.3 Changing header image in Google project wiki

Step 3: For example, to change the header image, first remove the default image by clicking the **X** button available above the picture as shown in the Screenshot 4.3 (**Note**: the **X** button will appear when you click on the picture).
Step 4: Once the default image is deleted, click the **Insert** menu and then click on the **Image** option.
Step 5: Next, click on the **Upload Images** button, select an image from your computer, click the **Open** button, and then click **OK**.
Step 6: Adjust the size of the image if necessary using the option available below the image, and then click the **Save** button available at upper right corner.

4.7.4 Adding Collaborators

Wikis are built for collaboration purposes. You can invite collaborators by using the following steps.



Screenshot 4.4 Adding collaborators to Google wikis

Step 1: Adding collaborators and members in the wiki is quite simple. Click on the **More** tab available at the top right corner, and then click on the **Sharing and Permissions** option from the drop-down menu (Screenshot 4.4).
Step 2: Next, enter the email address(es) of the collaborators who will contribute to the wiki. You can invite people to collaborate on your wiki by sending e-mail invitations. Also, specify the type of permission collaborators will have (e.g., can edit wiki).

Here, you can also change the visibility of your wiki (i.e., who has access). The default option is anyone on the Internet can find and view the wiki. If you want to keep the wiki hidden from the Internet, change the visibility to **Private**. Once you are done, click on the **Share & Save** button.

Adding a new page

Like a blog, a wiki can have many pages to present different aspects of the collaborative project. Follow the following steps to new pages to your wiki.

Step 1: Click on the **New Page** icon available at the top right corner of the wiki.
Step 2: Next, name your page, select a template to use (the default option is Web Page), and select a location for the page. Once you are done, click on the **Create** button.
Step 3: Now you can use the new page to add project-related pictures (for help on adding pictures see steps 9–11).

4.8 Cloud-Based Services

4.8.1 What Is Cloud-Based Service?

Cloud-based service or cloud computing is the concept of using the Internet servers to store, manage, and process data and applications (e.g., software, documents, audio, video, and multimedia), rather than a local personal computer. See this video (http://www.youtube.com/watch?v=QJncFirhjPg) for more information on cloud computing. Some of the important features of cloud computing are scalability (expand or shrink services as business needs change) and accessibility (anywhere and anytime access).

In this guide, we will configure and use Dropbox (https://www.dropbox.com/)—a cloud-based service used to store, manage, and process documents. Other services similar to Dropbox are SkyDrive (provided by Microsoft), and Google Drive (https://drive.google.com/).

What is Dropbox?

Dropbox is a free cloud-based file (e.g., photos, documents, and videos) storage service that lets you access and share your files from anywhere and anytime. It can be instrumental in collaborative projects that require transferring, accessing, and sharing files with users.

How Dropbox works?

Once you install Dropbox on your computer, it creates a new folder on your computer called **Dropbox**. Your Dropbox folder works just like any other folder on your hard drive, except everything in your Dropbox folder automatically syncs to the web and to any other computer and devices with Dropbox installed.

4.8.2 Configuring Dropbox

To get the most out of Dropbox, you need to install it on all of your computers and mobile devices. In this guide, we will install the standard Dropbox version with 2 GB free space. However, if you are interested in the paid business version, go to https://www.dropbox.com/business. The business version provides more space and security for paid subscription.

Step 1: Go to https://www.dropbox.com/install and click on the **Free Download** button.
Step 2: Click on the **Dropbox.exe** file that just downloaded in the bottom left corner of your browser window.
Step 3: Click on the **Run** button to get the installation process started.
Step 4: Click **Yes** to accept the User Account Control settings dialog.
Step 5: Next, click on the **Install** button and follow the instructions to get Dropbox set up on your computer.
Step 6: Once the installation is complete, a Dropbox icon will appear.

Chapter 5
Enabling an Open Government

Abstract In this chapter discuss open government, its components, types and principles of open data, and the benefits of open data. The components of open government discussed include government transparency and efficiency, collaborative innovation ecosystem, open data, open government policies and legal framework, open data technologies, open government readiness assessment. The chapter also discusses open government maturity model and step-by-step guidelines on opening your data using Google Fusion. A real-world case study of the Helsinki open data initiative is also included in this chapter.

Keywords Open government · Components of open government · Open data · Open government readiness assessment · Measuring open government · Fusion table

5.1 What Is Open Government?

The idea of the open government per se (i.e., government should be opened to public enquiry) dates back to the sixteenth century. However, the latest global open government movement can be attributed to the open government partnership (OGP) initiate of the Obama Administrations launched in 2011. OGP provides an international platform for government to be open, accountable, and responsive to citizens. At the heart of open government is the idea of openness—which refers to free unrestricted access to government structured data and information opened through social media and Web 2.0 channels. Currently, 68 countries are part of the OPG partnership working together with civil society to develop and implement aspiring open government reforms (OGP 2014).

G.F. Khan, *Social Media for Government*,
DOI 10.1007/978-981-10-2942-4_5

5.2 Components of Open Government

To comprehend it fully, let us look at the six major components of the open government (Fig. 5.1):

- Government transparency and efficiency
- Collaborative innovation ecosystem
- Open data
- Open government policies and legal framework
- Open data technologies
- Open government readiness assessment.

5.2.1 Government Transparency and Efficiency

The core idea behind open government/data is to make governments more transparent and open (Eggers 2005; Luna-Reyes and Chun 2012; Mergel 2010). In democratic society citizens need to know how their government is using tax payers' money. Open data lets citizens freely access government data and information and to share that information with other citizens. For example, the "where does my money go" (http://wheredoesmymoneygo.org/) initiatives lets British citizens track and analyze government public spending. Similarly, folketsting.dk helps citizens track the Danish parliament's activity and the law-making processes keeping them informed of what about the debates and parliamentarians are involved. The Helsinki

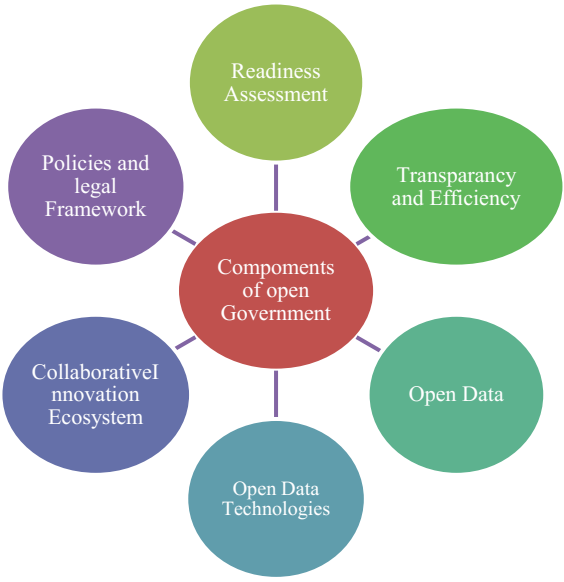


Fig. 5.1 Components of open government

city open government case study included in this chapter explains how open data can help residents to develop informed opinions about the city decision-making and make their contributions to the process. In addition to transparency, one of the potential benefits of open data is improved efficiency of government itself, for example, many question citizen have can be answered with open data, thus freeing up government resource and reducing work load.

5.2.2 Collaborative Innovation Ecosystems

In the contemporary society, data and information are vital resource for social and commercial activities. Open data creates a collaborative innovation ecosystems where societies create new business and services that deliver social and economic value. For example, using the government open data, a Denmark citizen built findtoilet.dk website which lists all the Danish public toilets, so that people can find it easily when they needed the most. Open data can be an important tool in contributing to enhanced citizen engagement, and affording better services to citizens. By providing the citizens' opportunities to provide feedback and ideas, governments can tap into collective wisdom of crowds. Government of India, for example, have launch an idea generation portals (www.mygov.nic.in) where citizens can discuss innovative ideas and earn credit points for it. Some governments have started to use data to experiment with games to change citizen behaviors. Nudge engines that change travel behaviors have been successfully tried out in Singapore (Sudan 2014). Working with Singapore's Land Transport Authority researchers from Stanford University and the National University of Singapore launched a Travel Smart Rewards program in January 2012. The program uses random rewards to encourage participants to shift their commute schedules on the Singapore rail system away from overcrowded peak times. The more commuters participate in Travel Smart Rewards, the more opportunities they have to receive random rewards. All these initiatives are examples of bits and pieces of collaborative ecosystem made possible by open government initiative.

5.2.3 Open Data

Open data is main pillar of the open government. To perform their tasks properly, governments collect vast amount of data in a variety of formats. However, despite its tremendous value the data is largely untapped and locked into the government databases and repositories. Recognizing the economic and social potential of the data, in response of Obama administration open data initiative, governments from around the world are opening untapped government data. The data is made available online to the public for reviewing and downloading (Table 5.1 provides some examples of open government data; a comprehensive list of open data initiatives is provided at the end of

Table 5.1 Open data examples

Country/city	Internet address
Algeria	http://algeria.opendataforafrica.org/
Aragón Autonomous Region, Spain	http://opendata.aragon.es/
Australian Government	http://data.gov.au
Brisbane City Council	http://data.brisbane.qld.gov.au/index.php/datasets/
City of Amsterdam Planning Dept.	http://www.gisdro.nl/open_geodata/
City of Buenos Aires, Argentina	http://data.buenosaires.gob.ar/
City of Milan, Italy	http://dati.comune.milano.it/
Democratic Republic of Congo	http://drcongo.opendataforafrica.org/
European Union	http://open-data.europa.eu/
France	http://www.data.gouv.fr/
Georgia	http://www.open.georgia.gov/
Germany	http://govdata.de
Ghana	http://ghana.opendataforafrica.org/
Greece	http://data.gov.gr/
Helsinki Region	http://www.hri.fi
Hong Kong Government	http://www.gov.hk/en/theme/psi
India	http://data.gov.in/
Italy	http://dati.gov.it
Kenya	http://www.opendata.go.ke
Kingdom of Bahrain	http://www.bahrain.bh/wps/portal/data/
New Zealand	http://cat.open.org.nz/category/dataset/
South Korean Government	https://www.data.go.kr
Taiwan	http://www.opendata.tw/
The United Kingdom	http://data.gov.uk/data
USA	https://www.data.gov/

chapter in Table 5.3). The http://datacatalogs.org/ and http://www.data.gov/open-gov/ also provides lists of the open dataset available from around the world. Open data can come in variety of formats and forms, including government reports, spending, and budget. Below we discuss some properties of open data.

5.2.4 Principles of Open Data

According to the World Bank (Bank 2014b), data is considered open; it is technically and legally open. The data is considered technically open if it can be retrieved and meaningfully processed by a computer application. Legally open data is that permits commercial and noncommercial use and reuse without restrictions. Government data is considered open if it complies with the following principles (Project 2014; Tauberer 2007).

Principle 1: **Complete**
The data is considered complete if all public data is made available. The data not subject to valid privacy, security, or privilege limitations is considered public.

Principle 2: **Primary**
Data is as collected directly from first-hand experiment or at the source. The data should be with the highest possible level of granularity, not in aggregate or modified forms.

Principle 3: **Timely**
Data is made available online as quickly as possible to preserve the value of the data.

Principle 4: **Accessible**
Data is available online to the widest practical range of users and uses and can be retrieved, downloaded, indexed, and searched.

Principle 5: **Machine ready**
Data is made available in a machine readable format (such as excel spread sheet, CSV files, and XML) that makes it easy to analysis and reuse. For instance, data displayed in PDF file or word processor document is easily understandable by human being, but not by computers.

Principle 6: **Nondiscriminatory**
Data is easily available to anyone without any requirement of registration or any other type of access restrictions.

Principle 7: **Nonproprietary**
Data is available in a format over which no entity has exclusive control. Proprietary formats add unnecessary restrictions on data use.

Principle 8: **License free**
The open data should be free from copyright, patent, trademark or trade secret regulation. However, certain privacy, security, and privilege restrictions may be applied to the data.

Principle 9: **Described**
Data should be described by detailing its strengths, weaknesses, limitations, security requirements, and instruction on how to process it.

5.2.5 Types of Open Data

There are many kinds of data that have potential uses and applications if opened. Some examples of data candidate for opening are provided below (Foundation 2012; Bank 2014a):

- **Cultural data**: the data about cultural works and artifacts (such as titles and authors) which is generally collected and held by galleries, libraries, archives, and museums.

- **Scientific data**: the data that is produced as part of scientific research in any field.
- **Financial data**: financial data related to government accounts such as budget, financial, and performance data.
- **Statistical data**: the data produced by government statistical offices such as the census and key socioeconomic indicators.
- **Metrological data**: the data about weather and climate.
- **Environmental data**: the data related to the natural environment such presence and level of pollutants, the quality of rivers and seas.
- **Transport data**: the data to transportation such as timetables, routes, on-time statistics.
- **Procurement data**: the data related to procurement actives (e.g., who was awarded what) and contract data (the documents and details of the deal).
- **GIS/Spatial data**: geographic information systems (GIS) and geospatial information such as maps, address registers, points of interest.
- **Real estate data**: for example data on sales, listings, taxes, and other property-specific data.
- **Crime data**: Crime data include for example the level of individual crimes and their locations.
- **Public facilities data**: Data on location and services available at the public facilities, such as schools, hospitals, police stations, public toilets, libraries, government offices.
- **Parliamentary data**: data on parliament activities including records of proceedings, laws under debate, and enacted version of legislation.

5.2.6 Open Government Policy and Legal Framework

A sound policy and legal framework is necessary for opening government data. Policies and laws on use of information such as freedom of information and right to information/access should exist or be enacted. More discussion on the policy and legal requirement is provided in the open government readiness section. As an example, at the end of the chapter, New York City law on open data is also provided.

5.2.7 Open Data Platforms and Technologies

Depending on your objectives, size, and nature of the data, two primary techniques to open data are downloadable or "Bulk data" and opening data through APIs (application user interface) (Tauberer 2014).

Bulk data—Bulk data method makes the data available in set of files downloadable at once directly from the hosting website (such as your agency or third-party website). Bulk method is best when data is static (i.e., does not change) and is not of large size. Bulk data is released once as a complete database and updated occasionally when needed.

APIs—APIs in its simplest form are protocols that allow computers, websites, and application talk to each other without needing our help. APIs are of different forms including private and hybrid APIs, but public APIs are the most functional one for opening your data. A public APIs provides a window into your data so that small portion it can queried by application when needed. APIs are good for opening dynamic (such as stock market or airline data). However, APIs can be used to open either type of data. The greatest benefit of opening data through APIs is that it allow entities (e.g., citizens, programmers and other organizations) from outside your agency to build apps, widgets, websites, and other tools based on your data. For example, when Portland Oregon opened up data on its public transportation system, someone developed an app called iNap. If a commuter falls asleep on a bus, the app wakes him/her up when they are near their stop. APIs requires technical know-hows and are hard to setup and maintain, your IT department will be able to handle the issue. The following links provide help on understanding and setting-up APIs.

- Project open data: https://project-open-data.cio.gov/
- Socrata Open Data API: http://www.socrata.com/products/open-data-api/
- OData: http://www.odata.org/
- CKAN: http://ckan.org/features-1/api/

Either employing APIs or bulk data approach, below we discuss some methods to open your data.

Existing agency website—smaller data size (say 100 or less datasets) can be open using your existing agency website in a bulk format. You just need to provide the datasets to your web master to make it available for download. A search functionality can be added to make the data searchable.

Open source platforms—a cost free and flexible way to open your data is the open sourced API-based platforms. The CKAN (http://ckan.org/) an open source platform, managed by the Open Knowledge Foundation, is used by government from around the world to open data including the U.K., Brazil, the Netherlands, Austria, and the US. Being open source CKAN can be freely downloaded and installed without any license fee. CKAN provides an easy to use interface with built-in APIs, integration with third-party content management systems, and data analytical abilities.

Bulk data platforms—The CKAN also provide the DataHub portal (http://datahub.io/) opening bulk data freely. The platform is currently hosting more than nine thousand data sets from around the world.

Paid third-party platforms—paid third-party open data platforms are an easy way to opening data. For example, http://www.junar.com/, a cloud-based open data

platform enables businesses, governments, NGOs, and academia to open their data. Third-party platforms are useful because they provide the needed technology infrastructure, technical support data, and data analytics abilities to track the impact of your data. However, some drawback includes loss of control on your data and the cost of using the services.

Social media tools—social media tools, such as Google Fusion Table, Wikis, and Blogs can be configured to open small scale public data. For example, using Fusion Table, the Web-Hacking Incident Database provides information on web applications-related security incidents using a wiki (http://projects.webappsec.org/w/page/13246995/Web-Hacking-Incident-Database#RealTimeStatistics). Similarly, Openvis (https://openviz.wordpress.com/) is WordPress-based open data blog. In this chapter, we use step-by-step guidelines to open your data with Google Fusion Table in a later section.

5.2.8 Open Government Readiness Assessment

The first step in enabling an open government initiative is to conduct an open government readiness assessment. The purpose of the assessment is to priorities actions by evaluating, designing, and implementing an open government initiative. The World Bank's "Open Data Readiness Assessment" (ODRA) (Bank 2014b) tool is a great place to start. The ODRA assessment can be carried out at the government level or the agency level and take into account institutional, political, legal, financial, technical, and social dimension of open government initiative. Detailed information on the assessment dimensions is available at the Word Bank Website: http://data.worldbank.org/about/open-government-data-toolkit/readiness-assessment-tool, here we briefly discuss the ODRA dimension.

Leadership—in order to minimize the resistance by actors from inside the agency a strong, sustained, and political leadership is therefore important to realize an open government initiative. For example, evidence of a strong commitment for openness and participation through open data from the leadership is crucial. Asking the following questions may provide some clues.

- Is there visible political leadership of Open Data/Open Government/Access to information?
- Is there an established political structure for policy and implementation of cross-government initiatives?
- Are there any existing political activities or plans relevant to Open Data?
- Does the wider political context of the country help or hinder Open Data?

Policy and legal framework—having a sound policy and regal framework (such as the existing laws or policies on reuse of public sector information and existing

Freedom of Information/Right to Information/Access to Information Law) is very crucial for the startup stage of the open government initiative. The following questions need to be asked.

- Is there any policy on Open Data or (re)use of public sector information?
- What are policies/laws on government secrecy and access to information?
- What policies/laws help or hinder the use of information by public and civil society?

Institutional structures, responsibilities, and skills within government—agencies should also possess or developed structures, procedures, and skills to manage the "supply side" of the open data initiative including processes for data management, skilled ICT staff capable of handing open data (e.g., formats, metadata, APIs, databases). Agencies also need to manage and develop "demand side" partnership by engaging with consumers of open data including citizens, developers, companies, nongovernmental organizations, and other agencies. Questions to ask are the following:

- Is there an agency or entity that has the mandate, project management experience, and technical skills to manage an Open Data portal?
- Do any agencies have a CIO, CTO, or permanent official positions dedicated to data management?
- Are there any inter-agency mechanisms to coordinate on ICT issues (such as for technical matters)?
- Is there an agency or ministry primarily responsible for data or statistics?

Data within government—at the core of the open government initiative is the digital data made available online. Paper data is hard to release is reusable. Thus, possessing data in digital format with comprehensive metadata and supporting documentation is crucial. More discussion on the open data is provided in a later section.

Demand for open data/citizen engagement—the open data is only valuable when it is used. To get out most social and economic value out of the open data, creating and having a strong demand for it is crucial. Only a strong demand can lead to innovative ecosystems where societies create new business and services that deliver social and economic value. A demand can be created, for example, by establishing a formal government policy on social citizen engagement policies and by empowering civil society champions for open data (such as http://www.gapminder.org/).

- What is the level and nature of demand for data from civil society and the media (e.g., the existence of open data champions and open data-based innovative business model)?
- What is the level and nature of demand for data from business/the private sector (e.g., the existence of businesses that use government data or try to deliver services despite access to it)?

- What is the extent of engagement with government through social media and other digital channels?
- What is the extent of intra- and inter-government demand for data?

Open data ecosystem approach—for a greater social and economic impact, alongside supplying data, governments should try to create an open data "ecosystem" where governments address the policy/legal framework for open data, institutional readiness, capacity building, citizen engagement, innovation financing, and technology infrastructure. In the "ecosystem" approach agencies create social and economic value by engaging civil society to get feedback, cocreate public services, crowdsourcing solutions and idea, and create new innovative business.

- Has government engaged in activities to promote reuse of government-held data (e.g., in developing apps or organizing cocreation events)?
- Is there an Apps Economy that already exists in your country/locality (e.g., has any business or individual developed any apps based on open data)?
- Is there an academic or research community that both trains people with technical skills and has people skilled at data analysis?

Financial considerations—like any other project, financial resources are need to enable the open government initiative. The financial resources are needed to fund both the "supply side" (e.g., development and maintenance of an open data portal, ICT skills training, application development, and the digitization of data) and the "demand side" (e.g., financing innovative projects, promote entrepreneurship, start-ups, and capacity building) of the open government initiative. The following question will assist you in determining financial resources.

- Have sufficient resources been identified to fund an initial phase of an open data initiative?
- Do any resources exist or have any been identified to fund development of initial apps and eServices that will use open data?
- Is sufficient funding available to support the necessary ICT infrastructure and ensure enough staff have the skills needed to manage an open data initiative?
- Does your government have any funding mechanisms for innovation?

National technology and skills infrastructure—this component of the readiness assessment looks into national ICT knowledge and skill infrastructure, for example, the availability of high speed internet access, government web presence, smartphone penetration, skilled developers and programmers, and open data standards, and data analytics skills.

- Is Internet access at sufficient levels and at low enough cost to support a robust open data ecosystem in your country/locality?
- Does government use shared infrastructure or shared services?
- How strong is the government's overall ICT skill base among senior government leaders and civil servants?

- How strong are the IT industry, developer community, and overall digital literacy in your country/locality?
- How active is the government's presence on the web?

5.3 Open Government Maturity Model

Enabling an open government is a complex set-by-step process. Lee and Kwak (2012)'s open government maturity model provides a good overview of the steps needed to enable an open government. Open government maturity model consists of five levels: initial conditions, data transparency, open participation, open collaboration, and ubiquitous engagement (Lee and Kwak 2012b). The models takes a structural approach and suggest that there is a logical sequence for increasing social media-based public engagement, and public agencies should focus on achieving one maturity level at a time. Following are the main concepts of each level.

Level 1—Initial Conditions: The main assumption of this stage is that governments cataloging and broadcasting information though a website and has no social media presence or open data capabilities. Only limited data is opened online mostly in bulk format and there is no two-way communication among government and public.

Level 2—Data Transparency: Level 2 is first step toward establishing an open government. Government starts to use social media (though limitedly) and start publishing and sharing government data online with the public. Only high-value and high-impact data is made available and limited feedback on data quality is from public is received.

Level 3—Open Participation: This level opens government to public idea and knowledge. Governments focus more on increasing citizens' participation in decision and policymaking through a variety of technologies including social media tools. A culture of transparency is emerging with data governance structure and process in place. Government strives to enhance data privacy, security issues, accuracy, consistency, and timeliness. Government use social media platforms (such as Facebook and Twitter) more persuasively to get feedback and respond to the online comments in a timely manner. And crowdsourcing is used to harness creative ideas.

Level 4—Open Collaboration: The next step is to foster open collaboration among government agencies, the public, and the private sector to cocreate value-added government services. Data analytic techniques are employed to get insight, measure open data initiative, and improve decision-making. Government leverage inter-agency collaboration to solve complex problems and open collaboration to solve complex problems. Collaborative technologies such as Wikis and Google docs are used.

Level 5—Ubiquitous Engagement: Finally, using the power of social media and other related technologies, government agencies establish a truly transparency, participation, and collaboration government. At this level, citizens' participation is made easy through social media technologies and effective governance structure and process. Scope and depth of open data is extended and data is made available on mobile devices.

5.4 Measuring Open Government

Metrics should be used to gage performance of your open government initiative. The metrics should be aligned with the agency open government strategy and goals (strategy is discussed in the Chap. 8). Table 5.2 lists some important metrics for measuring different dimension of open government (Lee and Kwak 2012). Some of the matrices can be captured employing the social media analytics tools introduced in the Chap. 6. Using these metrics governments can measure data transparency, collaboration, and participation dimension of the open government (Table 5.2).

Table 5.2 Metrics for measuring open government

Agency gaols	Example metrics
Data transparency	Number of data sets published Number of data downloads Number of total and unique visitors Data accuracy and consistency and timeliness Frequency of data updates Reduction in Freedom of Information Act requests Number of political activities or plans relevant to open data
Open participation	Number of visitors, fans, or followers Number of messages posted by the public Number of ideas submitted by the public Ratio of posts to comments Frequency of voting and polling Trends of public participation Innovativeness of ideas submitted
Open collaboration	Number of interagency collaboration Number of public–private collaborations Number of citizen–government collaborations Number and diversity of external partners Number of value-added services created Time and cost savings Quality and innovativeness of collaboration outcome Number of open data champions using open data Number of open data-based innovative business model created Number of open data-based apps created Number of academic or research community using open data Number of cocreated services

Table 5.3 A comprehensive list of open data initiatives from around the world

Country/city/region	Link
Aarhus	http://www.odaa.dk/
Alberta	http://data.alberta.ca/
Alkmaar	http://www.alkmaar.nl/opendata
Allerdale	http://datacatalogs.org/catalog/allerdale
Amsterdam OS	http://www.os.amsterdam.nl/
Angers	http://data.angers.fr/
Antwerp	http://opendata.antwerpen.be/
Aquitaine and Gironde	http://datalocale.fr/
Aragon	http://opendata.aragon.es/
Asturias	http://risp.asturias.es/catalogo/index.html
Australia	http://data.gov.au/
Australian Capital Territory	https://www.data.act.gov.au/
Austria	http://data.gv.at/
Baden-Württemberg	http://opendata.service-bw.de/Seiten/default.aspx
Baha Blanca	http://bahiablanca.opendata.junar.com/home/
Bahrain	http://www.bahrain.bh/wps/portal/data/
Balearic Islands	http://www.caib.es/caibdatafront/
Barcelona	http://w20.bcn.cat/opendata/
Bari	http://opendata.comune.bari.it/
Belgium	http://data.gov.be/
Berlin	http://daten.berlin.de/
Birmingham	http://www.birmingham.gov.uk/open-data
Bologna	http://dati.comune.bologna.it/
Brazil	http://dados.gov.br/
Brazilian Federal Senate	http://dadosabertos.senado.gov.br/
Bremen	http://www.daten.bremen.de/
Brisbane	http://data.brisbane.qld.gov.au/index.php/datasets/
British Columbia	http://www.data.gov.bc.ca/
British Columbia Local Government	http://www.civicinfo.bc.ca/
Buenos Aires Argentina	http://data.buenosaires.gob.ar/
Burlington	http://cms.burlington.ca/Page7429.aspx
Canada	http://www.data.gc.ca/default.asp
Castilla-La Mancha	http://opendata.jccm.es/
Catalonya	http://dadesobertes.gencat.cat/
Chamber of Deputies	http://dati.camera.it/it/
Chile	http://datos.gob.cl/
China	http://govinfo.nlc.gov.cn/
Costa Rica	http://datosabiertos.gob.go.cr
CSIRO	https://data.csiro.au/dap/home?execution=e1s1

(continued)

Table 5.3 (continued)

Country/city/region	Link
Dailan	http://zwgk.dl.gov.cn/default.jse
Denmark	http://digitaliser.dk/
District of North Vancouver	http://geoweb.dnv.org/data/
Edmonton	http://data.edmonton.ca/
Emilia-Romagna Open Data	http://dati.emilia-romagna.it/
Enschede	http://opendata.enschede.nl/
Environmental Portal	http://www.portalu.de/portal/default-page.psml
Estonia	http://pub.stat.ee/px-web.2001/Dialog/statfile1.asp
Euskadi (Basque Country)	http://opendata.euskadi.net/
Fingal	http://data.fingal.ie/
Finland	http://www.suomi.fi/suomifi/tyohuone/yhteiset_palvelut/avoin_data/
Florence	http://dati.comune.firenze.it/
France	http://data.gouv.fr/
Fredericton	http://www.fredericton.ca/en/citygovernment/DataMain.asp
Galicia	http://abertos.xunta.es/portada/
Germany	https://www.govdata.de/
Ghana	http://data.gov.gh
Graz	http://data.graz.gv.at/
Great Manchester	http://www.datagm.org.uk/
Greece	http://geodata.gov.gr/geodata/
Guelph	http://guelph.ca/services.cfm?itemid=78870&smocid=1550
Halifax	https://www.halifaxopendata.ca/
Hamburg	http://daten.hamburg.de/
Hamilton	http://www.hamilton.ca/ProjectsInitiatives/OpenData/
Hauts-de-Seine	http://opendata.hauts-de-seine.net/
Helsinki Region Infoshare	http://www.hri.fi/en/about/open-data/
Hong Kong	http://www.gov.hk/en/theme/psi/datasets/
India	http://data.gov.in/
Indonesia	http://satupemerintah.net/
Ireland	http://www.statcentral.ie/
Italian Parliament	http://dati.camera.it/it/
Italy	http://www.dati.gov.it/
Italy Senate	http://dati.senato.it/
Japan	http://www.data.go.jp/
Junta de Castilla y León	http://www.datosabiertos.jcyl.es/
Jyvskyl	http://data.jyvaskyla.fi/
Kent	http://www.kent.gov.uk/your_council/open_data.aspx
Kenya	http://opendata.go.ke/

(continued)

Table 5.3 (continued)

Country/city/region	Link
La Rochelle	http://www.opendata.larochelle.fr/
Leipzig	http://www.apileipzig.de/
Lichfield	http://lichfielddc.gov.uk/
Lima	http://www.munlima.gob.pe/datos-abiertos-mml.html
Linz	http://data.linz.gv.at/
Lleida	http://cartolleida.paeria.es/lleidaoberta/inici.aspx
Loire-Atlantique	http://data.loire-atlantique.fr/
Lombardy	https://dati.lombardia.it/
London	http://www.london.ca/d.aspx?s=/Open_Data/Data_Catalogue.htm
Lucca	http://opendata.provincia.lucca.it/
Manchester	http://www.manchester.gov.uk/info/500215/open_data
Medicine Hat	http://data.medicinehat.ca/
Merton Council	http://www.merton.gov.uk/council/dp-foi/opendata.htm
METI	http://datameti.go.jp/
Mexico	http://datos.gob.mx/
Milan	http://dati.comune.milano.it/
Ministry of Finances	http://www1.minfin.ru/ru/
Moers	http://www.offenedaten.moers.de/
Moldova	http://data.gov.md/
Montpellier	http://opendata.montpelliernumerique.fr/
Montreal	http://donnees.ville.montreal.qc.ca/
Morocco	http://data.gov.ma/
Moscow	http://data.mos.ru/
Mosman Council	http://data.mosman.nsw.gov.au/
Nanaimo	http://www.nanaimo.ca/datafeeds
Nantes	http://data.nantes.fr/
Navarre	http://www.navarra.es/home_es/Open-Data/
Netherlands	http://data.overheid.nl/
New South Wales	http://data.nsw.gov.au/
New Zealand	http://www.data.govt.nz/
Niagara Falls	http://www.niagarafalls.ca/services/open/data
Niagara Region	http://www.niagararegion.ca/government/opendata/default.aspx
Niedersterreich	http://www.ncopenbook.gov/NCOpenBook/
North Okanagan	http://www.rdno.ca/index.php/maps/digital-data
Norway	http://data.norge.no/
Novo Hamburgo	https://dados.novohamburgo.rs.gov.br//
Oman	http://www.oman.om/opendata
Open Government	http://opendata.bigovernment.ru/results/

(continued)

Table 5.3 (continued)

Country/city/region	Link
Open Kent	http://www.openkent.org.uk/
OpenAid.se	http://openaid.se/
Pamplona	http://pamplona.es/verPagina.asp?IdPag=1519&Idioma=1
Paris	http://opendata.paris.fr/opendata/jsp/site/Portal.jsp
Peru	http://www.datosperu.org/
Philippines	http://data.gov.ph/
Piedmont	http://www.dati.piemonte.it/
Portugal	http://www.dados.gov.pt/pt/inicio/inicio.aspx
Prince George	http://princegeorge.ca/cityservices/online/odc/Pages/Documents.aspx
Puglia	http://www.dati.puglia.it/
Qubec (City)	http://donnees.ville.quebec.qc.ca/
Qubec (Province)	http://data.gouv.qc.ca/?node=/accueil
Queensland	https://data.qld.gov.au/
Redbridge	http://data.redbridge.gov.uk/
Regina	http://openregina.cloudapp.net/
Region of Peel	http://opendata.peelregion.ca/
Rennes	http://www.data.rennes-metropole.fr/
Republic of Korea	http://www.data.go.kr/
Research Data	http://researchdata.ands.org.au/
Rheinland Pfalz	http://www.daten.rlp.de/
Rome (Province)	http://www.opendata.provincia.roma.it/
Rostock	http://datacatalogs.org/catalog/rostock
Rotterdam	http://rotterdamopendata.nl
Russia	http://opengovdata.ru/
Russian Open Police	http://data.openpolice.ru/
Saanich	http://www.saanich.ca/data/catalogue/index.php
Salford City Council	http://www.salford.gov.uk/opendata.htm
Sao Paulo	http://www.governoaberto.sp.gov.br/view/
Sane-et-Loire	http://www.opendata71.fr/
Sardinia	http://www.sardegnageoportale.it/index.html
Seoul	http://data.seoul.go.kr/
Singapore	http://data.gov.sg/
Slovak Republic	http://data.gov.sk/
South Australia	http://data.sa.gov.au
Spain	http://datos.gob.es/
Stockholm	http://open.stockholm.se/
Surrey	http://www.surrey.ca/city-services/658.aspx
Sutton	https://www.sutton.gov.uk/index.aspx?articleid=15338
Sweden	http://xn–ppnadata-m4a.se/

(continued)

Table 5.3 (continued)

Country/city/region	Link
Taiwan	http://data.gov.tw/
Tampere	http://tampere.fi/avoindata
Terrassa	http://opendata.terrassa.cat/
Timor-Leste	http://www.transparency.gov.tl/
Toronto	http://www.toronto.ca/open
Toulouse	http://data.grandtoulouse.fr/
Trafford Council	http://www.trafford.gov.uk/opendata/
Trentino	http://dati.trentino.it/
Tunisia	http://www.opendata.tn/
Turin	http://www.comune.torino.it/aperto
Tuscany	http://dati.toscana.it/
Tyrol	http://www.tirol.gv.at/applikationen/e-government/data/
UAE	http://www.government.ae/web/guest/uae-data
United Kingdom	http://data.gov.uk/
United Nations	http://data.un.org/
Uruguay	http://datos.gub.uy/
Vancouver	http://data.vancouver.ca/
Veneto	http://dati.veneto.it/
Venice	http://dati.venezia.it/
Victoria	http://www.data.vic.gov.au/
Vienna	http://data.wien.gv.at/
Vorarlberg	http://data.vorarlberg.gv.at/
Waterloo	http://opendata.waterloo.ca/
Windsor	http://www.citywindsor.ca/opendata/pages/open-data-catalogue.aspx
World Bank	http://data.worldbank.org/
Wyre Council	http://www.wyre.gov.uk/opendata
Zaragoza	http://www.zaragoza.es/ciudad/risp/
Zurich	http://data.stadt-zuerich.ch/content/portal/de/index/ogd/daten.html

5.5 Challenges of Open Government

Open government initiative faces several challenges, including the following (Bank 2014b; Lee and Kwak 2012a).

- ➢ Data accuracy, quality, and timeliness
- ➢ Lack of dedicated staff and resources for maintaining, update, and expanding the open data
- ➢ Lack of flexibility in data format
- ➢ Accidental disclosure of confidential and private information

- ➢ Lack of clearly crafted mechanism for public participation
- ➢ Creating and sustaining public interest in the data
- ➢ Low level of time commitment from top executives to posting blogs and responding to public comments
- ➢ Lack of applications developers and ICT skills in society
- ➢ Creating and sustaining collaborative innovation ecosystem to create economic and social value from the open data
- ➢ Lack of open data legal and political framework, laws, and policy (e.g., Freedom of Information/Right to Information/Access to Information Law);
- ➢ Lack of strong and sustained political leadership
- ➢ Lack of skills to development and maintenance an open data portal
- ➢ Lack of digital data, for example, most data in the developing countries still in paper format.

5.6 Opening Your Data with Google Fusion Table

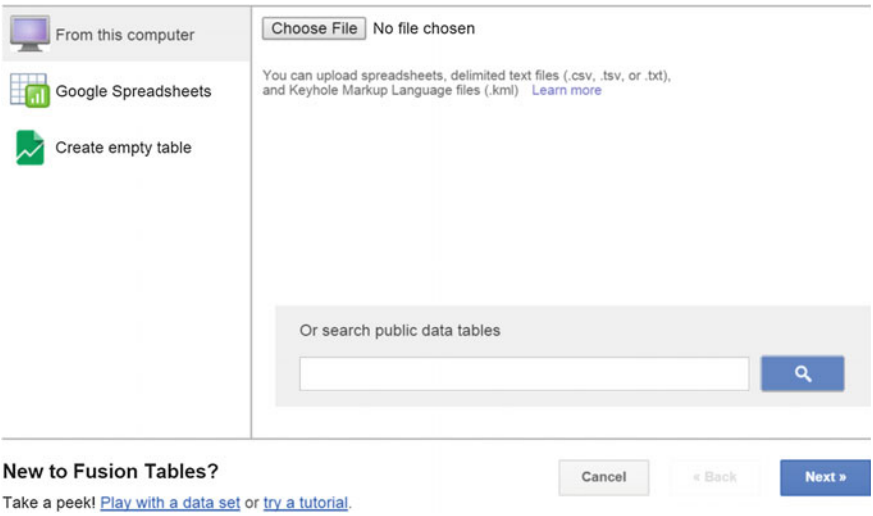
Google Fusion Tables (still in experimental stage) is a web service to store, share, query, and visualize table data. Table data can be visualizing shared in a variety of ways including chart, map, network graph, geographical maps, or custom layout. California Sate, for example, opened government datasets using Fusion Tables (http://data.ca.gov/category/by-data-format/fusion-tables/) where the data can be viewed, filter, and download by citizens. The data formats supported by Fusion Table include spreadsheets, CSV files, and Keyhole Markup Language (KML) (KML is a file format used to display and map geographic data). Google also provide Fusion Tables API (https://developers.google.com/fusiontables/) for managing data programmatically. This links https://sites.google.com/site/fusiontablestalks/stories provides an example library of Fusion Table. Next, we will learn how to configure Fusion Table to share your open data online.

5.6.1 Getting Start with Fusion Table

Step 1: Go to the https://www.google.com/fusiontables/ and click on the **Create a Fusion Table** button. For this exercise, we will use Victoria's location of police stations data download from http://data.gov.au/dataset/police-station-locations in the KML format.

Step 2: Next, you will be asked to upload your data into the Fusion Table (Screenshot 5.1). To do so you have the following four option:

1. From this computer
2. From Google Spreadsheets
3. Create an empty table (for manipulating data later), or
4. Search other online publically available data.



Screenshot 5.1 Uploading data to Google Fusion Table

In this exercise, we choose the "**from this computer**" and click **Browse File** to upload the data. Locate the data you want to open and click the **Next** button.

Step 3: Next, choose the format (i.e., comma separated, tab, colon, or other type) of data being uploaded (in this case KML). Leave the other option to the default settings and click the **Next button**.

Step 4: After the data is loaded, make sure that right row is selected for the column names (which is normally row 1) and click **Next** (Screenshot 5.2).

Step 5: Once the data is imported, provide the following details and click **Finish** (Screenshot 5.3).

Table—provide a meaningful table name,

Allow export—if you check this, other users will be able to export your data into csv,

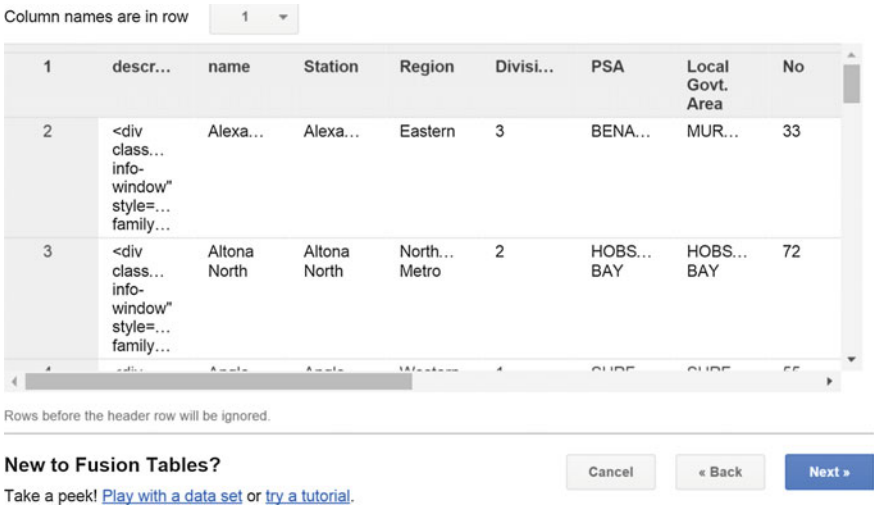
Attribute data to—here write a message that will be displayed when people view or use your data

Attribution page link—provide the attribution page URL or link, if any,

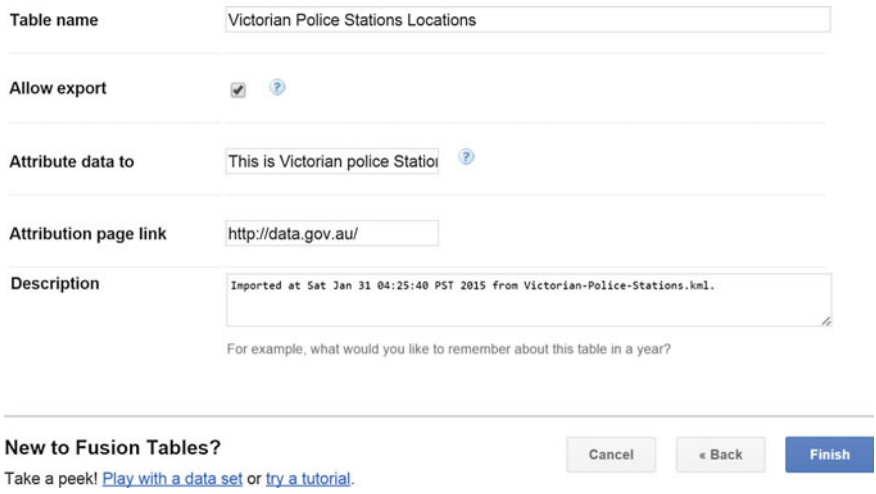
Description—provide a meaningful description here that may help you remember what the data is about.

Step 6: Now your data is uploaded into the Fusion Table and you are ready to process, visualize, and share it (Screenshot 5.4).

Step 7: **Visualizing your data**: Fusion Tables auto-detects location data and displays a tab called "Map of <location column name>." In this case, the Map tab is titled "Map of geometry." Click on the "map of geometry" to see geo map of the police stations (Screenshot 5.5).



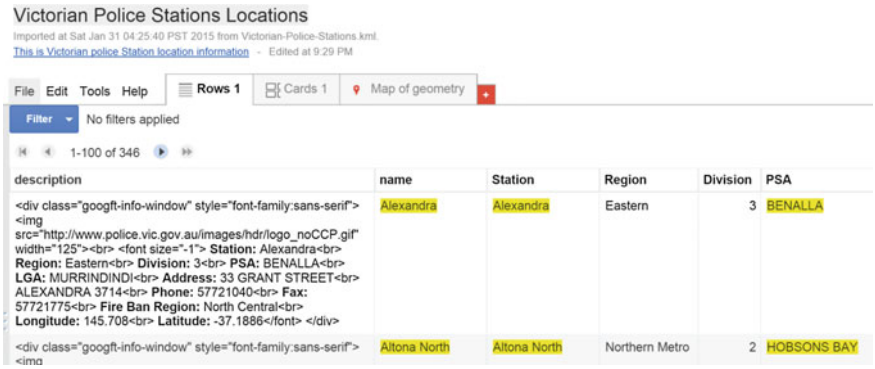
Screenshot 5.2 Choosing the variables row



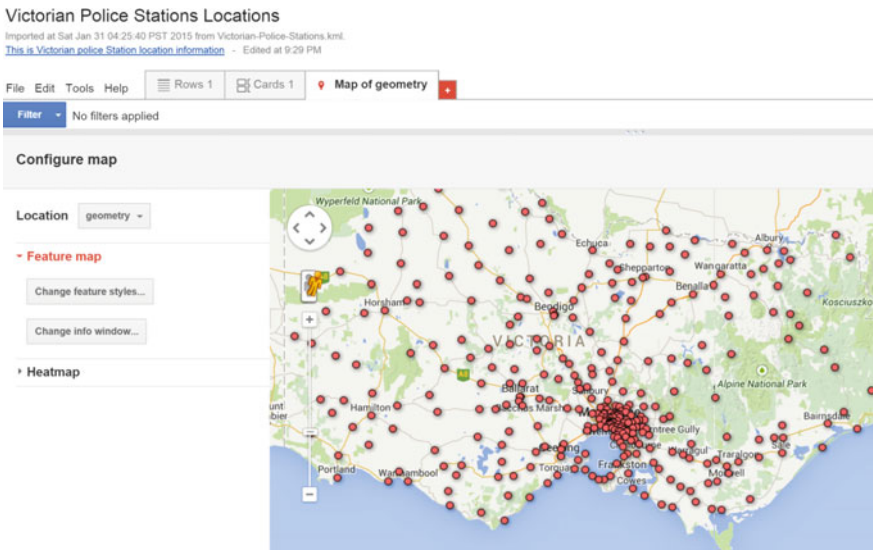
Screenshot 5.3 Describe your data

If the Fusion Table does not automatically detect location information, then you need to tell you need to configure it manually through the following steps:

1. Click on the **Rows** tab and find the column name that has the location data and click on the downward pointing arrow.
2. Next, click on **Change**.



Screenshot 5.4 Data uploaded into the Fusion Table

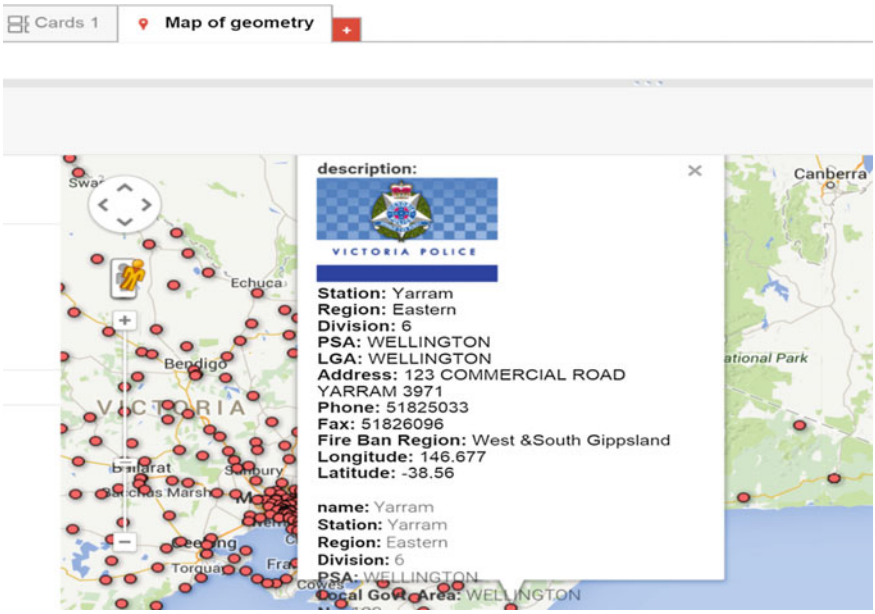


Screenshot 5.5 Geo map of the police stations

3. Once on the page that opens up, choose "**Location**" for the type and then click on the **Save** button.

Step 8: Next, double click on a red place-mark to view more information about a police station (Screenshot 5.6).

Customizing your map—once you have created a map you can customize different aspects of it, including creating and customizing charts, creating custom cards, changing marker style, and apply filters to your data.



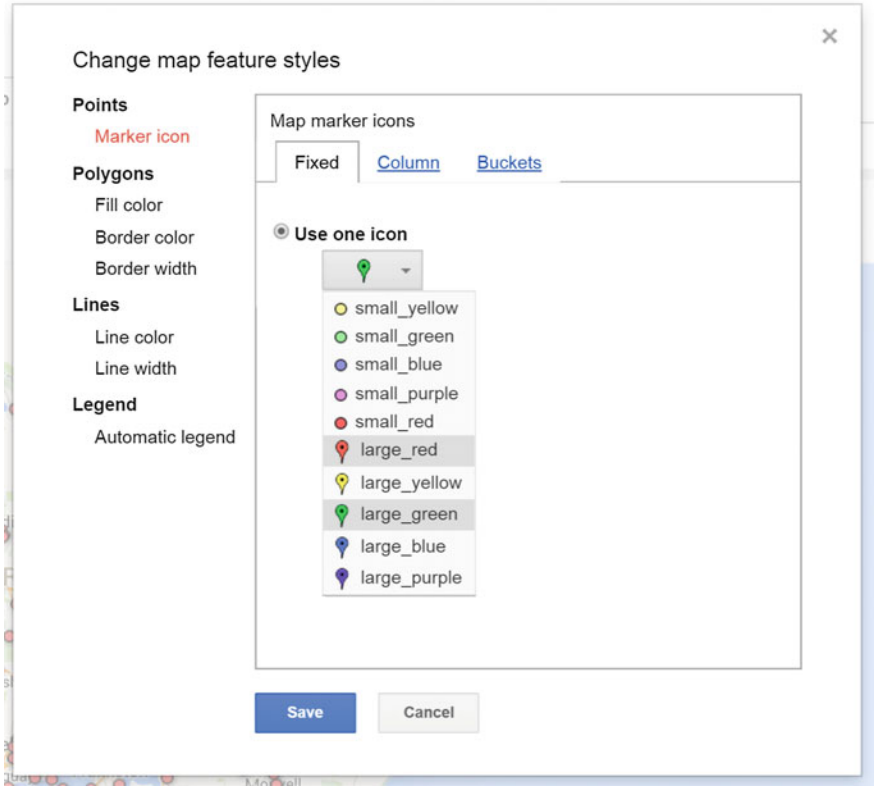
Screenshot 5.6 Detailed view of a police station

Step 9: **Changing marker styles**—to change the marker style (the red dots) use the following steps:

- ➢ Make sure that you are on the **Map** tap. Click **Tools** → **Change map** → **Change feature styles**.
- ➢ Click on **Marker icon** in the left panel and **Fixed** in the right panel (Screenshot 5.7).
- ➢ Choose a different marker from the dropdown menu and click **Save**.
- ➢ You can also assign different marker icons to different types of variables by using the **Bucket** option. For example, the police station in different regions can be marked with difference icons.

Filtering data—Filters are variables from your table/data that will be used to filter out data for display. To apply filters to your data use the following steps:

- ➢ Make sure that you are on the **Map** tap. Click on the **Filters** button available at the left upper side of the map.
- ➢ Select a filter that you want to apply from the dropdown list (e.g., we choose region) (Screenshot 5.8).
- ➢ After applying the filter, you will be offered with all the distinct values for regions (in this case 4 regions are displayed). We choose to display police stations from only one regions (i.e., Northern Metro). Now only data about police station from northern metro is displayed (Screenshot 5.9)



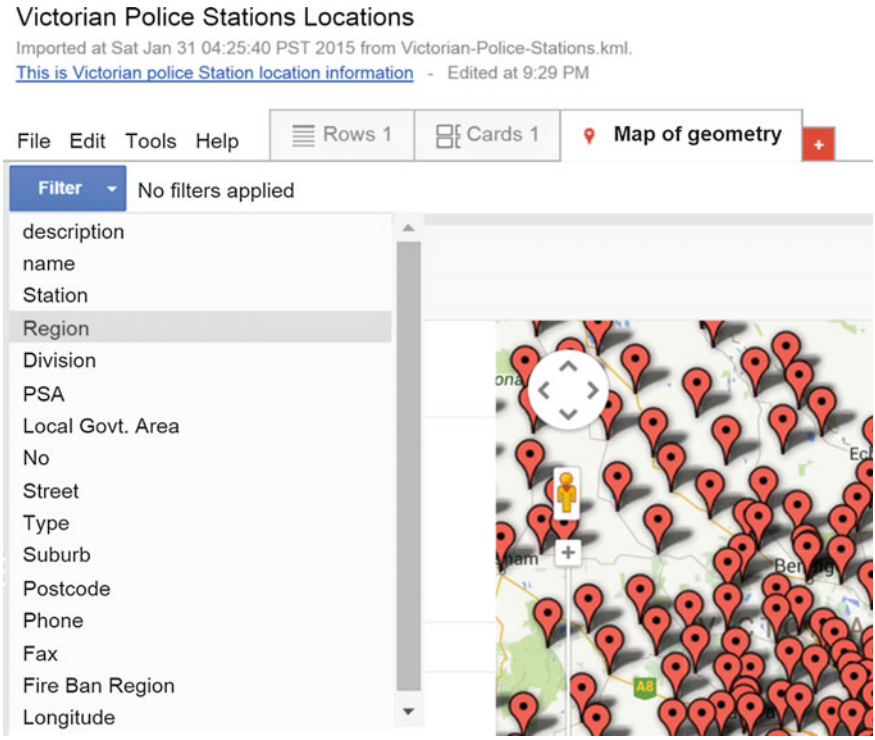
Screenshot 5.7 Changing marker icons

Customize the info window—the default information window that appears when you click on a red dot only uses the first ten columns from the data table, but you can customize which data appears and how it is displayed.

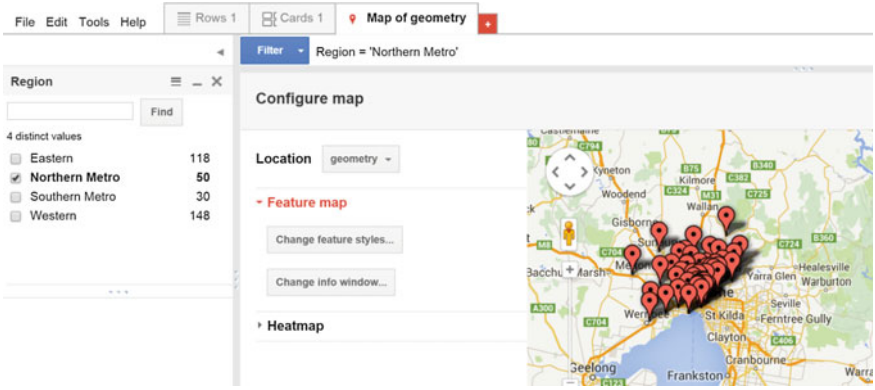
- ➢ Make sure that you are on the **Map** tap. Click on the **Tools** → **Change map** then click the "**Change info window**" button.
- ➢ Click on the checkboxes to add or remove information from the automatic info window template.
- ➢ You can also customize the overall style and content of the info window template by clicking the "Custom" tab. Once done click on the **Save** Button.

Adding Charts—Fusion Tables lets you add charts to your data so that you compare and contrast multiple values at a glance.

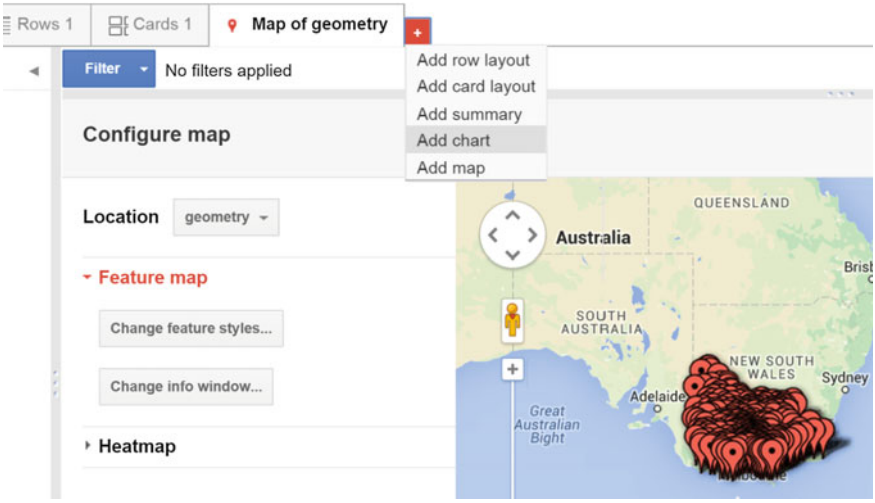
- ➢ To add a chart click on the **red plus** (+) sign and then click on **Add Chart** from the dropdown menu (Screenshot 5.10).
- ➢ Once a chart is added you can choose different variables (e.g., continuous or categorical) to chart depending on the type of chart you selected (e.g., pie chart,



Screenshot 5.8 Applying filters to the geo map



Screenshot 5.9 Region filter applied



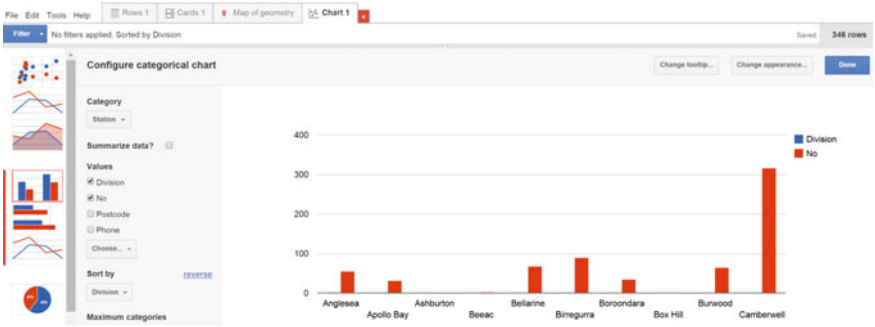
Screenshot 5.10 Adding charts to the Fusion Table

bar graph, line chart, and network chart). A chart type can be changed from the left panel.

➢ Once you selected the right type of chart, click on the **Done** button available at right upper corner (Screenshot 5.11).

Sharing you data—one of the main reasons you are using Fusion Table is to make your data available for other to see and download. To share your map, use the following steps:

➢ Make sure that you are on the **Map** tap. Click on the **Tools** menu and then click on **Publish**.



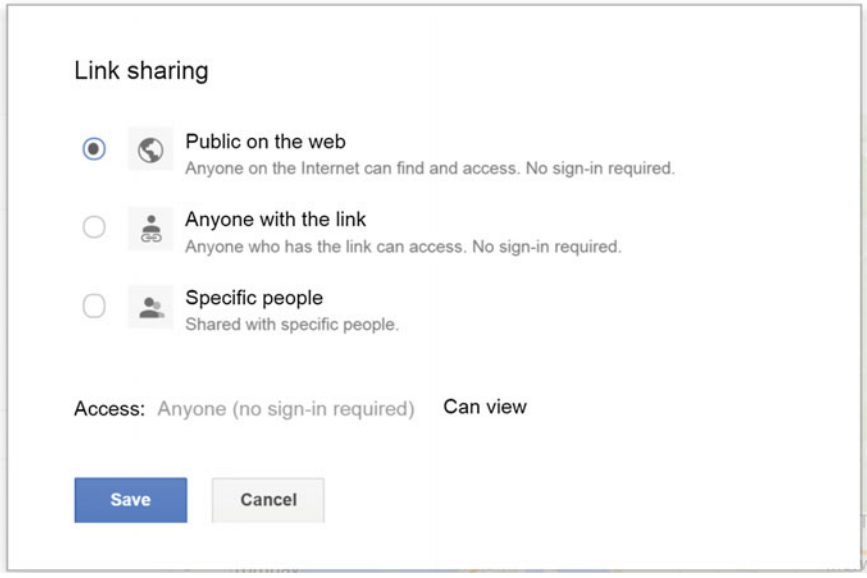
Screenshot 5.11 Configuring charts

- ➢ You can either share it with a limited number of people through email or you can make it available over the Internet for everyone to see. In the exercise, we will make it available to public.
- ➢ Click on the **Change** option under **who has access**. A new window will appear and then select "**public on the web**" option and then click **Save** (Screenshot 5.12).
- ➢ Next, you will be provided with a link and a HTML code for sharing your data (Screenshot 5.13). Copy it and click **Done**. The code and the link can be embedded into your blog, website, or other social media platforms. You can always get the link and code by clicking **Tools** and then **Publish**.
- ➢ In a similar way, the charts you have created can be shared. Note that to share a chart you must be at the **Chart tap** and then click **Tools** → **Publish**. You will be provided with a code and link to share.

Case Study 2: **Open data for transparent local governance in Helsinki**

Background: In 2011, the City of Helsinki launched an electronic case management system, in which all decisions made by the Council and other official bodies are prepared and recorded. At the same time, Helsinki was emerging as a pioneering city of open data. Bringing these two developments together could offer great opportunities for open governance and democracy.

Problem: Citizens have been able to read about decisions of the City Council, City Board, and other official bodies through the City of Helsinki website since the 1990s. However, the information has been scattered across different lists of agendas and minutes on a number of web pages. One had to be an expert in the local



Screenshot 5.12 Setting permissions

Screenshot 5.13 The link and code for publishing your data

administration system to be able to efficiently track the course of a particular issue and follow its progress through the decision-making process.

Context: With the launch of Helsinki's electronic case management system (known as AHJO), a vast amount of paperwork was transferred into a digital environment. The system has an estimated 5000 users, from officials who prepare the decisions, all the way to the city councilors who decide. While AHJO was a considerable step forward for streamlining the administrative procedure on the inside, in other respects it was only the start. For facilitating citizen participation opportunities and open governance, further innovation would be needed. How best to enable the citizens themselves to monitor the decision-making process and learn about the status of those issues and decisions that are of importance for their daily lives? A key enabling asset was the fact that the decision-making data contained by AHJO was structured and metadated (with, e.g., record numbers, keywords, geoinformation, and previous decision history) in a way that would allow efficient reuse of the data.

Solution—Open API (application programming interface): For any citizen to efficiently follow and analyze city decision-making through AHJO, an easy-to-use browsing application would be necessary. This in turn could only be achieved if the data contained in the system could be extracted through a programming interface. The regional open data service Helsinki Region Infoshare organized a workshop for application developers to plan the construction of an open interface for AHJO in 2012. Further discussions led to the first version of Open AHJO, an XML application programming interface which was later modified into the more developer friendly REST interface. Now anyone with programming skills would be able to build a user interface on top of Open AHJO, allowing the public uncomplicated access to the City's decision-making processes. The data is accessible through the open interface 24 h a day, 7 days a week, and there is no need to visit the City Registry to access the decision documents.

Outcome: The decision-making process of the City of Helsinki is now easy to monitor for any citizen with a Windows smartphone, thanks for instance to the AHJO Explorer app created in 2013 by programmer Jouni Tiainen. The agendas and minutes of City Council, City Board, and Committees as well as decisions by Mayor, Deputy Mayors, and other officials are browsable by date, topic, decision-maker, and geographic location. For City Council meetings, video clips related to the decisions are also available in the app and can be browsed by speaker. AHJO Explorer can be downloaded free of charge. This app is an example of how open data can help residents to develop informed opinions about City decision-making and make their contributions to the process. Helsinki's efforts were rewarded with the Best e-Government prize in the second WeGO awards in November 2014.

Resources: In addition to the original investments to the AHJO case management system, a smaller amount of resources have been spent on education and training activities of employees and elected council and committee members, as well as the one-off investment related to constructing the open interface to the system. The programming of the subsequent applications has been based on voluntary efforts.

Lessons learnt

✓ Open your data to enable further development

Public data produced by local authorities carries significant value—when released as open data, it can be reused by private actors for commercial purposes. Yet the public officials cannot always imagine beforehand what use the developers will find for the data. That is why it is useful to simply just open the data and see what will happen. Moreover, it is not only the outsiders who may benefit from open data—it can also facilitate the public administration's own daily routines and save considerable resources.

✓ Plan your information systems wisely

Think about data structure, metadata, linkage possibilities, and make sure your data system is not a closed container which is nearly impossible for others to understand, reuse and refine. Plan ahead for interoperability and open source development.

✓ Meet the users of your data

The value of your open data will only be fully actualized when someone finds new use for it. Talk to application developers and other enthusiasts and ask them what kind of data would inspire them to seek new solutions. This will increase the impact of the data you have released.

✓ Citizens are interested in things that relate to their daily lives

Local government may have an open attitude but open governance and two-way dialog will not take place until the citizens themselves become interested in taking

part and influencing city development. The closer the decision-making is to a person's life—the more local and more concrete—the more interest it will awaken. Geoinformation attached to the data will enable applications allowing citizens to follow city issues concerning their own neighborhoods.

✓ **Think next steps—your work is never complete**

While AHJO Explorer, for instance, is a very useful window into the local decision-making processes, more advanced participation tools can also be envisioned. One could imagine, for instance, a platform which would allow the citizens to comment on the decision-making through social media or any digital channel, or where the decisions would be automatically linked to any statistical or other data used for preparing the decision. There are endless possibilities.

Sources and further reading:

- *"A Transparent City". Helsinki Quarterly 2013:3.* http://www.kvartti.fi/en/articles/transparent-city
- *Helsinki Region Infoshare—2 years of open public data.* http://www.hri.fi/2years/
- *"Sharing data for better services in Helsinki". EUROCITIES, 2014.* http://www.eurocities.eu/eurocities/news/Sharing-data-for-better-services-in-Helsinki-WSPO-9GWTXC.

5.7 Sample Open Data Law

The following is the New York City Law on Publishing Open Data.

Section 1. Declaration of legislative findings and intent
The council hereby finds and declares that it is in the best interest of New York city that its agencies and departments make their data available online using open standards. Making city data available online using open standards will make the operation of city government more transparent, effective and accountable to the public. It will streamline intra-governmental and inter-governmental communication and interoperability, permit the public to assist in identifying efficient solutions for government, promote innovative strategies for social progress, and create economic opportunities

Section 2. [Amendment to Administrative Code]
Title 23 of the administrative code of the city of New York is amended by adding a new Chapter 5 to read as follows:

CHAPTER 5

ACCESSIBILITY TO PUBLIC DATA SETS
23-501 Definitions.
23-502 Public data sets availability.

23-503 Web portal administration.
23-504 Open data legal policy.
23-505 Internet data set policy and technical standards.
23-506 Agency compliance plan.

23-501 Definitions
As used in this chapter:

(a) "**Agency**" means an office, administration, department, division, bureau, board, commission, advisory committee, or other governmental entity performing a governmental function of the city of New York.
(b) "**Data**" means final versions of statistical or factual information (1) in alphanumeric form reflected in a list, table, graph, chart, or other non-narrative form that can be digitally transmitted or processed; and (2) regularly created or maintained by or on behalf of and owned by an agency that records a measurement, transaction, or determination related to the mission of an agency. Such term shall not include information provided to an agency by other governmental entities, nor shall it include image files, such as designs, drawings, maps, photos, or scanned copies of original documents, provided that it shall include statistical or factual information about such image files and shall include geographic information system data. Nothing in this chapter shall be deemed to prohibit an agency from voluntarily disclosing information not otherwise defined as "data" in this subdivision, nor shall it be deemed to prohibit an agency from making such voluntarily disclosed information accessible through the single web portal established pursuant to Section 23-502.
(c) "**Department**" means the department of information technology and telecommunications or any successor agency.
(d) "**Determination**" means any final decision made by an agency with respect to a person, including but not limited to (1) eligibility for services or benefits; (2) issuing a permit; (3) registration, certification and licensing; and (4) liability for civil and criminal penalties.
(e) "**Measurement**" means to quantify by means of comparison to a reference standard any characteristic of an observable event, occurrence, or object.
(f) "**Open standard**" means a technical standard developed and maintained by a voluntary consensus standards body that is available to the public without royalty or fee.
(g) "**Public data set**" means a comprehensive collection of interrelated data that is available for inspection by the public in accordance with any provision of law and is maintained on a computer system by, or on behalf of, an agency. Such term shall not include:

    (1) any portion of such data set to which an agency may deny access pursuant to the public officers law or any other provision of a federal or state law, rule or regulation or local law;
    (2) any data set that contains a significant amount of data to which an agency may deny access pursuant to the public officers law or any other provision

of a federal or state law, rule or regulation or local law and where removing such data would impose undue financial or administrative burden;

(3) data that reflects the internal deliberative process of an agency or agencies, including but not limited to negotiating positions, future procurements, or pending or reasonably anticipated legal or administrative proceedings;

(4) data stored on an agency-owned personal computing device, or data stored on a portion of a network that has been exclusively assigned to a single agency employee or a single agency-owned or controlled-computing device;

(5) materials subject to copyright, patent, trademark, confidentiality agreements, or trade secret protection;

(6) proprietary applications, computer code, software, operating systems, or similar materials; or

(7) employment records, internal employee-related directories or lists, and facilities data, information technology, internal service-desk, and other data related to internal agency administration.

(h) "**Technical standard**" means (1) the common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices; and (2) (i) the definition of terms; (ii) classification of components; (iii) delineation of procedures; (iv) specifications of dimensions, materials, performance, designs, or operations; (v) measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; (vi) test methods and sampling procedures; or (vii) descriptions of fit and measurements of size or strength.

(i) "**Transaction**" means any interaction between an agency and any person related to the mission of an agency.

(j) "**Voluntary consensus standards body**" means a domestic or international organization that develops and maintains a technical standard that utilizes a transparent deliberative process, permits the participation of any party, and achieves general consensus, although not necessarily unanimity, of the participating parties, including a process for attempting to resolve any differences in viewpoint.

23-502 Public data set availability

(a) Within 1 year of the effective date of this chapter and thereafter, the public data sets that agencies make available on the Internet shall be accessible through a single web portal that is linked to nyc.gov or any successor website maintained by, or on behalf of, the city of New York. If an agency cannot make all such public data sets available on the single web portal pursuant to this subdivision, the agency shall report to the department and to the council which public data set or sets that it is unable to make available, the reasons why it cannot do so and the date by which the agency expects that such public data set or sets will be available on the single web portal.

(b) Such public data sets shall be made available in accordance with technical standards published by the department pursuant to Section 23-505 of this chapter and shall be in a format that permits automated processing and shall make use of appropriate technology to notify the public of all updates.
(c) Such public data sets shall be updated as often as is necessary to preserve the integrity and usefulness of the data sets to the extent that the agency regularly maintains or updates the public data set.
(d) Such public data sets shall be made available without any registration requirement, license requirement or restrictions on their use provided that the department may require a third-party providing to the public any public data set, or application utilizing such data set, to explicitly identify the source and version of the public data set, and a description of any modifications made to such public data set. Registration requirements, license requirements or restrictions as used in this section shall not include measures required to ensure access to public data sets, to protect the single website housing public data sets from unlawful abuse or attempts to damage or impair use of the website, or to analyze the types of data being used to improve service delivery.
(e) Such public data sets shall be accessible to external search capabilities.

23-503 Web portal administration

(a) The department may take reasonable measures to maintain bandwidth availability of the web portal.
(b) The department shall conspicuously publish the open data legal policy, as provided in Section 23-504, on the web portal.
(c) The department shall implement an online forum to solicit feedback from the public and to encourage public discussion on open data policies and public data set availability on the web portal.
(d) Requests received via the online forum for inclusion of particular public data sets shall be considered by agencies in making determinations as to priority for public data set inclusion on the single web portal pursuant to paragraph five of subdivision b of Section 23-506 of this chapter.

23-504 Open data legal policy

(a) Public data sets made available on the web portal are provided for informational purposes. The city does not warranty the completeness, accuracy, content, or fitness for any particular purpose or use of any public data set made available on the web portal, nor are any such warranties to be implied or inferred with respect to the public data sets furnished therein.
(b) The city is not liable for any deficiencies in the completeness, accuracy, content, or fitness for any particular purpose or use of any public data set, or application utilizing such data set, provided by any third party.
(c) This chapter shall not be construed to create a private right of action to enforce its provisions. Failure to comply with this chapter shall not result in liability to an agency.

23-505 Internet data set policy and technical standards

(a) Within 180 days of the effective date of this chapter, the department shall prepare and publish a technical standards manual for the publishing of public data sets in raw or unprocessed form through a single web portal by city agencies for the purpose of making public data available to the greatest number of users and for the greatest number of applications and shall, whenever practicable, use open standards for web publishing and e-government. Such manual shall identify the reasons why each technical standard was selected and for which types of data it is applicable and may recommend or require that data be published in more than one technical standard. The manual shall include a plan to adopt or utilize a web application programming interface that permits application programs to request and receive public data sets directly from the web portal. Such manual shall be updated by the department as necessary.

(b) The department shall consult with voluntary consensus standards bodies and shall, when such participation is feasible, in the public interest and is compatible with agency and departmental missions, authorities and priorities, participate with such bodies in the development of technical and open standards.

23-506 Agency compliance plan

(a) Within 18 months of the effective date of this chapter, the department shall submit a compliance plan to the mayor and the council and shall make such plan available to the public on the web portal. Each agency shall cooperate with the department in its preparation of such plan. The plan shall include a summary description of public data sets under the control of each agency on or after the effective date of this chapter, and shall prioritize such public data sets for inclusion on the single web portal on or before December 31, 2018 in accordance with the standards promulgated by the department pursuant to Section 23-505 and shall create a timeline for their inclusion on the single web portal. If a public data set or sets cannot be made available on the single web portal on or before December 31, 2018, the plan shall state the reasons why such set or sets cannot be made available, and to the extent practicable, the date by which the agency that owns the data believes that it will be available on the single web portal.

(b) For purposes of prioritizing public data sets, agencies shall consider whether information embodied in the public data set: (1) can be used to increase agency accountability and responsiveness; (2) improves public knowledge of the agency and its operations; (3) furthers the mission of the agency; (4) creates economic opportunity; or (5) responds to a need or demand identified by public consultation.

(c) No later than July 15, 2014 and every July 15 thereafter, the department shall submit and post on the web portal an update of the compliance plan to the mayor and the council until all public data sets have been made available through a single web portal in compliance with this chapter. Such update shall include the specific measures undertaken to make public data sets available on

the single web portal since the immediately preceding update, specific measures that will be undertaken prior to the next update, an update to the list of public data sets, if necessary, any changes to the prioritization of public data sets and an update to the timeline for the inclusion of data sets on the single web portal, if necessary. If a public data set cannot be made available on the single web portal on or before December 31, 2018, the update shall state the reasons why it cannot and, to the extent practicable, the date by which the agency believes that such public data set will be available on the single web portal.

Section 3. **[Effective date]**
This local law shall take effect immediately.
Source: http://www.nyc.gov/html/doitt/html/open/local_law_11_2012.shtml.

Chapter 6
Social Media Analytics

Abstract Enabling SMB government is the easy part. Measuring and sustaining it is the real challenge. Social media should not be misunderstood as free, but it is labor intensive and requires sound analytical capabilities and strategies to get the message across. This chapter focuses on monitoring and measuring social media. Social media analytics and its seven layers are introduced to the readers coupled with practical examples on understanding and configuring Google analytics, HootSuite, and blog analytics. These tools can be used to analyze Twitter, Facebook, and blog data. A real-world case study of Seoul local government transportation department on big data analysis is included in the chapter.

Keywords Social media analytics · Text · Actions · Networks · Hyperlinks · Apps · Search engine · Location analytics · Analytics capability framework

6.1 Introduction to Social Media Analytics

Social media analytics (SMA) is art and science of extracting business insights from social media data. It deals with the analyzing and interpreting vast amounts of semi-structured and unstructured social media data to enable informed and insightful decision-making (Chen et al. 2012; Bekmamedova and Shanks 2014). Unlike the conventional business analytics of structured and historical data stored in organizations-owned database, SMA involves the collection, analysis, and interpretation of unstructured social media data (e.g., Facebook likes and comments and Twitter tweets and follow-following network data) to gain insight into the contemporary issues while supporting effective decision-making (Bekmamedova and Shanks 2014).

G.F. Khan, *Social Media for Government*,
DOI 10.1007/978-981-10-2942-4_6

6.1.1 Benefits of Social Media Analytics

The continuous monitoring, capturing, and analyzing of social media data can become the valuable information for decision-making. One of the greatest benefits of social media is that it gives you the ability to track and analyze the growth of your community on social media sites, and the activities and behavior of the people using the sites. For example, you can find out how many people are visiting your blog, or liked your Facebook status update; what your followers talk about, and who your key influencers are. Governments from around the world are starting to realize the potential of big data analytics in making timely and effective decisions. Social media analytics can not only enhance the citizen experience, but can also result in significant internal savings. Take an example of the "Owl Bus," the brand name of the Seoul (South Korea) city's intra-city buses that run nine routes exclusively from midnight to 5:00 a.m. Social media and big data played a very important role in expanding the bus routes and selection of "Owl Bus" brand name (for more details see the case included in the chapter). Big data analytics and social media helped Seoul Metropolitan Government (SMG) to realize the Seoul midnight bus "Owl Bus" project and overcome several challenges. The case study demonstrates the potential of data analytics in decision-making. The case points to advance level big data analytics capabilities which is beyond the scope of the book, but it does a good job of elaborating the role of data analytics in understanding the needs of citizens and making good decisions to solve real day-to-day problems.

Private sector has been using data analytics to achieve tangible organizational benefits for a long time. Take the case of UPS from the private sector which operates in 220 countries with nearly 400,000 employees. In 2012 it served 8.8 million customers and delivered some 4.1 billion items. It has 106,000 car drivers globally and delivers more than 16 million packages daily. The routing of UPS trucks and even the way that the driver gets off the truck, can result in savings. So far analytics has helped UPS to reduce 85 million miles driven each year.

6.1.2 Seven Layers of Social Media Analytics

Social media analytics can be performed at seven layers (Khan 2015) (Fig. 6.1).

1. Text
2. Actions
3. Networks
4. Hyper links
5. Apps
6. Search Engine, and
7. Location data.

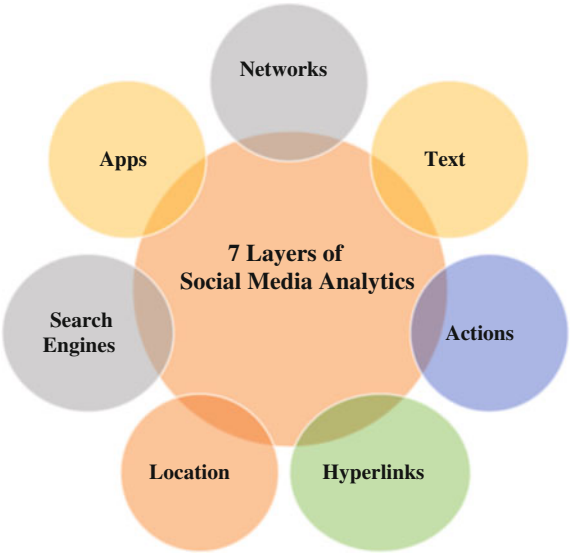


Fig. 6.1 Seven layers of social media analytics (Khan 2015)

Text—social media text analytics include extracting, analyzing, and interpreting the textual elements of social media contents, such as, comments, tweets, blog posts, and Facebook status updates. Text analytics is mostly used to understand social media users' sentiments or identifying emerging themes and topics.

Actions—social media actions analytics deals with extracting, analyzing, and interpreting the action performed by social media users, including, likes, dislikes, shares, mentions, and endorsement. Acton analytics are mostly used to measure popularity and influence over social media.

Networks—social media network analytics extracting, analyzing, and interpret personal and professional social networks, for example, Facebook friendship network and Twitter Follower network. Network analytics seeks to identify influential nodes (e.g., people and organizations) and their position in the network.

Hyperlinks—hyperlinks analytics extracting, analyzing, and interpreting social media hyperlinks (e.g., in-links and out-links). Hyperlink analysis can reveal, for example, Internet traffic patterns and sources of the incoming or outgoing traffic to and from a source.

Search engine analytics—search engines analytics focuses on analyzing historical search data for gaining a valuable insight into a range of areas, including trends analysis, keyword monitoring, search result and advertisement history, and advertisement spending statistics (Khan 2015).

Apps analytics—apps analytics deals with measuring and optimizing user engagement with mobile applications (or apps for short), such as, analyzing and

understanding in-app purchases, customer engagement, and mobile user demographics (Khan 2015).

Location analytics—location analytics, also known as geospatial analytics, is concerned with mining and mapping the locations of social media users, contents, and data.

6.2 What to Measure? Aligning Analytics with Agency Goals

The question of "what to measure" should be aligned with the agency social media strategy and goals (social media strategy is discussed in Chap. 8). Table 6.1 provides some example scenarios of what to measure and how to measure it. If your goal, for example, is to identify and empower influential followers (e.g., people and organizations) in your Twitter network, you should be focusing on the "network layer" of social media analytics. Or if you want measure the success of an outreach program, you focus should be on the "action" layer of the social media analytics.

Table 6.2 provides a summary of the framework for measuring social media interactions in the public sector developed by Mergel (2013). The framework aligns social media measurement efforts with your agency goals, mission, and tactics. For example, if your agency's mission is to enhance transparency through one-way information push, you may focus on measuring the number of Facebook shares and likes you received and Twitter followers obtained.

Table 6.1 Common social media measurement scenarios

Agency gaols examples	Layer of analytics	What to analyze	How to analyze?
What are citizens saying over social media about us? What type of issues/topics they are discussing?	Text analytics	Twitter Tweets; Facebook comments; Blog posts;	Lexalytics; Text mining; KANA text analytics; Hootsuit;
Is our information sharing effort on Twitter and Facebook fruitful?	Action analytics	Facebook likes and shares; Twitter Retweets; YouTube views;	Tweetreach; Facebook insights; Hootsuit;
Who are our influential followers on Twitter and Facebook? What is their network position?	Network analytics	Facebook fan network; Twitter Follower network	NodeXL; Followerwonk; Hootsuit;
Which social media platforms are sending the most traffic to our ministry website?	Hyperlink analytics	Hyperlinks; In-link;	Webometrics analyst; Google analytics Voson;

Table 6.2 Framework for measuring social media interactions in the public sector

Mission	Goal	Tactics	Social media mechanisms	Outcome
Transparency	Information education	One-way push	Number of followers and likes/friends (change from start)	Accountability trust
			Facebook likes	
			Twitter followers	
			Unique visits to blog	
			Time spend on page	
			Visits only home page	
			Views on YouTube and Flickr	
Participation	Engagement	Two-way pull	Click-throughs from social media sites	Consultation, deliberation, satisfaction
			Reach: demographic data (gender, location, cities)	
			Bookmarking and digging content	
			Twitter retweets, hashtags	
			Posting ratings and reviews	
			Spend more than 1 min on-site	
			Comments on blog and Facebook	
			Ratings on YouTube	
			Number of links and trackbacks	
			Frequency of check-ins on Foursquare	
Collaboration	Cross-boundary action Two-way interactive	Networking Codesign of services	Request for membership in a LinkedIn group	Community building Creation of issue networks
			Subscriptions to blog, YouTube channel	
			Facebook shares	
			Twitter direct messages	
			Creating their own content	
			Downloads of videos, documents	
			Conversations	
			Volunteering, donations	
			Offline actions	

6.3 Social Media Analytics Capability Framework

In order to harness value from the social media data, organizations need sophisticated social media analytics capabilities. The capabilities needed to leverage social media data are significantly different than the conventional business analytics capabilities which leverage mostly the internally business generated and owned data. Karim et al. (2016) have developed a social media analytics capability framework that organizations can utilize to effectively leverage social media (Fig. 6.2). Social media analytics (SMA) capabilities are the technologies, organizational, people, environment, and cultural capabilities that are needed in collection, inspection, and transformation of huge social media data to support organizational decision-making (Karim et al. 2016).

Social Media Technical Capabilities—the overall technical capabilities and infrastructure needed to extract, mind, and interpret social media, such as, data mining, sentiment analysis, and including capabilities in the seven layers of social media data of discuss above.

Social Media Environmental Capabilities—the overall organizational understanding and awareness related to regulations, security, and privacy issues surrounding social media use and data.

Social Media Cultural Capabilities—these capabilities include the overall tacit and explicit organizational norms, values, and behavioral readiness for social media data-based decision-making.

Social Media Governance Capabilities—the organizational capabilities include the overall organizational adoptability, innovativeness, and alignment of social media with business objectives.

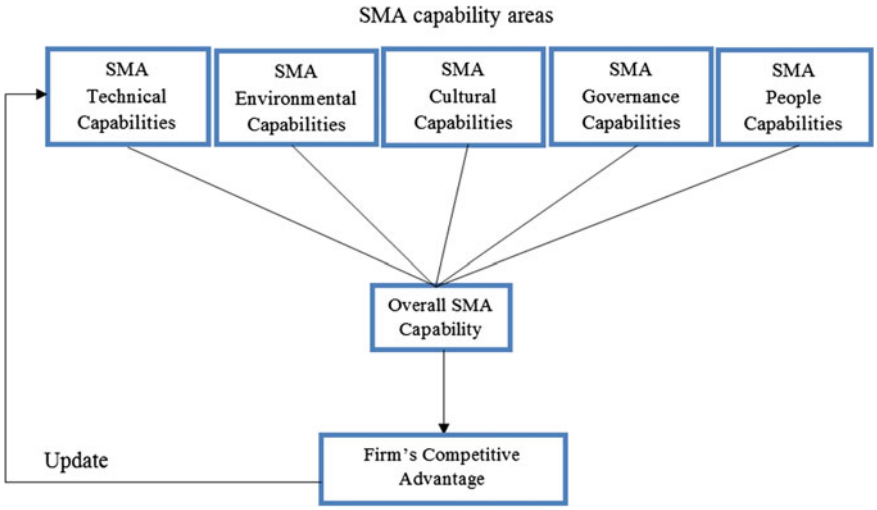


Fig. 6.2 Social media analytics capability framework (Karim and Khan 2016)

Social Media People Related capabilities—the social media people related capabilities are the capability area that is relevant to the human capital of the organization, such as, the availability of trained personnel in the field of SMA.

Due to the turbulent nature of social media technical and social environment, the SMA capabilities need to be consistently updated and adjusted as the usage of social media patterns and the requirements of the organizations change over time.

6.4 Challenges to Social Media Analytics

Social media data is high volume, high velocity, and highly diverse, which in a sense is a blessing in terms of the insights it carries, but also analyzing and interpreting it presents several challenges.

Volume and velocity as a challenge—social media data is high volume and velocity. Capturing and analyzing millions of records that appear every second is a real challenge. For example on Twitter, 342,000 Tweets appear every minute and on Facebook 1 million likes are shared every 20 min.

Diversity as a challenge—social media users and the content they generate are extremely diverse. Not every tweet, like, or user is worth looking at. A tweet or mention coming from an influential social media user is more important than a tweet from a noninfluential user. Due to noisy and diverse nature of social media data, separating contents that matter from noise can be challenging and time consuming.

Unstructuredness as a challenge—unlike the data stored in the corporate databases which are mostly numbers, social media data is highly unstructured consisting of text, graphics, actions, and relations. Analyzing unstructured data requires new tools and capabilities particularly for real-time analytics that most agencies do not possess.

6.5 How to Measure?

Contingent on your social media analytics layer of interest, you may require different tools. A variety of social media analytics tools are available. Some tools are free and others are subscription based. Table 6.3 provides two broader categories of analytical tools, (1) end users applications, (2) scripts and modules for Twitter and Facebook. End users applications generally do not require extensive technical and computer programing skills; whereas, scripts/modules do require comprehensive technical skills.

Table 6.3 Social media analytics tools

Platform	End users applications	Scripts and modules
Twitter	• DiscoverText: http://www.screencast.com/t/VKLqaekPz	• Twarc: https://github.com/edsu/twarc
	• Demographics Pro: http://www.demographicspro.com/	• Twitter for Python: https://pypi.python.org/pypi/twitter
	• NodeXL: https://nodexl.codeplex.com/	• py script by Prof. Libby: https://github.com/casmlab/user-timeline-tools
	• Twitonomy: http://www.twitonomy.com/	• R's twitterR package: https://cran.r-project.org/web/packages/twitteR/twitteR.pdf
	• RapidMiner: http://docs.rapidminer.com/studio/how-to/cloud-connectivity/twitter.html	• Erik Michaels-Ober's Ruby gem 't': https://github.com/sferik/t
	• KPI6: https://www.kpi6.com/	
	• Talend: http://www.datalytyx.com/twitter-sentiment-analysis-using-talend/	
	• KNIME: https://www.knime.org/blog/knime-twitter-nodes	
	• Pentaho: http://www.patlaf.com/query-twitter-api-with-pentaho-pdi-kettle/	
	• iScience Maps: http://maps.iscience.deusto.es/	
	• Nexalogy: https://nexalogy.com/	
Facebook	• Infoextractor: http://www.infoextractor.org/	• Facebook Python SDK: https://github.com/pythonforfacebook/facebook-sdk
	• Discovertext: https://discovertext.com/	• Facepager: https://github.com/Facepagerstrohne/Facepager
	• Digitalfootprints: http://digitalfootprints.dk/	• RFacebook: http://cran.r-project.org/web/packages/Rfacebook/index.html
	• NodeXL: http://socialnetimporter.codeplex.com/	• SocialMediaMineR: http://cran.r-project.org/web/packages/SocialMediaMineR/
	• Nvivo/Ncapture: http://www.qsrinternational.com/products_nvivo_add-ons.aspx	
	• Sodato: http://cssl.cbs.dk/software/sodato/haven't been able to create an acct for this	
	• Plus one social: http://plusonesocial.com/	

6.6 Social Media Analytics Tools

Below, some useful SMA applications are briefly discussed. These applications can be used to perform analytics on variety of platforms. Aligned with your social media strategy, these tools can be used to measure different layers of social media data.

NodeXL: For advance level network analysis and visualization, NodeXL (http://www.connectedaction.net/nodexl/) is a great tool. NodeXL (an add-in for Microsoft Excel) is the free tool for social network analysis and visualization. It can help you construct and analyze Facebook Network (based on co-likes and co-comments), twitter network (followers, followings, and Tweets network), and YouTube network (user network and comments), among others. Covering NodeXL is beyond the scope of this book. A video tutorial for NodeXL can be found at: https://www.youtube.com/watch?v=VwVvQhhLUqc.

Webometrics Analyst: Webometric Analyst is a web impact analysis tool and can conduct variety of analysis on social media platforms including hyperlink network analysis and web mentions. http://lexiurl.wlv.ac.uk/.

Lexalytics: Lexalytics (http://www.lexalytics.com/) is a social media text and semantic analysis tool for social media platform including Twitter, Facebook, blogs, etc.

Google Alerts: Google Alerts (https://www.google.com/alerts) is a content detection and notification service that automatically notifies users when new content over the Internet (e.g., social media, web, blogs, video and/or discussion groups) matches a set of search terms based on user queries. Users are alerted through email. Find out about how to use Google Alerts.

Social Mention: Social Mention (http://socialmention.com/) is similar to Google Alerts, but it only focuses on social media sites, and you can choose to focus on particular areas, such as blogs. With Social Mention you can monitor for the appearance of particular keywords and it will give you information on related users, hashtags, and more.

TweetBeep: TweetBeep (http://tweetbeep.com/) is like Google Alerts for Twitter. Choose some keywords and receive daily search results via email.

Facebook Insights: Facebook Insights (https://www.facebook.com/insights/) helps Facebook page owners understand and analyze trends within user growth and demographics.

Clout: Klout (https://klout.com/) measures your influence across a range of social media channels based on how many people interact with your posts. Klout Score measure influence on a scale from 1 to 100 number showing how influential you are.

Icerocket: Icerocket (http://www.icerocket.com/) specializes in blog searches and also captures activity on Facebook, Twitter, and Flickr.

Topsy: Topsy (http://topsy.com/) is similar to Icerocket and Social Mention with the main focus around social media, especially multimedia sites and blogs.

Tweetreach: this tool helps you measure the number of impressions and reach of hashtags. The tool can be accessed here: https://tweetreach.com.

Followerwonk: This tool help you perform basic Twitter analytics, such as, who are your followers? Where are they located? When do they tweet? (e.g., see Fig. 6.3). The tool can be accessed via http://followerwonk.com/.

Kred: Kred helps you measure the influence of a twitter account www.kred.com.

Hastagify: This tool measures the influence of hashtags: http://hashtagify.me.

Mentionmapp: this online tool is used to investigate Twitter mentions displayed in a map (http://mentionmapp.com/). For example, Fig. 6.4 shows a map of mentions for @gfkhan. Each user is connected to the people and hashtags (#) they mentioned the most in recent tweets.

Twtrland: Twtrland is a social intelligence research tool (http://twtrland.com/) for analyzing and visualizes your social footprints.

Tweetstats: using your Twitter user name, Tweetstats tool graph Twitter stats including tweets per hour, tweets per month, tweet timeline, and reply statistics (http://www.tweetstats.com).

In this book, we will use Blog analytics (i.e., The WordPress built-in analytical tool), Google Analytics, and HootSuite for analytics purpose. These tools do not require programming skills. Google Analytics is an easy to use free online platform. HootSuite is also an easy to use online platform that enables you to manage your accounts across the most popular social networks. The free version supports up to five profiles and has limited analytics information. If you want to get more detailed reports you will need to upgrade to the paid version.

Fig. 6.3 Twitter follower map generated with Followerwonk

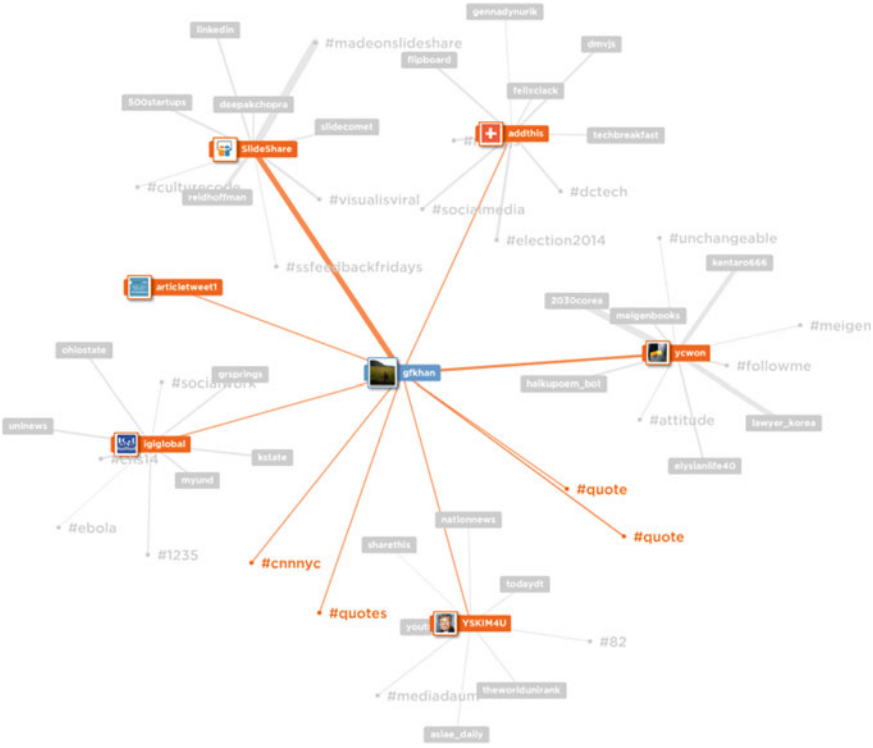


Fig. 6.4 Twitter map of mentions for @gfkhan generated with Mentionmapp

Case Study 3: Big data analytics, social media, and "Owl Bus"

Background

The Seoul Night Bus, also known as the "Owl Bus," (Fig. 6.5) is the brand name of the Seoul (South Korea) city's intra-city buses that run nine routes exclusively from midnight to 5:00 a.m. Like an owl, animated in the dark with its yellow-glowing

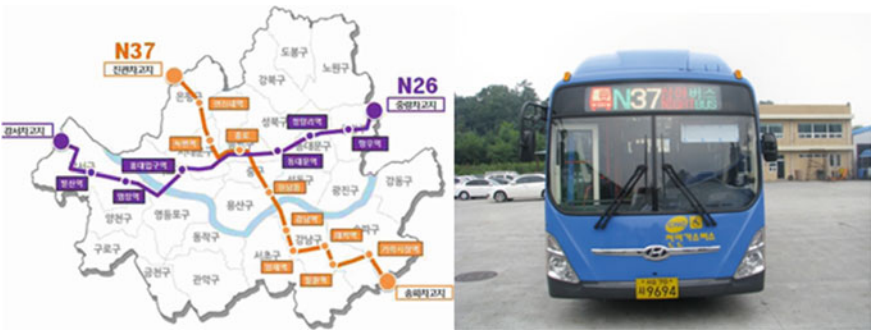


Fig. 6.5 The Seoul Nightly Bus "Owl Bus," and its routs

eyes, the "Owl Bus" was born to make Seoul's public transportation service ceaseless, carrying the city's late night commuters. As the service is the first of its kind in Korea, policymakers struggled to shape action plans in detail. Particularly, the biggest task was to address issues such as selection of the routes, ensuring efficient operation and passengers' safety and convenience. Big data analytics and social media help Seoul Metropolitan Government (SMG) to realize the "Owl Bus" project and overcome these challenges.

The Problem

- **Insufficient mobility rights for the socially and economically disadvantaged**
  Since the subway line No. 1 opened in 1974 through the transformation reform carried out in 2004, the SMG has steadily introduced measures to ensure greater convenience and better mobility of the citizens. However, students and workers such as sanitary workers or small business owners, who return home late night, found it hard to benefit from the preexisting systems. Most of them suffer from the poor working conditions and low salaries, yet they still had to pay the late-night extra charge when taking taxis to return home.
- **Growing inconvenience due to late-night taxis' refusal of passengers and illegal operation**
  During late night and dawn hours, there are far less available taxis than people who are trying to hail a cab. Thus, illegal operations are prevalent by taxi drivers demanding extra fares, causing serious inconvenience to citizens. Additionally, there are practical limitations in controlling such irregularities. First, there is a shortage of police officers responsible for preventing such violations, and even if the police catch an offender red-handed, it is difficult to obtain evidence to prove the driver's act of refusing passengers or demanding illegal excess fares.
- **Public–private consensus on the need for new means of transportation to support urban dwellers' economic activities**
  Seoul, transformed into a global city within just 50 years, is emerging as a prime location of the global economy. As the city's industrial, economic and cultural activities expand in size and scope, the citizens reached a consensus on the need for a bus service that operates from midnight to dawn. It was also considered that advanced nations such as Germany and the U.K. have already run such services to promote the safety of the citizens and their rights to mobility.

Private bus companies' selective operation on profitable routes was a long-running concern for SMG. Thus, it shifted from private to quasi-public bus operation system. In the new system, Seoul manages the bus routes and revenues while the private companies operate buses.

The solution

- **Test Operation of Night Bus at the Request of the Citizens**
  Since 2012, the SMG has operated the 120 Dasan Call Center and the official blog to better listen to the voices of the citizens, and developed various policy

measures based on the information collected through these channels. Along the way, an opinion was received that the late-night taxi service is not only difficult to use but also imposes heavy financial burdens on users. An on-site survey conducted for about six months from October 2012 found it necessary to operate a late-night bus service. As a result, starting from April 19, 2013, the city government began operating two pilot routes exclusively for an after-midnight service.

➢ **Role of big data analytics and social media**

Social media and big data played a very important role in expanding the bus routes and selection of "Owl Bus" brand name. For three months following the launch of the test operation, the service was extremely well received by 220,000 people, making it justifiable to raise the number of service routes. The seven new lines were determined by taking into consideration the heavy concentration of people on the move during late-night hours. During the initial stages of mapping out how to operate the Seoul Night Bus, the issue of selecting bus routes emerged. The municipal government color-coded regions by call volume based on the big data provided by a private communication service provider, KT. Then, it analyzed the number of passengers who get on and off at each bus stop in the heavy-call volume regions and connected the dots to lead to the most pertinent routes. The data was used to construct a radial-shape network linking outer districts of the city with the hub areas such as Jongno and Gwanghwamun. With news regarding the Late Bus spreading over SNS channels, citizens voluntarily suggested to name the late-night bus. Thus, the city government invited public ideas for the naming of the service and, as a result, the brand name "Owl Bus" and "N (Late Night)," and the character that portrays an owl operating a bus were selected. These symbols have been used to mark bus stop signs, bus route map and numbers and distinguish the late-night buses from ordinary ones. With the letter "N" in the bus number, the service began its full operation on September 16, 2014.

Results

➢ **Real-time operation information**

The service provides citizens with real-time operation information. Anyone who wants to take the "Owl Bus" can check the arrival time and location of the bus stop in advance through the website or smartphone apps. Meantime, given that the service operates late night, safety measures were critical to protect citizens. Besides the protective partition and speeding prevention device, it was made mandatory to inspect the vehicle before driving. The drivers with proven qualifications are also well remunerated so that they do not have to take on other vocational activities during the daytime hours and can fully concentrate during night time driving.

➢ **Safe and Affordable Means of Transportation for Citizens**

The numbers of "Owl Bus" passengers are on the constant rise. A total of 1,735,000 people have taken the buses from September 2009 to June 2013,

making the daily average passengers stand at around 7000. As for economic aspects, passengers are expected to save approximately KRW 6000 as the "Owl Bus" charges KRW 1850 per trip while the average taxi fare in the same timeframe costs KRW 8000. Given that the most of the passengers are students, self-employed small business owners or workers, the service is expected to help stabilize their household finances.

Meantime, most passengers are concentrated in the timeframe from midnight to 03:00, when students and workers return home completing their after-school self-study and night duties. As the unfrequented time tends to leave them more vulnerable, the "Owl Bus" is considered to help them move more safely. Notably, the "Safe returning-home service" provided in cooperation with the nearby police stations reinforce the safety.

➢ **Income redistribution for the economically disadvantaged**
Before the operation of the "Owl Bus," one had to pay up to tens of thousands of won to move from the city center to a residential district outside the city. However, they now can complete their journey with just 1850 won. As the savings will lead to higher disposable incomes, income redistribution effects are expected, too. As of 2013, the SMG estimates nearly KRW 14.1 billion worth of economic benefits have been redistributed.

➢ **Distribution of the manual for other local governments to benchmark**
As residents of other cities express their interest in the "Owl Bus," through SNS channels, local governments and research institutes have inquired about the process in the run-up to the introduction and requested lectures on the "Owl Bus." With many metropolitan governments expressing their interest, the Busan Metropolitan Government has already begun operating the late-night service by extending the operation hours of existing intra-city buses and other cities such as Ulsan and Daejun consider introducing it, too.

Resources

➢ **Budget**: To finance the operation of the "Owl Bus," budget provision was needed to pay for the labor costs and the installation of safety facilities such as protective walls for drivers and a speeding prevention system. However, these expenses were covered by the joint management funds for the shift from private to quasi-public bus operation. Consequently, additional costs were not incurred.

➢ **Technology**: Information systems connected inside the vehicles such as the Bus Management System, the Bus Information Unit and Bus Information Tool enable comprehensive control of the bus operations, and efficient adjustment of intervals while providing users and drivers with real-time operation information.

➢ **Human resources**: The "Owl Bus" was introduced without incurring additional costs, and increased operation revenues too. The allocated resources are 45 vehicles and a total of 54 workers; 36 for driving, and 18 for management.

Source: Seoul Metropolitan Government, Transportation Department, South Korea.

6.7 Understanding Blog Analytics

The WordPress blog configured in the earlier chapter has built-in analytics ability. Use the following steps to access WordPress blog analytics.

Step 1: go to your blog by typing its address in the Internet explorer.
Step 2: Click on the **My Site** option available at the top left corner of the window.
Step 3: click on the **Stats** option available below the **WP Admin** option. You can also access the blog analytics by clicking on the **Site State** option available in the blog Dashboard. Blog dashboard can also be accessed by clicking on the **WP Admin** option in **My Site** window.

Once in the blog analytics window, you can see variety of metrics including, number of views received by your blog, number of visitors and their location, and number of comments and likes received by your blog. By scrolling down, you be also be able to see number of clicks recorded, popular tags, blog followers, and referrals, if any. Blog analytics can be viewed on daily, weekly, monthly, or yearly basis.

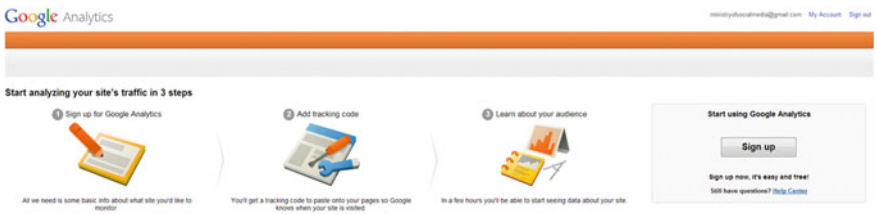
6.8 Monitoring and Analyzing with Google Analytics

Google Analytics is a great tool for analyzing traffic on your blog/wiki/website. With it you can see who is visiting your site, what they are looking for, how they are getting there, how long they are staying there, etc.

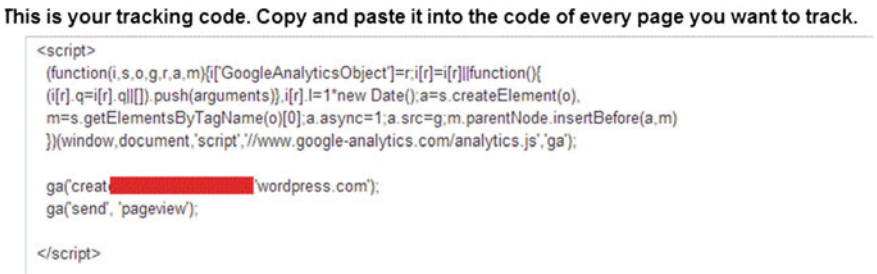
6.8.1 Setting up a Google Analytics Account

Step 1: Go to the Google Analytics website (http://www.google.com/analytics/).
Step 2: Click the **Sign In** button available at the top right corner of the page to continue. Next, provide your Google account and password and click the **Sign In** button.
Note: If you do not have a Google account, click on **Create an Account** available at the right-top of the sign-in page. This will take you to a page where you can sign up for a Google account.
Step 3: Clicking on the **Sign In** button will bring you to the Google Analytics login page. Here, click on the **Sign Up** button to get started (Screenshot 6.1).
Step 4: Provide the following information:

- Name of your blog/wiki/website (If you will be tracking multiple sites, this is especially important);
- The URL of the blog/wiki/website you wish to analyze;
- Select your industry category;



Screenshot 6.1 Configuring Google analytics



Screenshot 6.2 Google analytics tracking code

- Select your time zone; and
- Check the data sharing options.

Once you are done, click on the **Get Tracking ID** button.

Step 5: Next, read the Google Analytics terms of service. If you agree with them, click the **I Accept** button.

Step 6: Google will provide you with a block of code and a Tracking ID (Screenshot 6.2). Copy this because you will need to insert it into your blog/wiki/website.

6.8.2 Inserting Google Analytics' Code into Your Blog

Unfortunately, at the time of writing this guide, Google Analytics cannot be used with wordpress.com (so you have to rely on the wordpress.com built-in analytics discussed earlier), but it can be used with www.wordpress.org. Wordpress.org is the self-hosted version of WordPress where you can create and host your website yourself. WordPress software should be downloaded and in installed on a web server before it will work. Wordpress.org is more power and gives you more control over your blog, but requires technical skills in website programming languages.

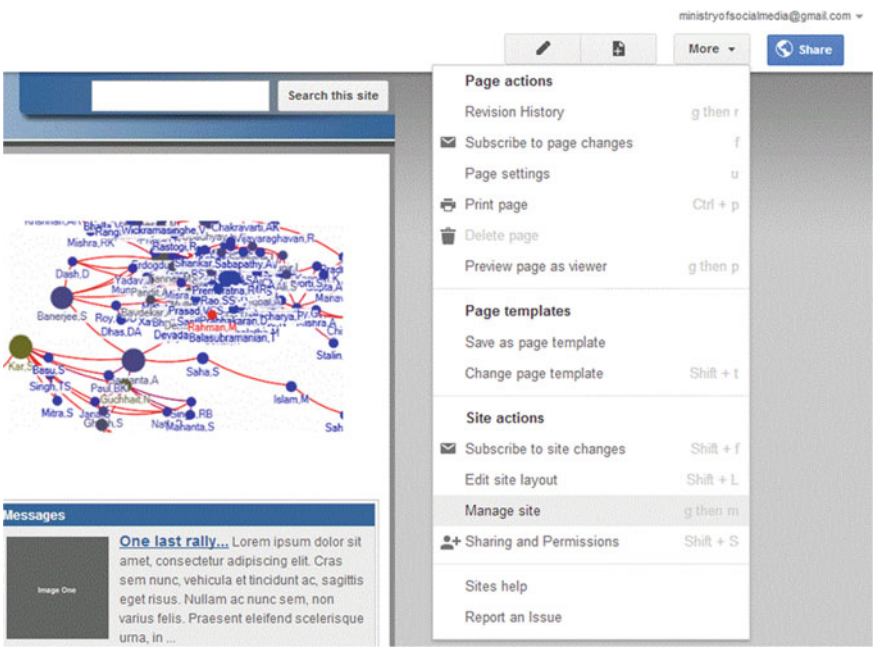
To add Google Analytics code to your wordpress.org blog follow the following steps.

Step 1: Copy the code that you received in Step 4.
Step 2: go to the WordPress **Admin** and then click on the **Appearance** and click on the **Editor**.
Step 3: Once in your theme's *header.php* file, paste the code in your theme's *header.php* right after the <body> tag.

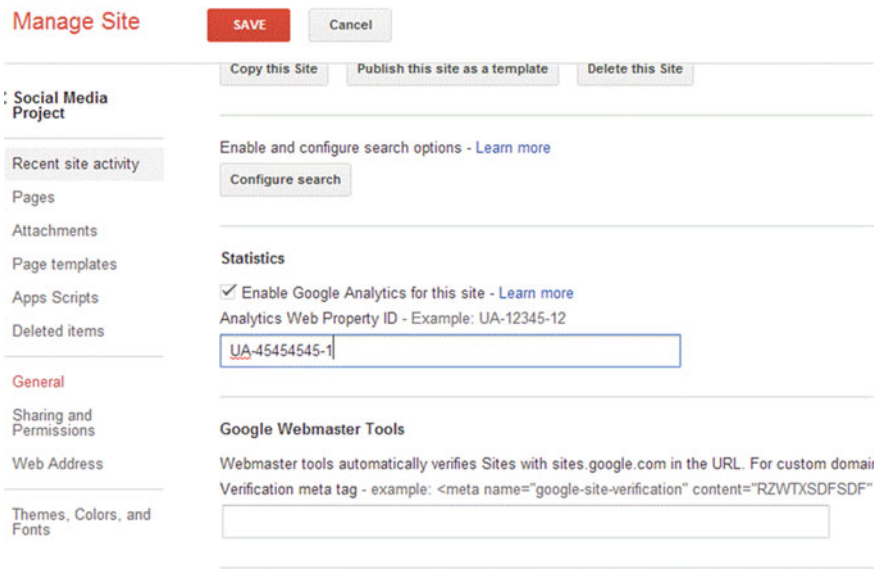
6.8.3 Inserting Google Analytics' Code into Your Wiki

In this guide, we will configure the wiki we created earlier for tracking by Google Analytics.

Step 1: Go to the wiki that you created earlier (i.e., https://sites.google.com/site/socialmediaproject01) and login with your email and password.
Step 2: On your wiki, click the **More** drop-down menu and select **Manage Site** (Screenshot 6.3).
Step 3: Under the Manage Site section, click on **General**. Next, check the box **Enable** Google Analytics **for this site** under the Statistics section, and then enter your **Analytics Tracking ID** generated earlier in the associated box. When done, click the **Save** button (Screenshot 6.4).



Screenshot 6.3 Adding Google analytics code the project wiki



Screenshot 6.4 Add the tracking code in the designated place

Note: It may take up to 24 h for Analytics to start working. To check if your site is being tracked, sign into Google Analytics, go to your profile screen, and look at the website profile tracking status message next to the site.

6.8.4 Learning to Use Google Analytics

Step 1: Log into Google Analytics.

After logging in, you will see the following four tabs on the top of the page.

Home—this tab shows the sites (e.g., blogs, wikis, or websites) you have configured to use Google analytics.

Reporting—reporting tab will display all the analytics and statistics related to your site.

Customization—this tap is used to create custom-made analytic reports.

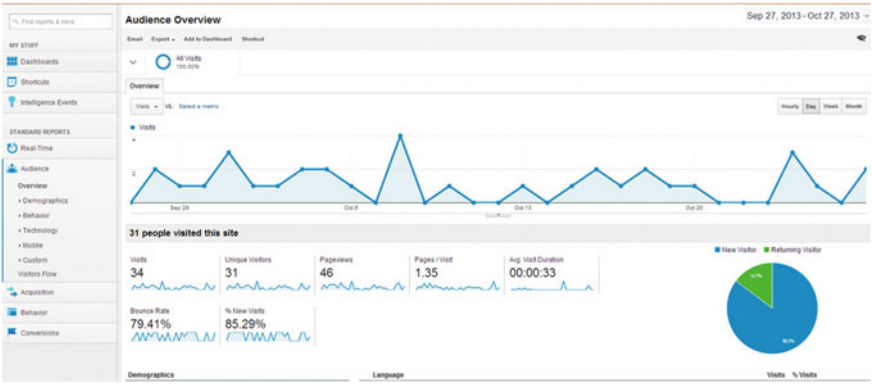
Admin tab—at this tab you can carry out all Google analytics administration task, such as, account settings, user management, track coding, and AdWords settings.

Step 2: Clicking on the **Report tab** will bring you to the Google Analytics dashboard.

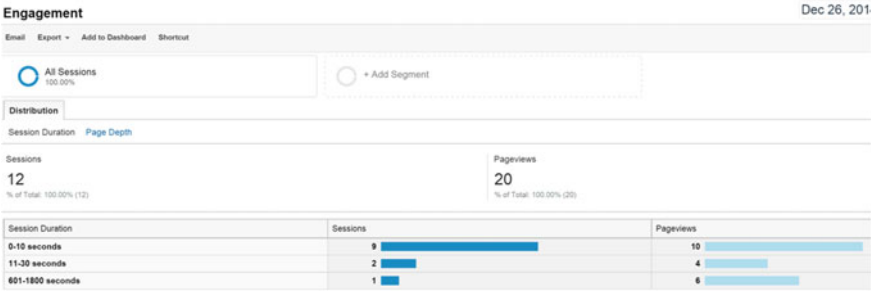
Step 3: Google Analytics dashboard (Screenshot 6.5) Google Analytics provides the following important statistics related to your blog/wiki/website.

Site traffic: At the top of the page is a chart that gives a visual representation of your site traffic over the past hour, day, week, or month.

Engagement: It shows how long a person is on your website. The statistics be accessed by clicking on **Audience** → **Behavior** → **Engagement** (Screenshot 6.6).



Screenshot 6.5 Google analytics dashboard

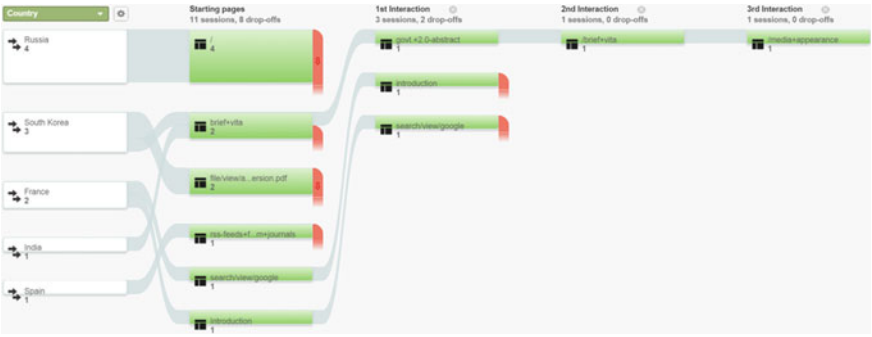


Screenshot 6.6 Audience engagement statistics

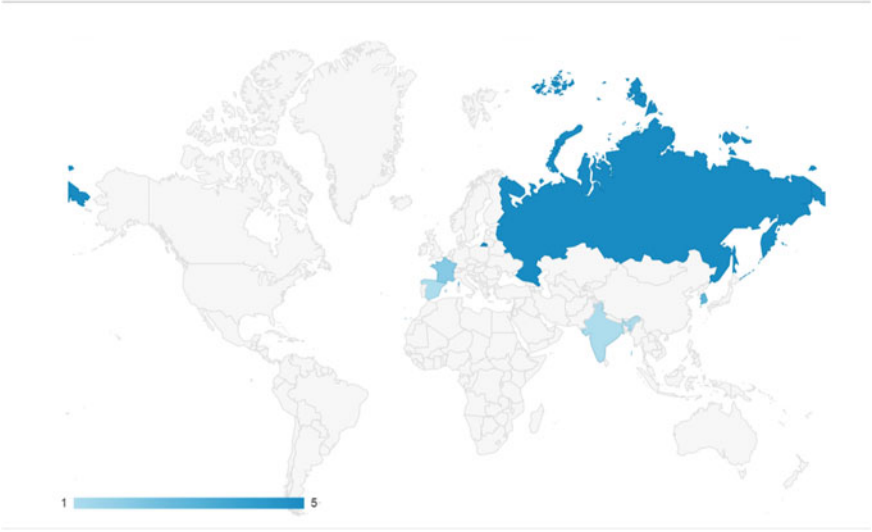
Demographics: Visitors' demographic information (age and gender) can be accessed by clicking on **Audience → demographic**.
New versus returning visitor: This information can be accessed by clicking at **Audience → Behavior → New versus Returning**. The following statistics are displayed.

✓ **Visits** tells you how many visits there were to your page.
✓ **New visitor** shows the percentage of first-ever site users.
✓ **Returning visitor** shows the percentage of users that have visited the site more than once.
✓ **Average pages per visit** shows the number of pages, on average, users viewed in a single visit.
✓ **Average visit duration** shows how much time visitors are spending on your site.
✓ **Bounce rate** shows the percentage of single-page visits or visits in which the person left your website from the entrance (landing) page.

Visitor flow: lets you analyze the path the users takes when they land on your site (Screenshot 6.7). It can be accessed by going to **Audience → Visitors flow**.



Screenshot 6.7 Visitors flow statistics

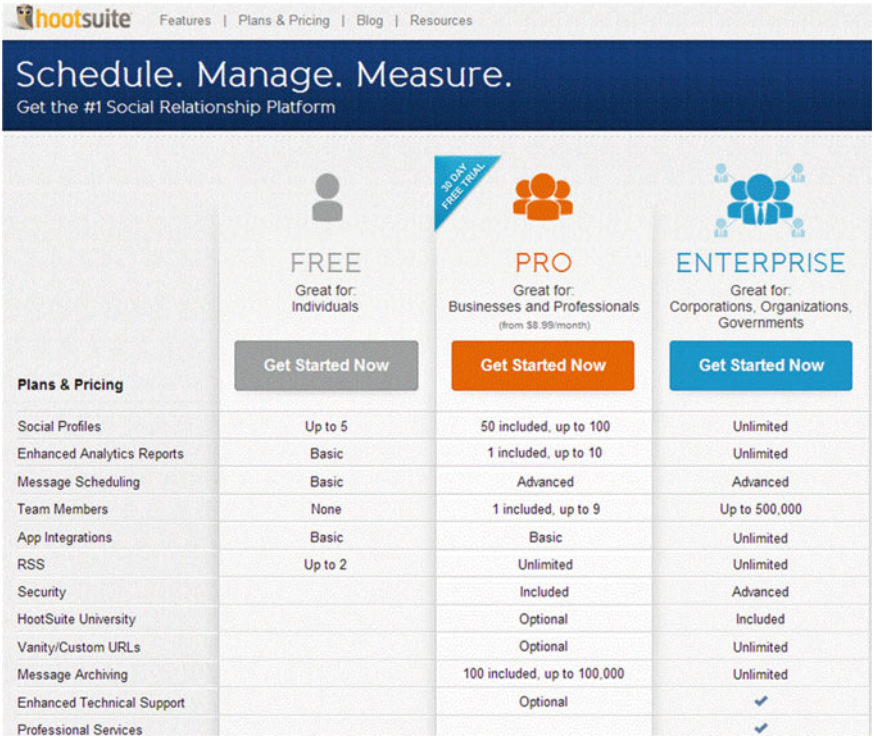


Screenshot 6.8 Location map of the visitors

Geo: Geo tab lets you know the location and language of your visitors (Screenshot 6.8). **Audience** → **Geo** → **location**. Location is calculated based on the IP of the visitors.

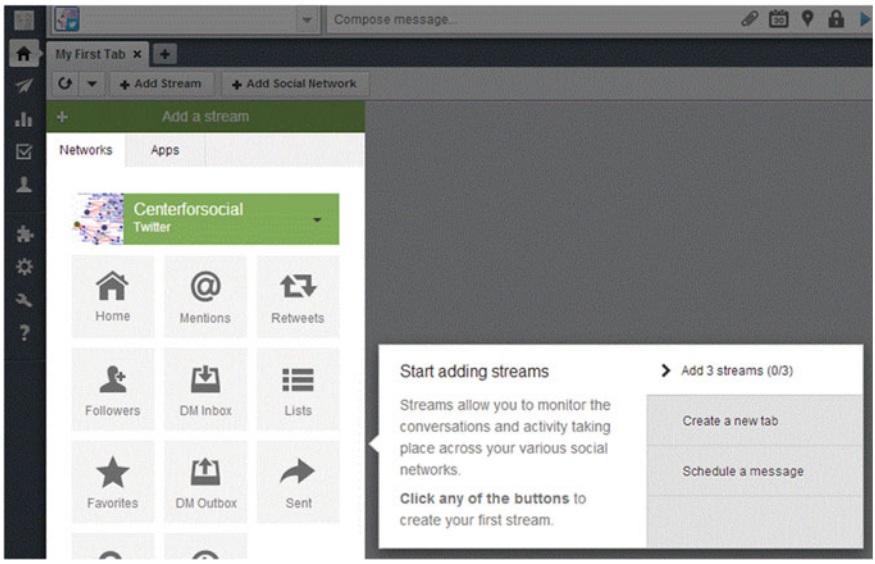
6.9 Installing and Configuring HootSuite

HootSuite is also an easy to use online platform that enables you to manage your accounts across the most popular social networks. The free version supports up to five profiles and has limited analytics information. Below are the step by step guidelines to configure and use HootSuite.



Screenshot 6.9 Installing Hootsuite

Step 1: To start using the free version, go to http://signup.hootsuite.com/plans-cc/ and click on the **Get Started Now** button available under the free version (Screenshot 6.9).
Step 2: Next, provide your email address and name, and choose a strong password, and then click on the **Create Account** button.
Step 3: Next, click on **Twitter** button available under the Connect Your Social Network section. Note that you can choose several social media accounts that you want to manage using HootSuite. Here, we will only configure Twitter.
Step 4: Next, a popup window will open asking you to authorize HootSuite to access your Twitter account. Here, provide your Twitter username (or email) and password and then click on the **Authorize App** button.
Step 5: After authorization, your Twitter account will appear in the Connected accounts. Next, click the **Continue** button.
Step 6: Click on the **Get Started** button to complete the three simple steps (i.e., adding streams, creating a tab, and scheduling a message) suggested by HootSuite.



Screenshot 6.10 Adding streams to Hootsuite

Adding streams

Step 7: To monitor the conversation and activities over Twitter, you need to add streams (Screenshot 6.10). To do so, click on all the streams you are interested to monitor (e.g., Followers, Tweets, Mentions, Retweets).
Step 8: Streams will start appearing on your Hootsuite.

Creating a tab

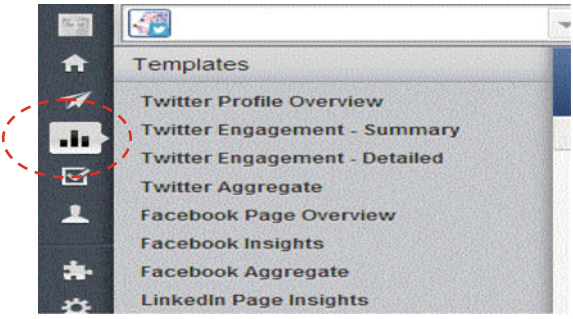
Step 9: Tabs are used to group streams-based interest or similarity. To add a tab, click on the **+**icon.
Step 10: Name the new tab (e.g., Followers) and click **Next**.

Scheduling a message

Step 11: With HootSuite you can post message to several social media platforms (e.g., Twitter and Facebook) either instantly or for later. To write a message, click to select the social profile(s) that will post your message (in this case Twitter). Click **Compose Message**, and then type message. After writing the message either click the **Send Now** button or click the **Calendar** icon to schedule it for later. This step will complete the initial configuration of HootSuite.

6.9.1 Analytics with HootSuite

HootSuite provides two ways to generate analytics reports, (1) using premade templates, and (2) creating custom-made analytics reports. Note that the free



Screenshot 6.11 Bar graph (analytics) icon

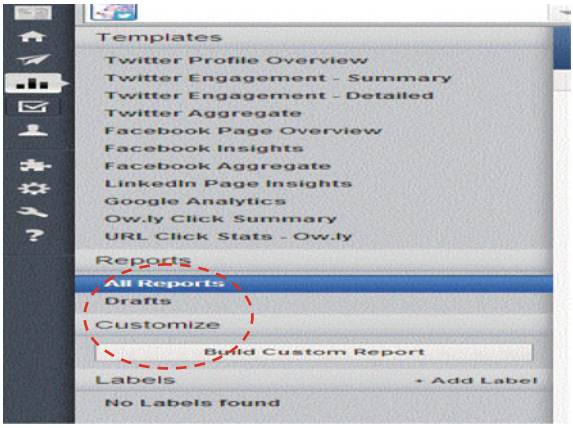
version has limited analytics ability and you will be able to use only a limited number of templates.

To use HootSuite's premade templates, go through the following steps:

Step 1: Click the **bar graph** (Analytics) icon on the left-aligned launch menu (see Screenshot 6.11).
Step 2: You can choose from several report templates available. For example, click on the **Twitter Profile Overview** template.
Step 3: Next, click on the **Create Report** button. Note that if you can have multiple social media accounts configured. You may choose them from the drop-down list.
Step 4: Next, the report will be generated.
Step 5: A report can be printed, saved as PDF or CSV, shared with others, etc., by using the tool bar available at the top right corner of the report.

6.9.2 Creating Custom Reports

Step 1: Click the **bar graph** (Analytics) icon on the left-aligned launch menu.
Step 2: Click **Build Custom Report** (Screenshot 6.12)
Step 3: Click **Custom Report**.

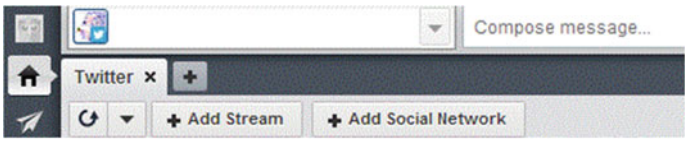


Screenshot 6.12 Creating custom reports with Hootsuite

Step 4: Clicking on **Custom Report** will bring you to the custom report page.
Step 5: Next, click **Upload Image** to upload your logo or an image to brand the report. This is done by locating the image file on your computer, and then click **Open**. You can also edit the details of your organization and type of header in the report.
Step 6: Under **Details** in the top left corner, type the title of your report and a brief description. And under **Email and Scheduling**, click the drop-down menu and select the frequency of distribution.
Tip: You can also have this report emailed to the members sharing this report by clicking on the box, making a check.
Step 7: Next, click on **Add Report Modules** and then click to select module, adding it to your report. Modules with ENT and PRO are only available to enterprise users.
Note: Modules added to your report can be removed by clicking **Remove** in the top right corner of the module on the report.
Step 8: Complete the information requested by that module to achieve the best results. This may involve typing a title and/or keywords, selecting a social network profile, and so forth, and then click **Done**.
Step 9: Click on the **Create Report** button available at the top right of the page. Alternatively, you can click **Save as Draft**.

6.9.3 Monitoring and Analyzing Facebook Data with HootSuite

Step 1: First, you need to add a new tab for the Facebook network. To do so click the **Home (Streams)** icon on the left-aligned launch menu, and then click on the **+**icon (Screenshot 6.13).
Step 2: Name the new tab (e.g., Facebook).
Step 3: Click on the **Add Social Network** button, select **Facebook** from the list, and click on the **Connect with Facebook** button.
Step 4: Type your Facebook email (or mobile phone number) and password, and then click **Log In**.

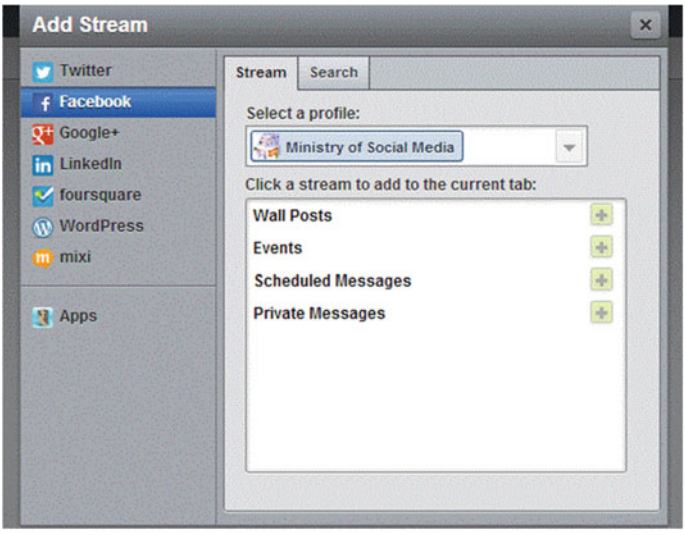


Screenshot 6.13 Creating a new stream in Hootsuite

Step 5: Next, read HootSuite's access to your Facebook account message; click to read **App Terms and Privacy Policy** in the bottom left corner, and then click **Okay**.
Step 6: Read posting permission note, click to select who can see the content you post to Facebook from HootSuite and then click **Okay**.
Note: Clicking **Skip** will prevent you from being able to post to Facebook from HootSuite.
Step 7: Read Page permission note, and then click **Okay**.
Note: Clicking **Skip** will prevent you from being able to manage your Facebook pages from HootSuite.
Step 8: Click to select the timeline, pages, and groups to import. A check mark indicates that the content will be imported; and a plus icon indicates the content will not be imported. When done, click **Finished Importing**.

6.9.4 Adding a Facebook Stream

Step 1: Click the **Home (Streams)** icon on the left-aligned launch menu. And then click the tab hosting your Facebook content.
Step 2: Next, click **Add Stream**.



Screenshot 6.14 Adding Facebook stream to Hootsuite

Step 3: Select **Facebook** and then select a profile that will stream content (in this case, Ministry of Social Media) (Screenshot 6.18).
Step 4: Click the **+** button across from the stream to add. This process can be repeated for multiple Facebook streams.

Similar steps can be repeated for configuring Twitter, Google+, Wordpress, and LinkedIn streams for analytical purposes (Screenshot 6.14).

Chapter 7
Social Media Strategy

Abstract This chapter discusses social media strategy in public sector and emphasizes that social media efforts should be strategically aligned to support existing agency objectives. Topics covered include understanding social media and agency alignment, social media engagement matrix, steps in formulating a social media strategy, and roles and responsibilities of the government chief information officer (CIO).

Keywords Social media strategy · Strategic aligned · Social media alignment matrix · Role of GCIO · Steps in formulating strategy

7.1 Introduction

It is simply not enough to have a social medial channel ready for your agency. Establishing a sound social media presence requires comprehensive social media strategy and planning. Without a well-crafted social media strategy, your government will struggle to get the desired citizens engagement levels and may lose face. Social media engagement efforts should be strategically aligned to support existing agency objectives. This chapter introduces social media and agency alignment concept, social media engagement matrix, the role of government chief information officer (GCIO) in facilitating the alignment and the steps needed to formulate a social media strategy. This chapter touches on the following dimensions.

✓ Understanding social media and agency alignment
✓ Role of government chief information officer (GCIO) and IT management
✓ Steps in formulating a social media strategy.

G.F. Khan, *Social Media for Government*,
DOI 10.1007/978-981-10-2942-4_7

7.2 Understanding Social Media and Agency Alignment

Like any other technology, aligning social media objectives and goals with the objectives of an agency should be the starting point of any social media initiative. If the organizational goal is to network and engage with citizens in a dialog or crowdsource government services, the social media strategy should be designed to facilitate this objective. It may require, for example, designing and implementing a web 2.0 crowdsourcing platform where public services can be crowed sourced (such as adopt a Tsunami siren initiative) or using a Facebook fan page to network with citizens.

7.2.1 Social Media Alignment Matrix

The extent and breath of your social media alignment with agency goals will be determined by variety of factors including availability of technical, financial, human resources, and its potential to achieve agency goals. Aligning social media with agency objectives may require a comprehensive approach like the strategic alignment model suggested by Henderson and Venkatraman (1993). In this book, we use a simplified social media alignment matrix provided in Fig. 7.1. Over the Y-axis of the matrix is "resource availability" which refers to the availability of financial, technical, administrative, and political resources for social media engagement. On the X-axis of the matrix is the impact of social media alignment in terms of its potential to achieve agency goals (or its potential social and economic value). Depending on the two, the variables (i.e., resources availability and its potential) and your social media alignment with the agency goals can fall into four possible quadrants. Your alignment resides in the "highly aligned" quadrant, for example, when political will and administrative, financial, and technical resources are available to establish (and sustain) a social media presence and its potential is high in terms of achieving agency goals. For instance, creating an in-house crowdsourcing platform is technically and financially demanding, but rewarding in terms of the creation of social and economic value. And your social media alignment efforts reside in the "not aligned" quadrant when its potential to achieve agency goals and resources availability is low. Generally, your social media engagement efforts should focus on highly aligned and high impact alternatives. Nevertheless, your agency goals and availability of resources will play important role in determining your engagement depth, and hence the quadrant of interest. For instance, posting a Twitter tweet or Facebook update is financially and technically less challenging (and hence less rewarding) when compared to opening government financial data online, which may require technical and financial resources and political will, but it will be highly rewarding in terms of achieving agency goals.

The social media alignment matrix will guide us throughout the social media strategy formulation process. The engagement matrix is flexible. One can replace

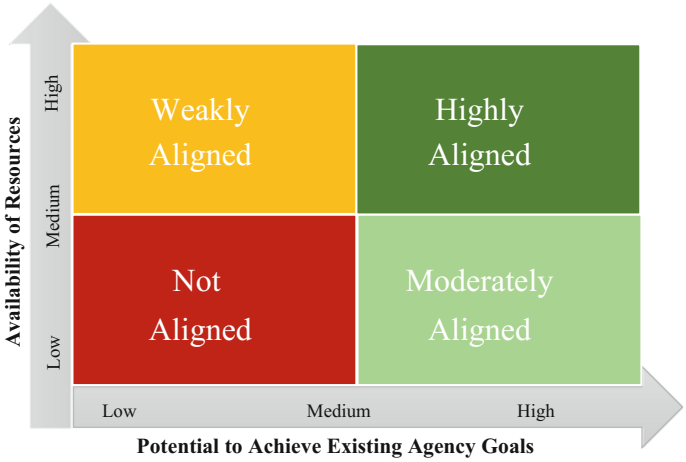


Fig. 7.1 Social media alignment matrix

the variables at both the axis with any other variable of interest. For example, we can place critically of social media engagement (the extent to which the engagement is critical to the agency mission) on the Y-axis and sensitivity of the engagement (e.g., in terms of security, privacy, or politics) on X-axis and determine the extent of your alignment. Your social media alignment, for instance, will be considered "highly aligned" if it is agency mission critical, but less sensitive.

7.3 Role of GCIO and IT Management

Senior IT executives, particularly GCIO (or more commonly known as IT director) plays an important role in envisioning and creating aligned social media strategy. GCIO is a person in charge of managing and aligning information communications technologies (ICTs) to achieve agency wide goals. Like its counterpart in the private sector, the role of GCIO has evolved from a technical guru to an informed leader, communicator, and a strategic thinker. For a sustained strategic IT-agency goals alignment a GCIO should possess the following competences (Dawes 2008).

Strategic Thinking and Evaluation

✓ Business and Policy Reasoning
✓ IT investment for Value Creation
✓ Performance Assessment
✓ Evaluation and Adjustment.

Systems Orientation

✓ Environmental Awareness
✓ System and Social Dynamics
✓ Stakeholders and Users
✓ Business Processes
✓ Information Flow and Work Flow.

Appreciation for Complexity

✓ Communication
✓ Negotiation
✓ Cross-Boundary Relationships
✓ Risk assessment and Management
✓ Problem Solving.

Information Stewardship

✓ Information Policies
✓ Data Management
✓ Data Quality
✓ Information Sharing and Integration
✓ Records Management
✓ Information Preservation.

Technical Leadership

✓ Communication and Education
✓ Architecture
✓ Infrastructure
✓ Information and Systems Security
✓ Support and Services
✓ IT Workforce Investments.

7.4 Steps in Formulating a Social Media Strategy

Formulating a social media strategy is not much different from the overall information technology (IT) strategy of an organization. The purpose of formulating social media strategy is to create rules and procedures to align your social media engagement with the agency goals. Planning an aligned social media strategy should follow a similar strategy formulation process used by IT management function as suggested by Luftman et al. (2004), though some additional steps are needed to account for the unique nature of social media technologies. The following steps will lead to the formulation of a sound social media strategy.

7.4.1 Get Hold of an Executive Champion

For any organizational strategy formulation and implementation the sponsorship of a senior level executive is crucial. Most important factor for success in social-media-based engagement is not technology, but the leadership and commitment of top management. Success is possible only when the transformation is steered through strong leadership: setting direction, building momentum, and ensuring the disciplined execution of an inspiring vision and ambitious plans. A social media executive champion will be someone with charisma and power to enforce social media strategy in the agency. It usually is the head of department or government chief information officer (GCIO). Enlisting the support of champion is crucial for your social media efforts to be fruitful. A champion should have several attributes including, power, vision, resources, willingness to sacrifice, and persistence to support the change (Luftman et al. 2004).

7.4.2 Build a Cross-Functional Team

The first step in formulating a social media strategy is to create a cross-functional team with senior management members from all the departments including IT department. Ideally, this team should be led by a GCIO or IT director. Having a cross-functional team will make sure that all the stakeholders have their say and have the ownership of the social media initiative.

7.4.3 Access Your Culture

As discussed earlier, social-media-based engagement is a governance culture of transparency, sharing, openness, and collaboration facilitated by social media (Khan 2014). It is more than just establishing social media presence (e.g., creating a Facebook fan page or a government Twitter account), but it requires or should be complemented with a STOC culture. Understanding organizational vision, values, norms, systems, assumptions, and beliefs about social media is very crucial. Is your organization ready to embarrass openness and collaboration through social media? What are the organization's assumptions and believes about social media? Implementing a truly open, participatory, and collaborative government will require organizational cultural transformation at all levels. In order to implement strategic initiatives that will change how the organization thinks about social media, it is important to understand the current status of the organizational culture. Understanding an organizational culture and transforming is a very complex task and is beyond the scope of this book. A round table with the team members may provide some clues on the organizational social media culture readiness. In addition, a variety of organizational culture assessment and change tools are available in

market that can be used to access and highlight the need for a culture change. For example, the Organizational Culture Assessment Instrument (OCAI) is free tool for diagnosing organizational culture (developed by professors Robert Quinn and Kim Cameron) and Culture Builder Toolkit developed by Corporate Culture Pros. The bottom line is that with the cultural assessment you want to make sure that organization is ready to embrace social-media-based governance and has the necessary vision and will to leverage it.

7.4.4 Review Your Current Social Media Presence

Prior to formulating a social media strategy, you need to document your current social media use and presence. You may start by requesting the team members their current social media status and by conducting a search for social media pages representing your organization. The best way to do it would be arranging small interactive seminars. Your objective is to find out all the officially sanctioned and unauthorized social media outlets including, blogs, wikis, fan pages, and twitter pages using your organization name. For example, you may use topsy.com to search for social media profiles representing your organization. You can also employ SWOT (Strength, Weakness, Opportunities, and Threats) analysis to determine your current social media landscape. Having documented your current status will help you streamline your social media presence. This activity will become as a basis for your organizational "As-Is" state and understanding your current social media use strategic positioning. This will also provide the initial idea about the current social media culture of the organization.

7.4.5 Determine Objectives

Having understood the current stage of the social media presence, the next step will be to create a list of objectives and goals that you want to achieve through social media engagement. With a clear idea of what you want to accomplish with social media, you are likely to put together a sound social media strategy. Clearly defining your goals and objectives is important as different social media goals require different sets of actions and tools. Ideally, your objectives should be to implement an open, participatory, and collaborative government. Below are some commonly identified objectives by governments.

- To share government news, alerts, and updates through main stream social media platforms including Twitter, Facebook fan page, and YouTube Channel.
- To implement a participatory platform (e.g., blog) where citizens can submit ideas and suggestions, and thus providing them an opportunity to participate in policy making.

- Increase awareness by disseminating information on social media platforms.
- To implement a crowdsourcing platform where public services can be crowed sourced (such as adopt a Tsunami siren initiative)
- To open government data such as financial reports and plans through an interactive Web 2.0 platforms.
- To attract citizens by driving traffic from social media platforms to government websites.
- To network and engage with citizens for a dialog.

Each department may have different goals and objectives to be achieved through social media, creating a broader social media policy will make sure each department has its say. The social media engagement matrix introduced earlier can be used here to determine the ease of achieving an object against its impact.

7.4.6 Aligning Social Media Goals with Agency Goals

As mentioned earlier, aligning social media goals with agency goals is vital. In addition to each goal being specific, realistic, and measurable, it should be aligned with the existing agency goals and strategy. If the organizational goal is to increases citizen awareness by disseminating information on social media platforms, the social media strategy should be designed to facilitate this objective.

7.4.7 Develop Your Content Strategy

Establishing a social media presence is the easy part, sustaining it is the real challenge. Developing a sound content strategy will make sure that what to post, when to post, and how to post. Content strategy is tied to your goals and only the contents that support your goals should be developed and posted. A sound content strategy should at minimum answer the following questions.

1. What type of content to post to social media? E.g., news, updates, alerts.
2. How often to post the content? Daily or weekly?
3. Who will create the content?
4. Is the content approved by the agency?
5. Who will response to the follow-up comments, suggestions, and comments?
6. How will the feedback be handled?, etc.

Again depending on your goals the content strategy will vary. For example, opening government financial reports data online will require a more complex content strategy than posting a news alert. The social media engagement matrix is also useful here in determining ease of developing content against the impact it will have. Social media content strategy can take a form of push, pull, and networking strategy (Mergel 2010). The push strategy is used to push contents (e.g., news and

updates) to the citizens through social media platforms (e.g., through Facebook updates and Twitter Tweets), and pull strategies is used to funnel the social media users back to the government websites. The networking strategy is focused on two way communication and collaborative content sharing and knowledge creation through social media.

7.4.8 Platform Strategy

Platform strategy should detail the type of social media platform to use and utilized to achieve your objectives. Platform selection decision is tied to your agency goals and objectives. If your aim is to share news, alerts, and updates, you may chose existing mainstream social media platforms (as discussed in this book) such as, Twitter, Facebook, and YouTube. However, if you are looking for a platform to crowdsource government services (such as Adopt a Fire Hydrant initiative) or to pen government data, a purpose built Web 2.0 platform must be needed. This will also determine what type of resources you need, as discussed next. Use the social media engagement matrix to determine if the platform strategy will reside in the "very high hanging fruit."

7.4.9 Resource Considerations

Social media engagement can take several forms, from information socialization, to establishing mass collaborations, and to provide tangible online services. The strategy should clearly define what type of engagement you are aiming for. It is crucial to understand your desired level of engagement, as it will determine the type resources (technical, human, and financial resources) you will need to pursue the goals. For example, if your goal is to establish a crowdsourcing platform where public services can be crowd sourced or if you are aiming for opening government data, then the existing social media platforms (Facebook, Twitter, and YouTube) may not provide the right tools. To achieve such objective an advance in-house purposely built platform may be needed. Bear in that in establishing and sustaining even a simple Facebook fan page needs considerable planning and human recourse, financial resources, and technical resources. For example, requires to be regularly updated, citizen's queries needs to be answered, and the data (e.g., tweets or comments) should be extracted and analyzed for better decision-making.

7.4.10 Establish a Social Media Ownership Plan and Policy

Social media ownership plan and policy should outline the relative rights and responsibilities of employers and employees. Ownership plan covers social media

ownership in terms of both accounts and activities such as accounts themselves, individual and page profiles, platform content, and posting activity. Policies related to social media clarify issues related to personal and professional user, trade secrets, intellectual property, confidentiality, etc. Take an example of the Australian Department of Justice's social media policy provided in this chapter. Courtney Hunt (2014) has done a great job of providing social media ownership guidelines. The guidelines touches on the following areas related to social media ownership (Hunt 2014).

- *Agency accounts and profiles*—this part of the ownership plan deals with all the social media accounts and activities such as accounts themselves, individual and page profiles, platform content, and posting activity. Ideally, all the agency social media profiles should be owned by the agency.
- *Individual profiles*—employee's social media profiles are owned by the individuals, but for the sake of agency reputation, governments should provide all employees with guidelines about how they should represent themselves on social media.
- *Contact information*—social media allows people to have multiple contact addresses (e.g., email), and this policy should specify which contact should the employee display on their personal profile. A good practice is that employees including both a personal and a professional address.
- *Contacts*—this policy should specify the rules for social media contacts made during the employment period (e.g., through LinkedIn). For example, recognizing that the contact made is joint property and employees can keep their contacts after leaving the organization. While organization should have an internal system or mechanism to capture the important contacts.
- *Comments*—ownership strategy should also provide policies and guidelines on whether and how employees can comment on a variety of social media platforms. For example, employees when commenting should make it clear that either they are commenting on behalf of the agency or its their personal thoughts.
- *Posting*—what should and what should not be posted to the social media platform is covered here. Clearly defining posting rules can help avoid issue with trade secrets, intellectual property, confidentiality, and defamation, etc.
- *Groups*—agencies may establish policies and guidelines about the kind of groups employees can join or be a member of. Allowing employees to join groups that promote the agency goals is encouraged.
- *Privacy settings*—by setting social media privacy settings guidelines, agencies may encourage employees to set their social media privacy settings in the best interest of both individuals and the agency.

This links (http://www.socialfish.org/wp-content/downloads/socialfish-policies-whitepaper.pdf) further useful guidelines on the structure and characteristics of a sound social media policy.

7.4.11 Select Success Metrics

Success metrics will help you to evaluate social media strategy effectiveness. Clearly defined metrics should be in place to measure the success of social media use in your department. Metrics will help you determine whether social media actually is making a difference in your agency? Depending on the type of social media engagement, success metrics may vary. For example, if the prime objective of the social media use is to engage citizens in a dialog, *comments count* maybe used as a metrics. Or if it is to promote awareness, likes, shares, page views may provide some indicators.

7.4.12 Use Analytics to Track Progress

Social media analytics should be used to evaluate social media presence and to see how your organization is performing. For example, Google Analytics (discussed in previous chapter) can provide a variety of analytical measures. Hootsuite Pro offers advanced analytics and reporting for your social media measurement needs. The important thing to note is that your analytical tools should be configured to match your success metrics and agency goals.

7.4.13 Social Media Strategy Implementation Plan

IT strategies are crafted carefully, but implemented rarely. Strategy implementation plan is an essential part of the social media strategy formulation process. Strategy implementation plans outlines strategies and tactics to put the strategic plans into action. Strategy implementation process can vary from organization to organization and depends on variety of factors including support from senior executives and involvement of members from key departments. Four major barriers to strategic implantation are (Kaplan and Norton 2001):

- 85% of executive teams spend less than one hour per month discussing strategy.
- 60% do not link budgets to strategy.
- Only 25% of managers have incentives linked to strategy.
- Only 5% of the workforce understands the strategy.

The best way to go is to select team members from key departments who understand the purpose of the plan and the steps involved in implementing it. Establish a mechanism to regularly discuss progress reports and let the team members know what has been accomplished. Communicate the plan throughout the agency and clearly specify ownerships, deadlines, and accountabilities.

7.4.14 Periodic Review

In face of rapid technological, political, and social changes the social media strategy should be periodically reviewed. The review will make sure that the initial assumption made about the external and internal factors (e.g., technology, vision, budgets) are still relevant.

7.5 Sample Social Media Policy

Following is the Australian Department of Justice's Social Media Policy.

This policy was developed to sit under the framework for the *Guidance for the use of social media in the Victorian public sector* released by the Public Sector Standards Commissioner.

The intention of this policy is to establish a culture of openness, trust, and integrity in our online activities.

The objectives of this policy are compatible with the *Charter of Human Rights and Responsibilities Act 2006* and the Public Sector Standards Commissioner *Guidelines for the use of social media in the Victorian public sector.*

Scope
This policy applies to all employees and contractors of the department.

General responsibilities as a public sector employee.

Everyone should be aware of their responsibilities under the *Code of Conduct for Victorian Public Sector Employees* (VPS Code of Conduct). This policy is based on sections:

2.2 Remaining apolitical
3.2 Using powers at work
3.4 Official Information
3.5 Public comment
3.9 Public trust
5.3 Work resources
5.4 Open to scrutiny
6.1 Fair and objective treatment
6.2 Privacy and confidentiality
6.3 Maintaining confidentiality
6.4 Equity and diversity.

Compliance
Depending on the circumstances, noncompliance with this policy may constitute a breach of employment or contractual obligations, misconduct (under the department's *Misconduct Policy*), sexual harassment, discrimination, or some other contravention of the law.

Those who fail to comply with this policy may face disciplinary action and, in serious cases, termination of their employment or engagement.

Identifying inappropriate use

If you notice inappropriate or unlawful content online relating to the department, or content that may otherwise have been published in breach of this policy, you should report the circumstances via email to: OnlineCommunication@justice.vic.gov.au.

Privacy breaches can also be reported to the department's Privacy Unit on: (03) 8684 0178.

Definitions

Social media

Content created by people using highly accessible and scalable publishing technologies. Social media is distinct from traditional media such as newspapers, television, and film. Social media comprises relatively inexpensive and accessible tools that enable anyone (even private individuals) to publish or access information—other media generally require significant resources to publish information (http://en.wikipedia.org/wiki/Social_media).

Social Media may include (although is not limited to):

➢ social networking sites (e.g. Facebook, Myspace, LinkedIn, Bebo, Yammer)
➢ video and photo sharing websites (e.g., Flickr, Instagram, YouTube)
➢ blogs, including corporate blogs and personal blogs
➢ blogs hosted by media outlets (e.g., comments or your say feature)
➢ micro-blogging (e.g., Twitter)
➢ wikis and online collaborations (e.g., Wikipedia)
➢ forums, discussion boards, and groups (e.g., Google groups, Whirlpool)
➢ vod and podcasting
➢ online multiplayer gaming platforms (e.g., World of Warcraft, Second life)
➢ instant messaging (including SMS)
➢ geo-spatial tagging (Foursquare).

Policy Statement

Professional use of social media

Becoming authorized to comment

- Before engaging in social media as a representative of the department, you must become **authorized** to comment.
- You may not comment as a representative of the department unless you are **authorized** to do so.
- To become authorized to comment in an official capacity, you have to be through a trial usage period on Yammer, gained approval from (at a minimum) your director, and from the Manager of Online Strategy and Communication, Strategic Communication branch via email: OnlineCommunication@justice.vic.gov.au.

Rules of engagement

Once authorized to comment as a department representative, you must:

- disclose you are an employee/contractor of the department, and use only your own identity, or an approved official account or avatar
- disclose and comment only on information classified as public domain information
- ensure that all content published is accurate and not misleading and complies with all relevant departmental and WoVG policies
- ensure you are not the first to make an announcement (unless specifically given permission to do so)
- comment only on your area of expertise and authority
- ensure comments are respectful of the community in which you are interacting online
- adhere to the Terms of Use of the relevant social media platform/website, as well as copyright, privacy, defamation, contempt of court, discrimination, harassment and other applicable laws, and the department's *Personal Information Policy*.

If you are authorized to comment as a department representative, you must not:

- post or respond to material that is offensive, obscene, defamatory, threatening, harassing, bullying, discriminatory, hateful, racist, sexist, infringes copyright, constitutes a contempt of court, breaches a Court suppression order or is otherwise unlawful
- use or disclose any confidential or secure information
- make any comment or post any material that might otherwise cause damage to the department's reputation or bring it into disrepute.

Moderation of department-produced social media

- The site owner must ensure a moderation policy is clear when inviting comments from the public on a department website or social media platform.
- All department website activity (including any social media) must be approved by the department's Website Management Taskforce.

Personal user of social media

Overview

The department recognizes that you may wish to use social media in your personal life. This policy does not intend to discourage nor unduly limit your personal expression or online activities.

However, you should recognize the potential for damage to be caused (either directly or indirectly) to the department in certain circumstances via your personal use of social media when you can be identified as a Department of Justice employee. Accordingly, you should comply with this policy to ensure that the risk of such damage is minimized.

You are personally responsible for the content you publish in a personal capacity on any form of social media platform. When in doubt, you should seek guidance from the department on how to comply with the following obligations.

Where your comments or profile can identify you as a public servant, you must:

- only disclose and discuss publicly available information
- ensure that all content published is accurate and not misleading and complies with all relevant departmental and WoVG policies
- expressly state on all postings (identifying you as a government employee) the stated views are your own and are not those of the department or the government
- be polite and respectful to all people you interact with
- adhere to the Terms of Use of the relevant social media platform/website, as well as copyright, privacy, defamation, contempt of court, discrimination, harassment and other applicable laws, and the department's *Personal Information Policy*.

You must not:

- post material that is offensive, obscene, defamatory, threatening, harassing, bullying, discriminatory, hateful, racist, sexist, infringes copyright, constitutes a contempt of court, breaches a Court suppression order or is otherwise unlawful
- imply that you are authorized to speak as a representative of the department or the government, nor give the impression that the views you express are those of the department or the government
- use your department email address or any department or Victorian Government logos or insignia
- use the identity or likeness of another employee, contractor, or other member of the department and
- use or disclose any confidential information obtained in your capacity as an employee/contractor of the department
- imply you are authorized to speak on behalf of the department, or give the impression that any views you express are those of the department
- use your department email address or any department or Victorian Government logos or insignia that may give the impression of official support or endorsement of your personal comment
- use or disclose any confidential information or personal information obtained in your capacity as an employee/contractor of the department
- post material that is, or might be construed as, threatening, harassing, bullying or discriminatory towards another employee/contractor of the department
- make any comment or post any material that might otherwise cause damage to the department's reputation or bring it into disrepute.

Reasonable/unreasonable personal use

When accessing social media via the department's internet and intranet systems, you must do so in accordance with the Department's *Internet and Email Usage Policy*, which requires you to use these resources "reasonably," in a manner that does not interfere with your work, and is not inappropriate or excessively accessed.

Examples of reasonable use include:

- re-tweeting content from the Justice_Vic account on your own Twitter account
- accessing and posting comments on the Justice network within Yammer (microblog service)
- participating in working groups on the VPS Hub (whole of Victorian government intranet)
- updating Facebook status and posting messages during a lunch break
- departmental resources should not be used to access or post any material that is fraudulent, harassing, threatening, bullying, embarrassing, sexually explicit, profane, obscene, racist, sexist, intimidating, defamatory, or otherwise inappropriate or unlawful
- you should not use the department's internet and computer resources to provide comments to journalists, politicians, and lobby groups other than in the course of their official duties
- it is not acceptable to spend hours using social media that is not related to your work.

Guidance for navigating legal issues

The following is offered as general guidance to assist you in complying with the obligations set out in this policy. When in doubt, seek further guidance from the department.

Privacy, confidentiality and information security

- You should only use personal information obtained in the course of your employment/engagement with the department in a manner consistent with the department's *Personal Information Policy* and *Information Security Policy*.
- You should **not** publish or report on conversations or information that is deemed confidential or classified or deals with matters that are internal in nature.
- For more information on posting material online (in the "public domain"), refer to the *Information Management Policy* section "department information in the public domain."

Copyright

- You should respect copyright laws and fair use of copyrighted material and attribute work to the original author/source wherever possible.

Harassment and bullying

- The department's *Anti Bullying and Workplace Conflict Policy* applies online and in the physical workplace.
- Workplace bullying and harassment includes any bullying or harassing comments employees make online, even on their own private social networks or out of office hours.
- Abusive, harassing, threatening, or defaming postings are in breach of the department's *Anti Bullying and Workplace Conflict Policy*, and may result in disciplinary action being taken.

- All employees are expected to treat their colleagues with respect and dignity and must ensure their behavior does not constitute bullying and/or harassment.

Defamation

➢ You should refrain from publishing material that may cause injury to another person, organization, association or company's reputation, and should seek further guidance if publication of such material is thought to be necessary.

Offensive or obscene material

➢ Material may be offensive or obscene and may infringe relevant online classification laws if it pornographic, sexually suggestive, harassing, hateful, racist, sexist, abusive, or discriminatory.

Contempt of Court

- You should exercise care if referring to pending court proceedings to avoid publishing material that may have a tendency to prejudice those proceedings, in particular, material that will not be part of the evidence in those proceedings.
- You should make enquiries as to any applicable court suppression orders prior to commenting on any court proceeding (whether past or pending).

References

- *Charter of Human Rights and Responsibilities Act 2006*
- *Information Privacy Act 2000*
- Public Administration Act
- Equal Opportunity Act.

Policy status

- This policy was endorsed on 20 December 2010
- This policy is effective from 1 March 2011.

Modification and review

The date the policy is due for review no greater than three years from the date of endorsement.

The General Manager, Corporate Communication is responsible for reviewing this policy.

Further information

Contact Online Strategy and Communication, Strategic Communication Branch for further information about the policy by e-mail: OnlineCommunication@justice.vic.gov.au

Source: Australian Department of Justice Social Media Policy, 2010, http://www.justice.vic.gov.au/utility/social+media/social+media+policy.

Chapter 8
Social Media Risks Management

Abstract This chapter deals with social media risk management. Issues related to social media risks identification, assessment, mitigation, evaluation, and assessment are discussed. Common social media risks discussed include damage to reputation, releasing confidential information, legal, regulatory, and compliance violations, identity theft and hijacking, loss of intellectual property, virus, and privacy issues. Techniques related to securing your social media platforms discussed include, two-mode authentication, strong passwords, and third-party application.

Keywords Social media risks · Risk management · Risk identification · Risk mitigation · Securing social media platforms

8.1 Introduction

In addition to building in-house Web 2.0 platforms, government social media engagement heavily rely on third-party platforms such as Facebook, Twitter, and blogs to disseminate information, network with citizens, and establish two-way communications. However, such engagement also brings a number of security, legal, privacy, and ethical concerns that range from malware, end users rights, free speech, control and compliance, censorship, anti-piracy legislation, intellectual property rights, commercial use, the right to be forgotten, and data ownership. Recent surge in social media security related accidents demonstrate that why governments should protect their social media accounts to avoid embarrassment and loss of potential sensitive data. Critics are of the opinion that social media tools themselves are ineffective and do little to involve citizens in political discourse (Baumgartner and Morris 2010), rather harm democratization as a good (Shirky 2011). Others consider public engagement through social media as an uncharted territory and government agencies generally lack experience and knowledge about implementing social media (Lee and Kwak 2012b). Events such as the WikiLeaks affair have further complicated the social media landscape in government. This

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chapter introduces the security and privacy concerns related to social media use in the public sector and how to manage it properly.

8.2 Social Media Risk Management

Risk in simple words is the possibility of losing something of value such as, intellectual or physical capital. A comprehensive definition of risk is provide by National Institute of Standards and Technology (NIST) which states that "risk is a function of the likelihood of a given threat-source's exercising a particular potential vulnerability, and the resulting impact of that adverse event on the organization." Here we will focus on the risk arising from social media use and define it as the potential of losing something of value (such as information, reputation, or goodwill) due to the use of social media tools and technologies. Despite its benefits, social media possesses some risks which cause concerns and skepticisms regarding the use of social media in the public sector. Engaging through social media introduces new challenges related to privacy, security, data management, accessibility, social inclusion, governance, and other information policy issues (Bertot et al. 2012).

Social media related risks needs to be manage properly both from the policy and technology point of view. To minimize the damage, agencies need proactive rather reactive social media risk management strategy. A simple, but effective way to proactively manage social media risks is through the social media crises management loop (Fig. 8.1) which includes four iterative steps, (1) identify, (2) access,

Fig. 8.1 Social Media Risk Management Framework

(3) mitigate, and (4) evaluate. In the identification stage, potential risks are identified which are then assessed and prioritized in terms of probability of occurrences and impact on the agency in the assessment stage. In the risk mitigation stage, risk mitigation strategies are formulated and implemented. Finally, periodic assessment and reviews are carried out in the evaluation stage of the risk management loop. Below, we discuss each step in detail.

8.2.1 Risk Identification

Risk identification is the process of identifying social media threats in terms of vulnerabilities and exploits that could potentially inhibit your agency from achieving its objectives. At this stage, your goal is to identify potential accidental or malicious risks that can come from within or outside the agency. Recent examples of social media related security accident including, hacking, information leak, phishing, and impersonation are provided in the Table 8.1. Phishing and hacking are examples of malicious outsider attacks. Famous social media platforms (such as Facebook, Twitter, and YouTube) are risker than less famous one (Webber 2012). According a study based on surveys and interviews with 99 professional and 36 companies (Webber 2012), the main social media risks identified were (1) damage to reputation, (2) releasing confidential information, (3) legal, regulatory, and compliance violations, (4) identity theft and hijacking, and (5) loss of intellectual property. Other potential social media risks include, malware, privacy, and social engineering attacks. We discuss these below briefly.

8.2.1.1 Damage to Reputation

Material (information, news, tweet, photo, alert, etc.) posted online (intentionally or intentionally) through social media platforms without the necessary quality control can damage government's reputation. Damage to reputation through social media can result into a loss of public trust and credibility of the government. For example, Philip Brennan, an Australian Northern Territory bureaucrat, created a fake social media profile posing as a former Northern territory teacher and posted damaging comments (this is an example of impersonation attack). This act not only damage reputation and creditability of the teacher, but also of the Education Department where Philip Brennan was a boss when this accident happened. Similarly, consider the example of Bob Parsons, founder domain registration and hosting company www.GoDaddy.com, when he tweeted a video of him shooting an elephant in Zimbabwe while wearing GoDaddy baseball caps. Not only he received an extremely negative backlash from social media users, especially from animal rights groups, this also was bad example of brand reputation.

Table 8.1 Recent social media-related accidents

Target	Type of threat	Examples	Source
Twitter	Hacking	On January 13, the Twitter account for U.S. Central Command was hacked. Using the Twitter account, hacker posted propaganda tweets and classified U.S. government documents over Twitter	http://www.cnbc.com/id/102330338#
Facebook	Hacking	On July 21, 2014, The Wall Street Journal's Facebook page was hacked leading to unauthorized posting of falls news stories on its wall	http://www.databreachtoday.com/wsj-facebook-page-hacked-a-7087
Wikis	Information leak	On 28 November 2010, WikiLeaks (a Wiki-based nonprofit organization) began releasing several classified diplomatic cables that had been exchanged among the U.S. State Department and its consulates, embassies, and diplomatic missions from around the world	http://en.wikipedia.org/wiki/United_States_diplomatic_cables_leak
LinkedIn	Phishing	A cyber-defense specialist at RSA Europe security conference in 2013 used fake LinkedIn and Facebook profiles to pose as an attractive young woman with a MIT degree and several years of experience. Using the profile he successfully penetrated an unnamed U.S. government agency. Within 15 h of creating the fake profiles, he had dozens of LinkedIn connections with the agency employees and contractors and received three job offers from other companies within 24 h	http://www.csoonline.com/article/2134109/malware-cybercrime/employees-easily-tricked-on-social-media-prime-phishing-attacks.html

(continued)

Table 8.1 (continued)

Target	Type of threat	Examples	Source
Facebook	Impersonation	In 2013, Philip Brennan, an Australian Northern Territory (NT) bureaucrat, created a fake Facebook profile posing as former NT teacher, Stephen Ferguson, and posted damaging comments online. The act not only damaged Mr. Stephen's reputation, but also brought embarrassment to the NT government	http://www.ntnews.com.au/news/northern-territory/a-northern-territory-government-bureaucrat-apologises-for-facebook-reputation-damage/story-fnk0b1zt-1227168552263
BuzzFeed/Flicker	Copyright	In 2013, a journalist, Kai Eiselein, filed a lawsuit against BuzzFeed (American internet news media Company) claiming that BuzzFeed infringed his copyright by publishing a photo (he posted on Flickr in 2009) without his permission. Kai Eiselein demanding over $3.6 million in damage	http://www.forbes.com/sites/johnvillasenor/2013/06/22/copyright-infringement-and-photo-sharing-a-new-lawsuit-tests-the-limits-of-fair-use/

8.2.1.2 Releasing Confidential Information

User-friendly nature of social media platform makes is easier than ever to post, either intentionally or unintentionally, confidential information or data over the Internet. Information leak can lead to financial loses, loss of reputation, and citizens' confidence. Two commonly identified information lost risks posit by social media are disclosure of proprietary information and disclosure of personally identifiable information (Thompson et al. 2011). WikiLeaks affair, commonly known as **Cablegate**, is a prime example of proprietary information release over social media. On November 28, 2010, WikiLeaks a non-profit organization that publishes confidential information provided by anonymous sources, began releasing thousands of classified diplomatic cables that had been exchanged among the U.S. State Department and its consulates, embassies, and diplomatic missions from around the world. The cables were uploaded to the WikiLeaks website by an U.S. army social who had access to computers holding the files. **Cablegate** not only put the U.S. interest around the world at risks, but also brought huge embracement to the department. Similarly, confidential information leak can happen unintentionally

(human error) when an employee unknowingly posts sensitive information over social media. For an employee what seems be a routine social media updates may include information, for example, related to a product under development or provide personally identifiable information.

8.2.1.3 Legal, Regulatory, and Compliance Violations

The rapid emergence and uptake of social media technologies brings a number of legal, privacy, and ethical concerns that range from end users rights, free speech, control and compliance, censorship, anti-piracy legislation, intellectual property rights, commercial use, the right to be forgotten, and data ownership. Governments around the world increasing require and place obligations on those who manage and use social media platforms. For example, an Australian company, Allergy Pathway, was fined $7500 by regulator for allowing misleading testimonials to be published on its official Facebook fan page and Twitter profile (Thomson 2011). On the other hand, social media user demands more transparency and control over their personal data. While social media has been a revolution in the way we work, live, and communicate, concerns of interaction with law and policy are now gaining prominence.

8.2.1.4 Identity Theft or Hijacking

One of the common social media risks is organizational identity theft. Studies have shown that social media users can easily be tricked to provide sensitive company information needed to launch a cyberattack. An organizational identity is stolen by creating a fake Facebook fan page or Twitter profile which is then used to post misleading information or for phishing attacks. Phishing scams are designed to steal sensitive information, such as, passwords, social security number, and credit card data by posing as a legitimate entity. For instance, as a part of exercise, a cyber defense specialist, Aamir Lakhani, at RSA Europe security conference (in 2013) used fake Facebook and LinkedIn profiles posing as an attractive young woman and successfully penetrated an unnamed U.S. government agency (Constantin 2013).

8.2.1.5 Loss of Intellectual Property

Intellectual property (IP) lose can happen unintentionally (human error) or intentionally (due to hacking) when a person inside or outside an organization post *trade secret*, *patent*, and *copyright* material over social media. IP refers to something of value created by individuals or corporations. IP is protected under *trade secret*, *patent*, and *copyright* laws. *Trade secret* is any confidential business information, such as a business plan or computer code that gives a company competitive advantage over its rivals. *Patent* is a document that grants the holder exclusive

rights on an invention or process for a specific period of time in exchange of discloser of the invention to the public. *Copyright* is the statutory grant that grants creators of intellectual property with exclusive rights of the property for its use and distribution for a limited period of time. Risk of posting copyrighted material, such as photos, videos, and documents to agency social media channel (Twitter, Facebook, and YouTube channel) is real and significant. Copyright of a photo, for example, is usually held by the person who created it and a permission is needed from the owner of the copyright before posting the photo online. A journalist named Kai Eiselein filed a lawsuit against BuzzFeed (American Internet news media Company) claiming that BuzzFeed infringed his copyright by publishing a photo (he posted on Flickr in 2009) without his permission demanding over $3.6 million in damage (Villasenor 2013).

8.2.1.6 Malware

Social media exposes computer malicious code and malware attacks like any other information technology resource and can provide a new entry point to your agency. Malware is a broader term used to refer to categories of computer malicious code or software including, computer virus, worms, spyware, logic bomb, Trojan horse, executable scripts, etc. *Virus* is a computer code written by hackers to perform malicious actions by attaching to another computer program. Worm is a computer code that performs malicious actions and will spread by itself without requiring another computer program. Trojan horse is a computer program that hides in another computer program and reveals its designated behavior only when it is activated. Logic bomb is a computer code embedded inside an organization's existing computer programs and is designed to activate and perform a destructive action at a certain time or date. Spyware is a computer software that collects information (e.g., email address and passwords) about a person or organization without their knowledge. Social media platforms are vulnerable to scripting attacks, such as, code injection and cross site scripting (XSS) because social media sites allow posting through user generated contents (Shullich 2011). For example, a script injected into a legitimate URL (uniform resource locator) may lead user to a fake, but similar to the target website created for the purpose of stealing user information.

8.2.1.7 Privacy Risks

Privacy is the "right to be let alone" (Warren and Brandeis 1890). It is an individual right to be free from being observed by others including individuals, organizations, and state. The digital nature of personal information (such as, location, email address, and Internet surfing behavior) has allowed for mass collection of personal data by marketers, hackers, vendors, third-party applications, and secret service

agencies, thus posing treat to individual privacy. Significant sensitive and personally identifiable information presents privacy risks are not only faced by the government agencies using on social media platforms, but also the citizens subscribed to their services. Personally identifiable information can lead to identity theft and can also be used for social engineering attacks. Social engineering attacks are non-technical in nature and trick people using social skills to get access to secret information. For example, attacker can trick you to get physical access your computer to install a malicious software or misled you into giving them your account passwords. Similarly, social media can facilitate personal attacks including, impersonation, blackmailing, extortion, and cyberbullying. One of the greatest threats to individual privacy is the location awareness abilities of computer devices [e.g., smartphones, tablets, and personal data assistance (PDAs)]. While it has its benefits, for example, in an emergency situation it can be used to locate victims, it also poses threat to individual privacy by constantly advertising user's location.

8.2.1.8 How to Identify Risks?

The following are some techniques to identify potential social media risks (Garvey 2008; Webber 2012).

- Review previous risks events that the agency has suffered from originated both from social media and other sources.
- Learn from others by analysis news stories, case studies, and reports published by experts and other organization related to existing and new risks.
- Create a social media risk library where all potential risk are listed and updated.
- Talk to social media users inside and outside your agency to identify intentionally or intentionally risks arising from human errors.
- Monitor social media channels for what is being said (by citizens, employees, or other organization) about your agency to identify reputation risks.
- Monitor your agency social media use to identify risks of copyrighted material (such as photos, videos, and documents) being posted by agency employees.

8.2.2 Risk Assessment

Risk assessment is "the process of assessing the probabilities and consequences of risk events if they are realized" (MITRE 2014). The risk assessment process determines the likelihood of a social media risk event that could impact the agency economically, technically, politically, and socially. The potential risks identified in the earlier step are priorities and ranked based on *probability of occurrence* and *impact* on the agency (Garvey 2008).

Probability (**P**) is the likely of occurrence of risk event and can take a value from 0 to 1. Probability, for example, can be assigned to risks events as follows:

- *Certainly to occur* ($P = 1$)—the risks with a P value equal to 1 are the risks that will certainly happen. In other words, we will have 100% chance of occurrence.
- *Extremely sure to occur* ($P \Rightarrow 95 < 1$)—the risks, for example, with a probability value greater than 0.95 and less than 1.0 can be considered as "extremely sure to happened" risks. In other words, they have a 95 to 100% chance of occurrence.
- *Almost sure to occur* ($P \Rightarrow 0.85 \Leftarrow 0.95$)—the risks with a probability value greater than 0.85 and less than or equal to 95 can be considered as "very likely to occur" risks. This can be said to have an 85–95% chance of occurrence.
- *Very likely to occur* ($P \Rightarrow 0.75 \Leftarrow 0.85$)—these are the risks with a 75–85% chance of occurrence.
- *Likely to occur* ($P \Rightarrow 0.65 \Leftarrow 0.75$)—these are the risks with a 65–75% chance of occurrence.
- *Slightly likely to occur* ($P \Rightarrow 0.55 \Leftarrow 0.65$)—these are the risks with a 65–75% chance of occurrence.
- *Evenly likely to occur* ($>0.45 \Leftarrow 0.55$)—these are the risks with a 45–55% chance of occurrence.

As shown in the Table 8.2, in a similar way other probabilities can be assigned.

Impact of a risk event can be characterized as (1) severe, (2) significant, (3) moderate, (4) minor, and (5) minimal. A risk event is considered severe, for example, if it has devastating economical, technological, political, or social impact on your agency. And a risk considered minimal, if its impact are very low or negligible.

Based on the impact and probability, social media risks can be priorities as (1) high, (2) medium, or (3) low priority risks (Fig. 8.2).

- *High priority risks*—are the risks that if happened will have severe economical, technological, political, or social impact on your agency. These are the risks that needs immediate attention and should be managed carefully.

Table 8.2 Risk probability and prioritization assessment

Probability (P)	Chance of occurrence	Priority
$P = 1$	Certainly to occurs	High priority risks
$P \Rightarrow 95 < 1$	Extremely sure to occur	High priority risks
$P \Rightarrow 0.85 \Leftarrow 0.95$	Almost sure to occur	High priority risks
$P \Rightarrow 0.75 \Leftarrow 0.85$	Very likely to occur	High priority risks
$P \Rightarrow 0.65 \Leftarrow 0.75$	Likely to occur	High priority risks
$P \Rightarrow 0.55 \Leftarrow 0.65$	Slightly likely to occur	Medium priority risks
$P \Rightarrow 0.45 \Leftarrow 0.55$	Evenly likely to occur	Medium priority risks
$P \Rightarrow 0.35 \Leftarrow 0.45$	Less than an even chance	Medium priority risks
$P \Rightarrow 0.25 \Leftarrow 0.35$	Less likely to occur	Low priority risks
$P \Rightarrow 0.15 \Leftarrow 0.25$	Not likely to occur	Low priority risks
$P \Rightarrow 0.00 \Leftarrow 0.15$	Certainly sure not to occur	Low priority risks

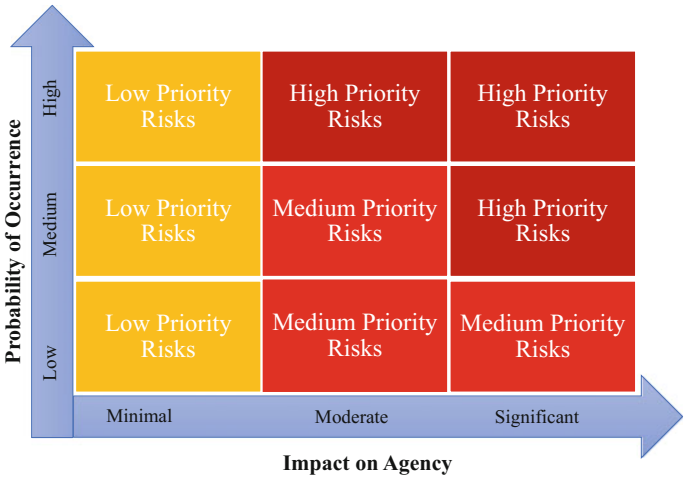


Fig. 8.2 Social media risks assessment matrix

- *Medium priority risks*—are the medium probability risks that if happened will have considerable economical, technological, political, or social impact on your agency.
- *Low priority risks*—are the low probability risks that if happened will have low economical, technological, political, or social impact on your agency.

8.2.3 Risk Mitigation

The risks prioritized and ranked in the earlier stage should be physically, technically, and procedurally managed, eliminated, or reduced to an acceptable level. Dependent on the nature of the risks different strategies should be used, for example, accidental risk posed by agency employees (e.g., posting copyright material online or tweeting some confidential information) can be eliminated by training, awareness programs, and by having sound social media polices in place. Hacking attacks, for example, can be mitigated using updated antivirus systems and by creating an extra layer of security, such as, two-mode authentication technique (discussed later). Typical risks management strategies are

Risks management governance—new governance structures, roles, policies should be created within your agency for properly managing social media risk. The activities may involve identifying and empowering a social media risks management manager, developing an agency-wide risk management strategy, identifying actions and steps needed to implement the strategy, and determine the resource required to mitigate the risks (Garvey 2008). Create a social media risks

management governance structure by involving all key departments including IT, finance, public relations, human resource, legal, and communication. All these components play an important role in identifying and mitigating social media risks.
Training and awareness—providing education and spread awareness on legal such as copyright, intellectual property, defamation, slander, and antitrust issues.
Social media policy—creates a sound social media policy which outline the relative rights and responsibilities of employers and employees (discussed in Chap. 7).
Secure your social media platforms—secure your social media platforms to minimize the impact or likelihood of the risk. The following are some techniques to secure your social media platforms.

- ***Use strong passwords***—to protect your social media accounts (Twitter, Facebook, YouTube, Blogs, etc.) always use strong passwords. A password is considered strong when it is:
  - At least 10 characters long.
  - Has a combination of uppercase, lowercase, numbers, and symbols.
  - Does not include your personal information such as phone numbers, birthdays, name, etc.
  - Does not use common words such as "mypassword," "ilikeyou," etc.
  - Does not use alphabetical sequences (such as "abcd1234") or keyboard sequences (e.g., "qwerty")
  - Is not reused across websites, i.e., your Twitter account password should be unique to Twitter.
  - Is memorized or kept in a safe place, if written.

Securing your Facebook account

- *Two-mode authentication*—Facebook's two-mode authentication (login approval as Facebook calls it) is great way to secure your account. It provides an extra layer of security that uses your phone to protect your account. For example, if your account is compromised or someone figures out your password, he/she will still not be able to access to your account unless having a physical access to your phone. Each time when you login from an unknown browser or computer, you will need to provide a security code to access your account (unless you list the device as secure). The security code is only provided to you through your phone via a text message or through a third-party code application installed on your smartphone such as, Google Authenticator application.

Steps: Login to your Facebook account → Go to Account Settings → then click on **Security Settings** → and click on the "**Login Approvals**" option → **Get Started** (Screenshot 8.1).

Clicking on the "Get Started" button will take you through a step-by-step process to enable the two-mode authentication. Note that the codes cannot be text to a landline or Google Voice, so you will need a mobile phone to configure the authentication properly.

Screenshot 8.1 Facebook login approval

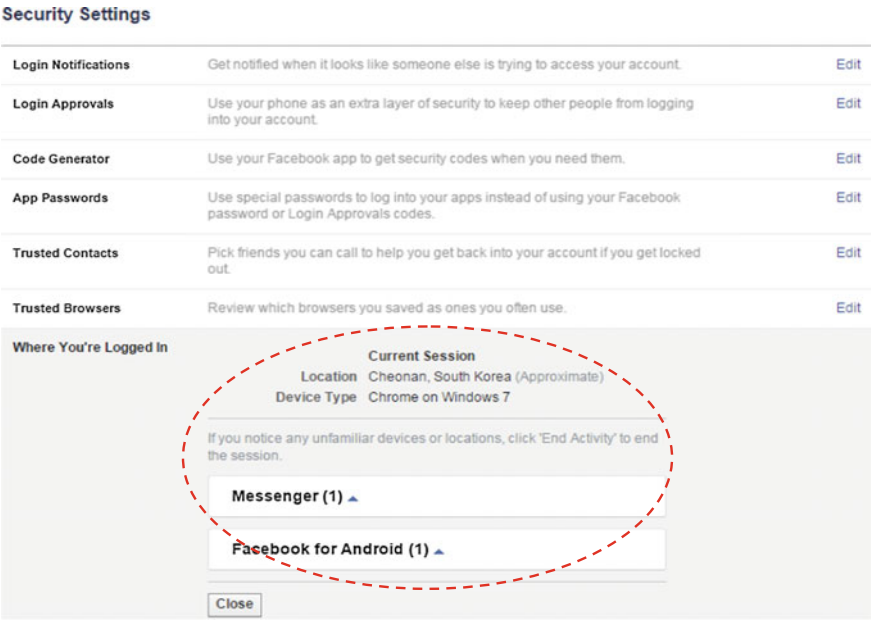
- *Trusted contact*—trusted contact is an account recovery feature provided by Facebook to help you access your account securely through your friends if you have trouble accessing your account. You can select three to five friends to be your trusted contacts who can be reached through means other than Facebook (e.g., phone or email). In case of emergency, you can contact your trusted contacts and Facebook will provide each of them a security code for you with instructions on how to help you. You can then use the codes to recover your Facebook account.

Steps: Login to your account → **Account Settings** → **Security Settings** → **Trusted Contacts** → **Choose Trusted Contacts**.

- *Review your login history*—it is a good practice to regularly review your account login history and location.

Steps: Login to your account → Go to **Account Settings** → then click on **Security Settings** → and click on the "**where you're Logged-In**" option (see the Screenshot 8.2).

Your location is estimated on your public IP (Internet protocol) or address. Bringing your curser over the location will display the IP used to access the account. Make sure the IP address is associated with the organization. The page will also provide information about other devices used to access the account (e.g., Chrome on windows 7 and Android-based device). If you notice any unfamiliar devices or locations, you can end the session by clicking on the "End Activity" button.



Screenshot 8.2 Facebook security settings

- *Login notification*—enable your Facebook login notification, so that you can be notified through email or text message when your account is accessed.

Steps: Login to your account → Go to **Account Settings** → then click on **Login Notification** → and select "**Email**" and/or "**Text**" notification option.

The notification email provides detailed information about the login including, the IP address used, location, time, and type of device used to access the account.

- *Disable or Revoke Third-Party Apps*—your information (e.g., friends list and profile) is available to third-party applications (or apps for short) running over Facebook. Third-party apps are developed by people other than Facebook, but have access to Facebook. While party apps improve your Facebook experience (e.g., by allowing access to Wordpress app, your Facebook updates will automatically appear on your wordpress.com blog). However, some of these applications may be vulnerable to attacks or may handle your account information insecurely. Here is how to disable the vulnerable apps.

Steps: Login to your account → **Account Settings** → **Security Settings** → **Apps** → **Edit** → **Disable platforms**.

- ***Use strong passwords***—to protect your Facebook accounts from hacking always use a strong password. See the strong password guidelines discussed earlier. Strong passwords are difficult to hack or guess.

Securing your Twitter Account

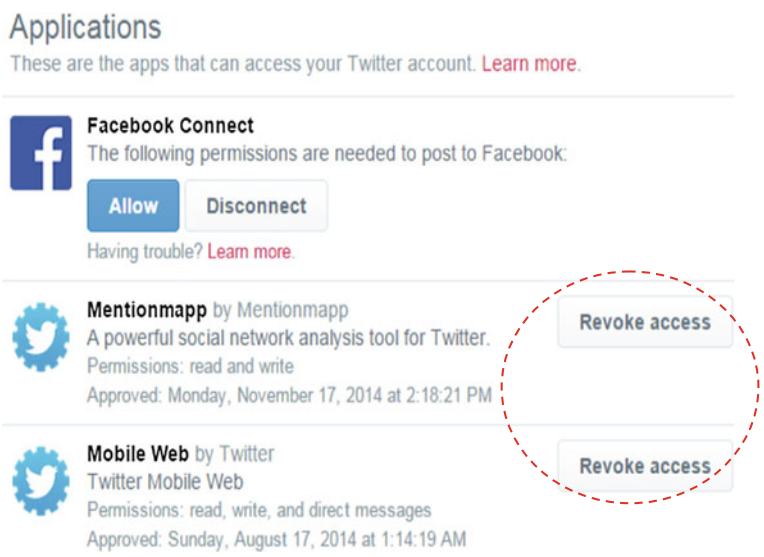
- ***Use login verification***—like Facebook, Twitter also provides two-mode authentication called as login verification. After enabling login verification feature, you will need both your password and your phone to login to your Twitter account. When you log into twitter.com you will receive a text message with a login code or a push notification.

Steps: **Settings → Security and Privacy Settings → Send login verification requests to my phone** → when prompted, click **Okay, send me a message** → if you receive our verification message, click **Yes**.

Before using this feature make sure that you verify your emails, add a phone number, and check that your carrier is Twitter supported. Instructions on how to confirm your email address is provided here https://support.twitter.com/articles/97942

- ***Revoke Third-Party Apps***—Like Facebook, Twitter also provides access to third-party apps. While these apps makes your Twitter experience more convenient. As mentioned earlier, some applications may be vulnerable to attacks or may handle your account information insecurely. Here is how to disable it.

Steps: Login to your account → **Settings** → → **Apps** → you will be provided with a list of Apps that has access to your account → **Click on Revoke Access** (Screenshot 8.3).



Screenshot 8.3 Revoking Twitter applications

- ***Use strong passwords***—to protect your Twitter accounts from hacking always use a strong password. See the strong password guidelines discussed earlier. Strong passwords are difficult to hack or guess.

Securing your blog

The following are some techniques to secure your blog:

- *Two-mode authentication*—go to your blog and click on your avatar (or profile picture if you have uploaded one) available at right up corner of the window → click on the **Account Settings** → then click on **Security** → then enable the **Two Step Authentication** (Screenshot 8.4).

Disconnect third-party Applications—**Account Settings** → **Security** → scroll down until you see **Connection Applications** → click on any unwanted applications that you want to remove → and then click **Remove App Connection**.

Backup your blog—you can back up your blog's content (including posts, pages, comments, custom fields, terms, navigation menus and custom posts, which then can be restored in case of emergency. Here is how to do it.

Step 1: go to your blog by typing its address in the Internet Explorer.

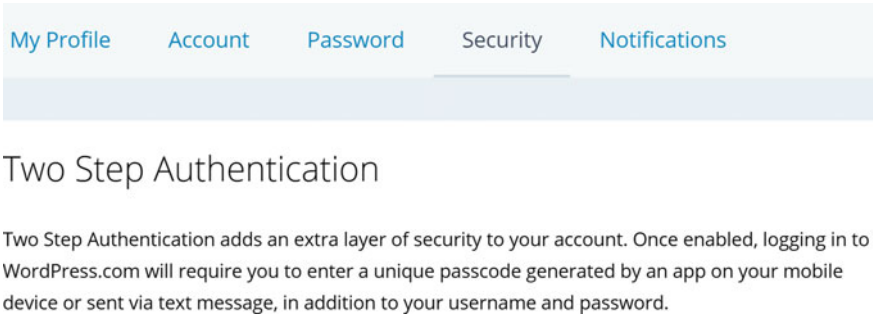
Step 2: Click on the **WP Admin** option. This will bring you to the blog's **Dashboard**.

Step 3: Once in the Dashboard click on the **Tools** available at the lower left corner of the dashboard → and then on **Export**. There are two export option, **Export** and **Guided** Transfer. Select the **Export** option.

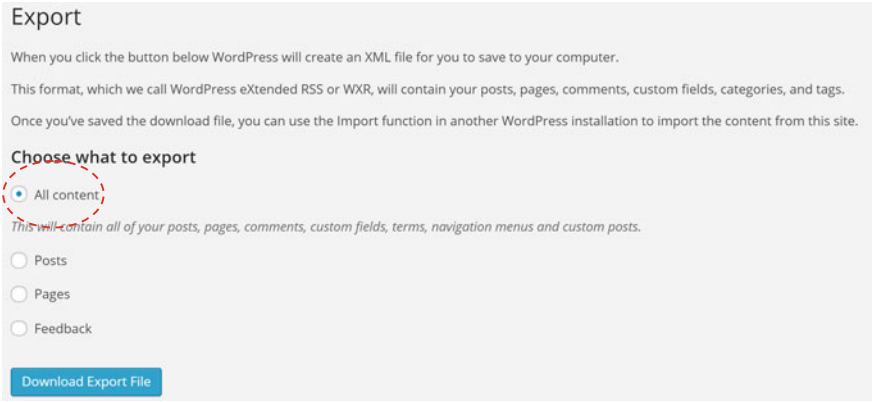
Step 4 → you will be offered **Choose What to Export** option → click on the default **Select All Content** → and click **Download Export file** (Screenshot 8.5). Save the file in a secure location. It can be restored when needed.

To restore the blog content you have exported earlier, use the following steps:

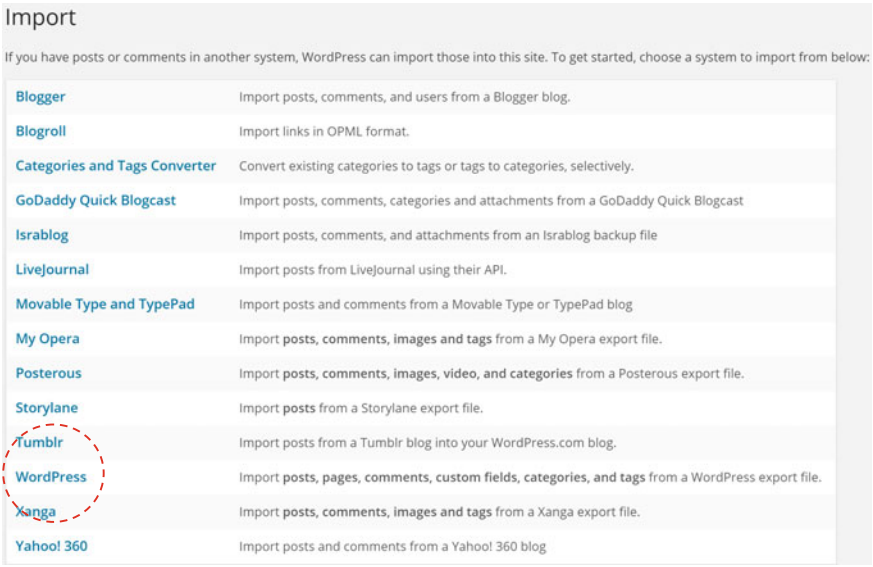
WP Admin → **Tools** → **Import** → from the available systems select **WordPress** → **Chose the file** you have saved to your computer → the click on **Upload file and Import** (Screenshot 8.6).



Screenshot 8.4 Enabling Two-Step Authentication on WordPress



Screenshot 8.5 Exporting Blog contents



Screenshot 8.6 Restoring blog contents

Use strong passwords—to protect your blog accounts always use a strong password. See the strong password guidelines discussed earlier. Strong passwords are difficult to hack or guess.

Duel authentication can also be applied to other social media platforms including, Wikis and YouTube.

8.2.4 Risk Evaluation

Social media risks management is a continuous process. In face of rapid technological, political, and social changes the social media risks should be periodically reviewed. Your risk management strategy, procedures, techniques should be continuously updated in response to the emergence of new social media platform, social changes, and potential new risks. The continuous evaluation and monitoring effort will make sure that the initial assumption made about the external and internal risks are still relevant.

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Index

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