



‘Opportunities and challenges of e-Governance: A reality or science fiction for the Chinese Government?’

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Abstract

Business and civil society have rapidly adopted information and communication technologies (ICTs) into their lives. Information technologies have become part of China’s economic development through a rapid and evolving market for the Internet and E-Businesses. However, central and local management work still relies primarily on traditional communication forms. The purpose of this paper focuses on Chinese trends in e-Governance. A conceptual framework is first set out defining concepts. Conceptualizing e-Governance in the People’s Republic of China in such a way that raises a number of questions. E-Governance comes with new opportunities, but it also entails many challenges. This paper explores the opportunities of ICTs, particularly improvement of public services, access to information, policy development framework, and citizens’ engagement. It also looks at three main challenges: data, societal and political. The paper then presents some concluding remarks.

Opportunities and challenges of E-Governance: A reality or science fiction for the Chinese Government?

A digitalisation era: from private to public sector

From smoke signals to pigeon, from telegraph to telephone, from letters to emails: communication channels have evolved as societies continue to transform. Whether we use email, Skype, forums, blogs, e-commerce, Google Earth, or eBay, the Internet has become part of many peoples' life in one way or another around the world.

Globalisation, increasing interdependence among States and the Internet attract international controversy and complexity concerning information sharing, management and policy. It is undeniable that information and communication technologies (ICTs) are evolving rapidly, and digital information is expanding. At present, public records are issued in digital format; hard copies and papers are outdated, and even personal contacts occur with lower frequency. Daily and common forms of communication make use of e-mail through the Internet or mobile devices, such as smart phones, laptops and tablets; these forms of communication are used by all sectors of society.

Information is everywhere in public organisations and information resources are embedded in all public functions. Hence, every public manager is an information manager. ICTs have modified the information access and flow from a vertical, centralized and closed model into a horizontal, decentralized and open network. With the increasing use of ICTs –e.g. micro-blogging–, communication between governments and citizens (G2C), and among citizens themselves (C2C), has also shifted. Blurred and permeable boundaries of information exist now within interconnected networks and levels.

Influenced by the outside world and pushed by Chinese society, technology initiatives have forced Chinese Government to develop a policy framework to tackle access to information and digital divides. E-Governance involves the transformation of wages: from a few websites and transactions of information among researchers, governments and individuals, to a large volume of data sharing through an enormous variety of sources. The Chinese Communist Party (CCP) is now implementing e-Governance initiatives in the country: engagement in virtual electronic worlds is a must. Nevertheless, dealing with E-Governance issues is a huge and complex task for national and local institutions and agencies. While there are opportunities available in the present context, there are also many concerns.

As John Bertot, professor and Co-Director of the Information Policy and Access Center (iPAC), stated during his speech at the International Symposium on the Future of e-Governance held at Fudan University (Shanghai, on 27 and 28 October 2013), there is a new era of governing in the People's Republic of China (PRC). The new era entails multiple opportunities, such as improvement of public services, access to information, citizens' engagement in governance, and policy development. In turn, it also brings some challenges, such as complexity, vulnerability and security issues, which are divided into three categories: data, societal and policies. Consequently, ICTs should encompass certain principles and foundations regarding big data, information storage and management, dissemination/disclosure, etc.

Looking at the Chinese context, several questions can be raised: Why are ICTs a fashion killer trend in the country now? To what extent is the Chinese Government able to use the Internet and to take advantage of ICTs tools? Can the CCP deal with challenges coming up from e-Governance?

The aim of this paper is to present e-Governance opportunities and challenges in the PRC. Content is organised into six sections. Section 2 provides a theoretical framework with a view of synthesizing key concepts. Section 3 describes the growing of the ICTs market and on how the

Chinese online activity is booming, which forces the Chinese Government to look at it. Section 4 analyses key opportunities that result from e-Governance, while section 5 focuses on the challenges. Section 6 presents some concluding remarks.

2. Conceptualising E-Government and E-Governance

In the early 1990s, a brand new concept appeared among American scholars of ‘E-Government’. ‘Reinventing government’, ‘electronic government’, and ‘people online instead of in line’ were the prevailing ideas. E-Government concept was defined by utilising information technologies and the Internet for better delivery government services to citizens, more efficient management and improvement of interactions between government and citizens (Sprenić *et al.*, 2009). Marthandan and Tang (2010) expanded the concept as follows:

“The e-Government allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), e-Government aims to make the interaction between government and citizens (G2C), government and business enterprises (G2B) and interagency relationships (G2G) more friendly, convenient, transparent and inexpensive. Electronic Business (e-business) refers to a broader definition of Electronic Commerce (e-commerce), not just buying and selling but also servicing customers and collaborating with business partners and conducting electronic transactions within an organizational entity. As Information Technology (IT) advances dramatically with new features and capabilities, it is moving away from the data processing era to a strategic Information Systems (IS) era, finding a solid berth in enterprises, governments and other organisations”.

In the new millennium, where ICTs are developing faster than ever, E-Government concepts do not consistently correlate with the ground-breaking progress that new ICTs encompasses. A new concept was thus stamped, E-Governance, which includes a broader definition. E-Governance, meaning ‘electronic governance’, uses ICTs at multi-governmental levels, public sector and beyond (Howard, 2001). Moreover, it is not simply limited to the public sector, because it includes management and administrative policies, in addition to procedures in the private sector (Shailendra *et al.*, 2007, p. 2).

According to Dawes (2008), e-Governance compiles five major objectives: a policy framework, enhanced public services, high quality and cost-effective government operations, citizens engagement in democratic processes, and administrative institutional reform. The UNESCO provides the following definition:

“E-Governance may be understood as the performance of governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities. E-Governance is generally considered as a wider concept than e-Government, since it can bring about a change in the way how citizens relate to governments and to each other. E-Governance can bring forth new concepts of citizenship, both in terms of citizen needs and responsibilities. Its objective is to engage, enable and empower the citizen”. (UNESCO, 2005)

Zheng Lei¹ and other Chinese scholars explain that e-Governance comprises the use of ICTs to support public services, government administration, citizen engagement, and relationships among citizens, the private sector and the State. Zheng Lei also adds that e-Governance offers five interconnected objectives, which can be summarised as follows: high quality and cost-effective government operations, enhance public services, citizen engagement, updated information policy framework, and administrative and institutional reform. This paper will thus follow the UNESCO’s definition and will look at the components described by Zheng.

3. Fast-growing ICTs market forces to look at E-Governance

A rapid and evolving market for the Internet and E-Businesses is booming at the moment. Information technologies have become part of China's economic development. However, central and local management work still relies primarily on traditional communication forms. Young citizens are quickly embracing social media while adults are incorporating the Internet more than ever into their daily business and personal communication needs. The Chinese Internet market is opening a new business window of opportunity for economic growth.

The flourishing of the Internet in the past 17 years has not yet arrived to an impasse. On the contrary, Chinese online community has become the largest in the world. The China Internet Network Information Center (CINIC, 2013) data showed that by mid-2013 Internet users were about 600 million. This is 26.56 million more than figures taken six months earlier (December 2012), which represents nearly 40% of the total population. Despite this large amount of users, the PRC does not appear among the top 50 countries with the highest Internet penetration rate. According to the Internet World Stats (IWS, 2011), in order to be on the list, over 65% of the total country population should use the Internet; the number one is Iceland with 97.8% population penetration rate, Germany and South Korea rank 16th and 17th respectively with 82.7%, Japan at 80%, and in the 49th position is Spain with 65.6%. New digital era has evolved at various speeds and to different degrees in the PRC.

Social media presents a new way of communication among citizens providing original and user-friendly services for all citizens. It enables the creation of networks and groups easily and without consideration of the boundaries of age, gender, geography, nationality or status. Chinese social media's earliest footage was in 1994. Like mushrooms that have quickly grown across the country, social media has transformed itself from online forums to instant messaging. It took the first blogging site 10 years to appear on scene, followed a year later by social-networking sites with chatting capabilities, such as *Renren*. Chinese social media channels are still increasing in popularity across the country, becoming an indispensable communication channel for individuals and businesses.

Currently, *Weibo* (微博) –Chinese word to define micro-blogging– is the main social media network, which has become very popular in the last 5 years in the PRC and it is a spread-share information tool. It was launched in 2009 before the ruling party knew what it was, ignoring what its impact would be and, of course, without having previously developed adequate regulation. Since 2010, micro-blogging has started to be wildly used, with a growth estimate of 23.5% by the end of 2011. A year later, the total number of micro-blogging users reached 309 million, representing 54.7% of the total of *netizens* (Zheng, 2013). *Weibo* platforms have become a communication channel to express public opinion, as well as to receive and publish news. The two most popular micro-blogging platforms are *Sina Weibo* (新浪微博) and *Tencent Weibo* (腾讯微博), launched in August 2009 and April 2010, respectively. *Weibo* has received a great welcome by citizens since it has completely shifted their way of communication.

A ground-breaking tendency is the widely use of micro-blogging through mobile devices: 65.6% of *Weibo* users accessed through mobile Internet applications at the end of 2012 (Zheng, 2013). The growth of Internet access via mobile platforms has contributed to a large use of social media by citizens, the private sector, and even government agencies, aggregating to 464 million citizens accessing the net via smartphones or other wireless devices (mid-2013) (CINIC, 2013).

The current most famous and fashionable Chinese mobile app is *Weixin* – 威信, Wechat. It was launched on 21 January 2011 and by December 2012 users amounted to 270 million (CINIC, 2013). This application has been compared to Whatsapp, but it is not technically a replica version. It offered voice-recorded messages before its Western counterpart. It purveys all Whatsapp's functions and also includes many new features, such as scan QR code, finding friends nearby, online games, 'drift bottle' –where users can broadcast chats anonymously, share thoughts, opinions

and feelings with anybody—; and also ‘moments’, or Friend Circle –where users can post news, pictures, and messages, in addition to the fact that this content can be discussed and shared among friends (similar to Facebook). *Weixin* has become the key mobile integration platform, providing an API to third parties. It is a transceiver; that is, users are able to have two-way communication with open API, official accounts, enterprises accounts, and even jump into other APPS from the chat window.

In March 2013, Jon Berkeley (2013) announced that China’s e-commerce market had overtaken America’s (Berkeley, 2013). It is foreseen that by 2020 the Chinese market will become larger than in America, Britain, Japan, Germany, and France together. Internet users’ increasing and spending large proportion of time online support the expansion of e-business: from the giant *Alibaba* to *Sohu*, *NetEase* or *Taobao*. This business sector has generated some of the wealthiest entrepreneurs in the country, such as Jack Ma –the creator of *Taobao* and then *Alibaba*. For instance, 200 billion dollars were spent (without counting travel and food) by 200 million online shoppers in 2012. In March 2012, the two biggest video online companies in the PRC, *Youku* and *Tudou* (优酷土豆), merged transforming them into one single enormous company, which has become the second largest video site in the world after YouTube. This company has a market capitalisation of 2.8 billion dollars and it is estimated that 370 people watch online videos (Williamson, 2013).

The CCP is forced to intervene when e-Governance is becoming a fashionable trend in the country, but it is just used by a small portion of society. The CCP applies to e-Governance, because as a manager, it has to serve all citizens regardless of income, location, education, etc. Citizens are not simple customers in the context of e-Governance. However, introducing changes in bureaucracy is always complicated, even more in the Chinese context.

The CCP’s priority is to improve government operations (改善政府运营, *gǎishàn zhèngfǔ yùnyíng*). Attempts to digitise the Chinese government’s administration have been noticed with efforts at both the central and local level. In 1994, the General Office of the State Council of the PRC launched the ‘Three-Golden Projects’,² an information system that expanded into the present ‘Twelve Golden Projects’. These projects are all related to governmental IS application areas, such as water resources management and flood control, real-time statistical information flows, etc. Most of the progress is concentrated in the area of public services and improved management. In other words, the focus areas of e-Governance for the CCP are not an enhancement of democracy and citizens’ engagement. Pragmatism for an efficient management of services in a modernized society is at the core of CCP’s e-Governance.

The use of *Weibo* by citizens and private sector has forced government to disclose information, provide public services, and interact between government and citizens. By the end of 2012, the total number of Chinese Government micro-blogging accounts is expected to soar to 176,000 (CNAG, 2011). Although Chinese government agencies and institutions are gradually more likely to employ social media networks, social stability is still a key factor in its adoption and usage. It is clear that methods of communicating information have changed from that seen in traditional official publications; being more familiar and relatable to regular citizens. In addition, information is constantly updated, faster than traditional communication means.

As in *Weibo*, governmental public accounts can be found in *Weixin*. The purpose of using *Weixin* is to publish information and communicate quickly with citizens. Official accounts normally use images to disseminate information; such information relates to public services, like transport facilities, traffic accidents, new regulations content, weather, etc. An interesting fact is that citizens are able to interact with these officials’ accounts by sending text or voice messages. For the time being, the speed of development of these accounts is still in an initial level, as well as the efficient usage of them; replies to comments are usually slow (Yin, 2013).

ICTs developments in Chinese market, based on world technology initiatives but pushed by Chinese entrepreneurs and society, have forced the CCP to look into the digital world. Market is

evolving faster than Government is able to adapt; however, it is training to adopt technology into all sectors of society.

4. Opportunities of the digital era with Chinese special characteristics

ICTs brings with it vast opportunities for all sectors in society. Due to space constraints, this section focuses on four main prospects in accordance with Chinese context, which are the following: improvement of public services, access to information, citizens' engagement on governance, and policy development.

4.1. Improvement of public services

Improving public services is one of the most important elements for Chinese government. The CCP focuses on providing access, convenience and choice to citizens and businesses seeking information and services from the public administration. Hence, a shift from organisational perspective to customer orientation occurred.

The value of E-Governance for individuals is described as saving citizens' time and avoiding complicated situations when dealing with public administration and acquiring different services for daily work life. Improvement of services is directly linked to communication infrastructure and telecommunications systems. Since 1970s both matters are growing in range and quality, but the speed has been fast in the last decade. During the State Council meeting on 13 January 2010, the country's tri-network integration trial (三网融合, *sān wǎng róng hé*) was approved (Li, 2013). The aim is to build a unified network to deliver mobile TV, telephone and Internet services, which will overcome duplication of investments, improve media industry and provide cheaper service to customers. The project was first implemented as a trial in 12 cities between 2010 and 2012. The second phase of the project started in 2013 until 2015: it should be implemented cross-nationally.

An example from a local government, although from the largest city of the country, is the Shanghai Government Data Service Portal, which opened in October 2013; it is one of the most successful local projects at providing public services.³ This centre is related to the project of open data and Smarter Urban Dynamics and has a counterpart in New York City. It follows four main principles: integration, inclusion, customisation, and case manager as a service agent. The activities carried out in the centre are varied, such as utility bills, certificates, licenses, taxes, fines, tickets, shots, appointments with public officials, etc. The centre could be perceived as doing small administrative tasks, but indeed it also offers major and often bureaucratic documents, such as sales and purchase of house property licences, marriage and divorce records, birth and death certificates, etc.

One of the big achievements of the Shanghai centre is the AIRNow-I project (空气质量日报预报, *kōngqì zhìliàng rìbào yùbào*), launched in 2010.⁴ This service is the first one of its kind providing compressible air quality data to citizens. One of the main areas addressed by this product is concerned with how to provide the general public with data in an attractive and understandable way. The public approach used in this project encompassed different channels to communicate the information including: a website, radio and TV, and smart phone applications such as *Weibo*. This amalgamation of communication channels provides a rapid, efficient, and updated delivery service to citizens.⁵ The project is considered markedly successful because it offers information to Shanghai citizens, and impressively, the project has been expanded and replicated in other provinces and municipalities, such as the Yangtze Delta area. Government agencies from these municipalities are now sharing data necessary to carry out the project. It still needs, however, to improve some aspects, for instance standards, data collection and monitoring systems.

Following this example, during 2012, AQI programme was launched in Shanghai by the local government showing pm2.5 conditions around the country.⁶ AQI programme is online and available

to all the general public. This project probably appears as a consequence of discrepancies between Beijing Government and American Embassy about disclosing air quality information. The phenomena of cities ‘besieged’ by garbage and ‘airpocalyptic’ cities have become hot issues. Chinese society is reaching an intoxication peak as a trigger for actions calling for social rights, such as health, clean air, and drinkable water.

Improvement of public services is also produced at local level. The ‘51ganjie’⁷ is a project developed by the local authority of Suichang County (遂昌县) in Zhejiang Province. With the slogan ‘new rural e-business service platform’ (新农村电子商务服务平台, *xīn nóngcūn diànzǐshāngwù fúwù píngtái*), the local government wishes to facilitate access to daily products through the online market. To this end, the project has service stations connected to a unique web portal. This type of service offers cheaper products to local citizens and delivery to more isolate regions.

Important questions concerning the improvement of public services remain to be discussed: what new capabilities must city governments have to fully embrace ‘big data’ as a tool for city government? And how can central government best prepare future mayors and local authorities to understand the potential of ICTs to ensure that cities also benefit?

ICTs offer new possibilities for the CCP, because it lacks human resources and does not develop the administration institutions at the same level across the country. Public services are improving at central and local level with different projects, including Internet and broadcaster connections.

4.2. Access to information

A second advantage of ICTs concerns citizens’ access. Communication networks are developing nationally and cross-nationally, facilitating individual citizens, groups, organisations, etc. to interact among them. Increase transparency and openness concepts have become key issues in e-Governance.

As a great step towards increasing access to information and thus bolstering transparency, the Central People’s Government’s website was developed.⁸ The website content is relatively well presented. Improvement, however, could be made regarding service functionalities and transaction capabilities failing to provide the quality services demanded by citizens. On top of such limitations, a lot of information is not revealed or is obsolete; content is presented as an image booster rather than a tool to better serve citizens, as remarked by Professor Zheng Lei (see endnote no. 1).

Regarding information disclosure, the Ministry of Environmental Protection (MEP) published a circular about improvement of environmental information disclosure in 2013. The circular pointed out that local authorities must disclose information about administration reviews and approvals for related projects, as well as data about potential hazardous construction projects. As a relevant fact, the circular mentioned that information about public companies has to be included and, especially, that a list of all enterprises with substandard environmental practices must become public. Finally, local authorities are called to disclose information about environmental emergency cases and put in force mechanisms for future responses (Xinhua, 2013). Moreover, the MEP has also issued a new requirement for environmental impact assessment (EIA) reports to be included: a summary version with less technical wording and reader-friendly for the general public. The requirement included a mechanism to assess risks of social instability, which meant that impacts on local citizens had to be included in the EIA report. It is the first time that an official guide includes this matter (Feng and Wang, 2012).

ICTs involve Web 2.0 technologies, which includes excellent tools for interactions and two-way communication between government and citizens. This created a major drive for government agencies to use micro-blogging to disclose information, provide public services and interact with

citizens. Agencies and institutions are required to disseminate information in a timely, equitable, efficient and appropriate manner. They establish and maintain Information Dissemination Product Inventories and need to evaluate and determine the most appropriate methods to capture and retain records on both government servers and technologies hosted on non-government hosts (Zhang, 2013).

ICTs thus offer citizens and government a new approach to create transparency, to promote accountability and to empower citizens. Public disclosure information indeed provides a promising complement to conventional regulation through penalisation or pressure –as an absent or ineffective regulator role– to polluters.

4.3. Citizens' engagement and participation on governance

Citizens' access opportunity is related to citizens' engagement and participation. E-Governance brings the opportunity of creating a two-way interaction among multiple stakeholders. It is then connected to accessibility and usability to information, public discourse, public interaction with government, and even public consultation. Chinese young generations are more independent and influenced by Western individual values, catalysing a change in cultural understandings, preferences and demands. Communication networks are evolving nationally and cross-nationally, facilitating interactions among individual citizens, business groups and governmental institutions.

Social media present a new way of communication among citizens by providing original and user-friendly services for all citizens. They enable the creation of networks and groups easily and without consideration of the boundaries of age, gender, geography, nationality or status. Social online networks require low level of expertise, making them very easy to use for all type of citizens. Upload, download and share information become simple. This technology is experimenting a period of booming growth.

Chinese citizens have understood how useful social media tools are. They have provided people with a mechanism to monitor and improve transparency, inform on situations of injustice, etc., through the sharing and posting of pictures and messages. For instance, a young woman was in a car accident with a police vehicle after which the police officer left the scene without filing a report. The girl took a picture of him and his number plate, and posted it immediately onto her social media networks. The public response was so quick and numerous that local authorities had to arrest the officer and ask him to take responsibility for the collision (Dai, 2013). Web 2.0 tools provide a fast speedway of communication no matter where users are based.

Another example related to security and identity concerns was that of Beijing metro cards. Initially, the Beijing transportation agency designed transportation cards with a purpose of providing information about prices –the Beijing metro uses a different tariff according to the distance. However, through this card it was possible to track any person who used it, showing information such as their location, time, schedule, etc. Citizens protested through social media channels, which forced the government to replace this card system because of its encroachment onto their privacy.

Chinese environmental platforms, such as Green-Web, Environment Beijing or Chinese Environmental NGOs online (中国环境 NGO 在线 , *zhōngguó huánjìng zài xiàn*), promoted online discussion about the first draft of the '*China's Environment Protection Law*' during the public process consultation. The consultation was defined as a great victory in terms of public participation at the highest level of decision-making. The second draft included key wording according to many *netizens*, such as guiding principles referring to protection as a top priority (预防为主 , *yùfáng wèizhǔ*), encouraging public participation (公众参与 , *gōngzhòng cānyù*), and assuming polluters' responsibilities (污染者担责的原则 , *wūrǎngzhě dānzé de yuánzé*) (Yu, 2003).

Social media users' behaviour shows that information revealed online can be spread around the country in one day. *Netizens* are aware that even if their posts are removed –they cannot from private *Weixin* accounts–, the fact of being online 24 hours is enough to reach out at least half of the country's population. Growing phone Internet users and social media networks facilitate faster spread of information among large numbers of the population. Humanitarian emergency response and disaster relief exemplify better the opportunity of new ways of communication and the potential that this technology brings with it.

Zheng highlighted optimistic opinions coming from Google, Yahoo, and Microsoft representatives about free access of information, and consequently, citizens' participation in the country (Zheng, 2007a). These IT spokesmen believe that the Internet itself has the potential to transform the PRC and that the use of Internet will continue to improve free access to information in the long-term. This is an assertive stance that will need further analysis in the coming years. It may still be too early to affirm that the Internet will improve access to information and increase citizens' engagement. In turn, it is already possible to observe the fast-growing use of social networks showing varied views and sharing a great volume of information, which may not be well perceived by the CCP.

4.4. Policy development framework

Rapid ICTs development took place without prior notice. The CCP had not issued any regulation prior to Web 2.0, social online networks or e-business appearance, but as the market has claimed to launch them, legal vacuum emerged without specific legislation in the sector.

In order to address new security items, technology management, information access, etc., regulations have to be enforced; Chinese law is slowly strengthening. New legislation, namely the 2008 State OGI (政府信息开条例, zhèngfǔ xìn xī kāi tiáolì, 1 May 2008) has been enacted to ensure wider access to information and increased transparency; courts encounter both political and social pressure in accepting OGI cases.⁹ Since the regulation was officialised, the Shanghai court has experienced a large increase of cases in court with a total of 1,152 in 2011 (Liu, 2013). Moreover, it is evident that the rule of law is changing and evolving in China. New generations are more independent and influenced by Western individual values, catalysing a change in cultural understandings, preferences and demands.

Information policy framework specifies the rules and conditions under which information is gathered, used, protected, and shared by government, individuals and private sector. In environmental questions, information regulations are the beginning of an accountable system, which allows to access to environmental data and monitor developments. According to the 10th principle of the 1992 Declaration of Rio de Janeiro, the right to information is fundamental to give way to the right to participation in decision and public management. In order to address new security issues, such as technology management, information access, etc., regulations have to be enforced; Chinese law is slowly strengthening.

China's environmental policies concerning public participation are still weak. Two recent policies were launched in this category: *Provisional Measures on Public Participation in Environmental Impact Assessment* (EIA), 22 February 2006; and Environmental Information Disclosure Measures in *'China's Environment Protection Law'* (环境保护法修正案, huánjìng baohù fǎ xiū zhèng'àn), 11 April 2007. The legislative basis for public participation in environmental management and right to access environmental information are founded on the publication of previous mentioned laws, as well as the 2003 *'Law on Cleaner Production Promotion'* (清洁生产促进法, qīngjié shēngchǎn cùjìn fǎ).¹⁰

Progress on policy development related to multiple sectors and matters linked to e-Governance is taken place. However, since the topic is relatively new in the country, implies many different thematic areas, requires a large innovative expertise, and entails different administration barriers, the ruling party is slowly progressing to adapt and issue the adequate regulation to the new requirements.

5. Concerns, fears and challenges go hand-in-hand with ICTs

Despite of all the great potentials that ICTs have introduced in the PRC, it also brings some challenges and concerns. In order to examine these challenges this section is divided into three categories: data, societal and policies challenges.

5.1. DATA challenges

Data management is predicted to be a major challenge for governments in the next decade. It has been a question left off the hook, but this is a key issue. E-business and e-Governance store and manage a vast amount of open, and big data; this data is continually evolving. New and collaborative digitised products appear on the markets every day.

From this environment, concerns emerge about who owns all this data, who keeps it and for what purpose, how is data reinvented as technologies become obsolete, and where does agency responsibility end in insuring data. Data is usually compiled and managed by private sector, which is basically registered in the United States (U.S.) and operates under its own legislation. For instance, the most used Internet servers and domains are registered under American corporations. Hence, the harmonisation of governments, private sector and NGO policies is a must.

Undeveloped data protection exists, for example, online services such as the purchasing service *taobao* (淘宝) –an Internet portal where products are sold without intermediaries or taxes, similar to *AliBaba*. As commented by Zheng Lei, in his 2013 interview (see endnote 1), many users may not know that the company can retain all information - credit card, phone number, features of purchased goods, etc.– for ten years. Again, such issues give way to questions of data management, privacy and accessibility.

Data quality, authenticity and stewardship are elements to bear in mind too; for instance, *mashups* create entirely new data products, which are usually unverified. Data should be evaluated through a life cycle perspective taking into account data quality. Bertot (2010) pointed out the lack of international homogeneity and coherence as a consequence of inexistent metadata and data documentation standards in different communities. Multiple standards are in use.

5.2. Societal challenges

Within the societal challenges category different matters should be tackled. The first one that arose regards the protection of information resources and infrastructure; a second one concerns citizen's access to information and equity, and last, but not least, involves citizens' engagement.

a. Protection of information

The protection of information resources and infrastructure from fraud, errors, hackers, and cyber attacks is one of the main fears about new ICTs. General public opinion, particularly in Western countries, constantly brood about privacy and identity. Privacy is understood as a component of trusted interactions in digital communication, commerce, financial matters, among other issues. Personal identity and the ability to authenticate and protect it are issues pertaining to the design and delivery of personalised services and requirements for electronic commerce. Personal information

implies to surveillance and trust access to systems, services and information. Because Web 2.0 technologies are controlled by users and operate outside established structures, they are more complex to regulate and thus the protection of citizens becomes a complex and difficult task.

In recent months, big public opinion scandals are rampant in the media. Scandals were related to protection of electronic documents, multimedia materials, private communication, transactions, etc. One of the loudest during 2013 year was the NSA spying case. The unit –known as the Special Collection Service (SCS)– is composed of an elite corps run under US intelligence agencies NSA and CIA operating all around the world. SCS agents are able to watch and intercept cellphone signals and millimetre-wave signals, as well as to locate people of interest. These elite corps often use encrypted communication programmes, such as ‘Birdwatcher’, to monitor communications in foreign countries (Appelbaum *et al.*, 2013). Evidences exposed by all major European communication media show that this American unit recorded data from around 70 million phone calls per month just in France (Reuters, 2013); even German Chancellery Angela Merkel’s own cellphone was monitored. Discussion of arguments for European official reactions or (non-) actions falls beyond this paper scope, but some critics have cast aspersions on US intelligence agencies. The case illustrate irrevocably that privacy is dependent on data storage and management.

Nevertheless, the on-going debate concerning privacy and identity is not mirrored in China. One possible explanation is that Chinese society is more profit-oriented than ideological-oriented; the majority stand up for commodity. While European citizens are very concerned about providing private and identification information such as personal ID numbers, many Chinese citizens do not consider such acts as problematic or an intrusion on their private lives.

b. Citizens’ access to information and transparency

Access to information refers to state government documents, performance of programmes and services, as well as to the ability of citizens to provide input to policy makers. Access to information also involves transparency and accountability of actions from governmental institutions, business sectors, and even individual citizens.

Data collection and protection have experienced certain drawbacks in the Chinese context. Respect of rules and norms is a complex issue due to *guanxi* networks and linkages. Moreover, the judicial system is not independent and judges are not always well prepared to deal with new cases. There are no records of data, e.g. property licenses and access to these records is highly restricted. Although many contentious topics are openly discussed, such as corruption cases, environmental problems, etc., there are still some sensitive issues remaining. Those that might affect national security and internal stability, according to the ruling party, are routinely avoided.

Access to information and transparency is related to people’s right, which reflects the disparity of rights between citizens in China. A common example is that of the migrant workers or ‘floating population’ in China and their *hukou* status –household registration permit system. Those holding a rural *hukou* but move to the cities for better life opportunities will enjoy limited rights and access to services. Cases handled in the Chinese courts also reflect access to information and transparency barriers. During the International Symposium of the Future of e-Governance at Fudan University, Professor Liu (2013) presented some examples that illustrate this situation. For instance, the case of Zhang Yan versus Housing Administration of Tianjin Municipality (2002) dealt with a housing license whereby the agency referred to an unpublished ‘interior rule’ to prohibit records of private estate from disclosure. The first trial was dismissed, and during the appeal the judge said that ‘the license was searched but not found’. The case of Wang Shuchun versus Haerbon Administration for commodity prices (2003), however, is an example of the opposite result. The first and final trial already requested records of the newly built affordable house; it was stated that the record should be disclosed. In this instance, the court defended Mr. Wang’s right-to-know.

Despite the fact that new legislation has been issued, such as the 2008 State OGI, limitations still exist concerning the permanence of the alleged record, for example, state secrecy, conflicts between laws, ‘lawful interests’ (合法权益, *héfǎ lìyì*) or ‘reverse OGI litigation’ (反信息公开诉讼, *fǎn xìnxi gōngkāi sùsòng*) (Liu, 2013). When discussing ‘freedom of information’ (FOI), Chinese scholars point out that this term can easily be confused with the term ‘flow of information’ (also FOI). Therefore, the Chinese academic community has come to refer to this concept as ‘open [of] information’ (OOI). Challenges raised by OOI practices in the country exist at different administrative levels in terms of cooperation and collaboration. After the 2008 State OGI Law was implemented, the percentage of fully disclosed documents reached its peak with 51% in 2009, but since then they has declined to a mere 34% in 2012 (Xiao, 2013).

The ‘flow of information’ in China suggests that access is the rule and secrecy is the exception. The CCP has different attitudes towards OOI: the CCP takes into consideration the degree of responsibility, the level of knowledge and the methods used. At the same time, the relationship between different streams of information is linked to government openness. It is evident that reactive disclosure, internal and external disclosure, and proactive disclosure still need to be improved in China.

When discussing access to information and freedom of access in the PRC, Western public opinion immediately thinks of censorship for decapitating the voice of any opposition and for blocking a large amount of webs, such as Facebook. The CCP defends its practices under the principle of minimising undesired political consequences; based on social and cultural concerns, for instance, the protection of teenagers, efforts are made to combat terrorism and reduce the dissemination of pornography. The censored websites are described as containing harmful and illegal information, which are in violation of Chinese law. The Internet control policy is operated through ‘a large nation-wide intranet built with four state-controlled nodes connecting to the outside world’ (Zheng, 2007a). There are also blocking and filtering technologies, and also domestic websites, which apply their own self-censorship. The ruling party thus exercises pressure on multinational firms –Google, Yahoo, and Microsoft– to comply with Chinese laws when doing business in the country (*ibid.*). There are also concerns raised when information disseminates through the Internet to countries with more restrictive speech and information regulations.

Public criticism of the lack of transparency in Chinese Government operations and decision-making has been growing in recent years. During the past decade, Chinese citizens perceived that corruption cases, waste of public funds and resources, and an unsustainable gap among regions and income groups are increasing. Nonetheless, citizens’ complaints involved other governance issues, such as air quality and pollution and health problems, which are in daily social media posts. During November 2013, comments posted in *Weixin* accounts reflected those complaints and they were verbalized in questions like the following:

“Should we or should we not strike for our healthy environment?”, “Why should we put our lives in danger under the present conditions of harmful environmental pollution by working for our country? Should we look for a way to strike in order to obtain our government’s attention?”¹¹

The challenge of access to information is linked to the concept of equity. The successful use of ICTs depends on the access and acceptance of ICTs among citizens. Much has been said about the Chinese urban and rural gap, which is translated into a gap between the information ‘haves and have-nots,’ and the concern that inequities existing among citizens will be reproduced or even exacerbated in the information age.

Governmental agencies and institutions have to consider disparities of access and how those without Internet connection can access important information too. Indeed the needs of a diverse population must be met. The ruling party needs to improve efforts of information outreach to large

sectors of the population. For this purpose, awareness campaigns must be put in place to explain to citizens how to obtain information and how to access certain public services. For instance, migrant workers described as being in a vulnerable group were perceived as disadvantaged when implementing the new electronic purchase system to buy train tickets. However, many of them already use smart phone devices, hence the question is that of informing them on how to use these new public service tools.

c. Citizens' engagement

Regarding the use of new ICTs tools, there is still a lack of general public awareness and engagement. Taking into consideration Chinese elderly and rural residents with less access to Internet and information, the amount of people using new ICTs technologies, Web 2.0 tools, and consuming online services in absolute numbers is still low compared to the amount of total Chinese population. At present, most of the *netizens* are urban citizens younger than 35 years of age.

The CCP priorities are to build and regulate the infrastructure for public services through broadband deployment, municipal wireless systems and the regulation of telecommunications. While some efforts to improve e-participation have been made, for example, opening social media accounts, sharing specific information and replying citizens enquires, citizens are not able to participate in decision-making processes and they seldom express their opinions on sporadic consultation processes.

New ICTs tools and Internet may threaten the CCP and its unique opinion by revealing different or unpleasant information. The increase in the number and visibility of discontent public opinion generates confronted opinions among members of the ruling party. The conservative side of the party believes that social media and Web 2.0 technologies facilitate negative opinions, de-legitimize the government and favour social unrest, such as riots or the colour revolutions. For example, 2012 Jiangsu and Sichuan protests about environmental pollution have been magnified out of all proportion and described as replicas of the Taiping revolution. This fear is probably the cause behind the Supreme People's Court and the Supreme People's Procuratorate latest decision 'popular posts'. Internet users who post rumours or comments forwarded them more than 500 times and viewed them more than 5.000 times, as well as messages leading to mass protests will cause the author three years in prison (Zhai, 2013).

The opposition to the ruling one-party argues that the CCP has increased the machinery of control over Internet with the aim of maintaining social stability. It has become more intelligent increasing the number of cyber-police, tracing content and users, even using social media. Some comments from Chinese *netizens* living in the U.S. pointed out that Government's use of new technologies, or the citizens complaint system, such as the Chongqing one, are within the control of society, since they serve as instruments of tracking possible 'dissidents'. These comments follow into conspiracy theories in which it is hard to prove the veracity with facts, but in any case they show a certain degree of the citizens' lack of confidence in their government and how they perceive their limitations in *Chinanet*.

The evident conclusion about information online and rumours is that the use of technology requires a degree of expertise, not only when manipulating but also when scrutinizing the quality and veracity of the information. For instance, social media networks entail the so-called 'show effect' concern. This challenge refers to users' maturity to select the information analytically and to use it appropriately. The 'show effect' brings another challenge with it, the 'water army', which is a group of Internet users posting specific information for their own purpose or interest. To this purpose, public opinion would be mislead and manipulated to benefit a specific interest group. Government would then have more difficulties to recognize the 'real' public opinion. Consequently, the potential benefit of government and citizens' dialogue in the net could be spoiled.

5.3. Political challenges

The CCP had attempted to improve its accountability and performance with the OGI Regulation; however, several internal limitations exist: legal, institutional and administrative. Rapid developments in ICTs bring both economic and social changes. The CCP actions follow changes as a response, but these actions do not necessarily anticipate changes. Therefore, the lack of adequate and effective regulation is a major concern.

Regarding legal barriers, one of the most common is the low legal status. Looking at the case of the OGI Regulation, the State Council passed it because the procedure is simpler and faster than enacting a law. As a result, it is not a law. In addition, OGI Regulation contains ambiguous clauses that lead to large room of interpretation, particularly referring to implementation of the regulation itself (Zheng, 2007b). Other obstacles appeared when existing laws and new legislation are conflicting, e.g. Archives Law Social media opinions and Web 2.0 sites' impact on government decision-making. Another example is the Information Policy Law and Administrative Procedural Law, which contains clauses restricting the disclosure of information. At the same time, legislation is limited in certain domains without an adequate regulation, such as the lack of laws for privacy protection.

Regulation of social media platforms, e.g. *Weixin*, does not exist. The CCP just made an official decision expressing that it is possible to use this network. This case was polemic because mobile phone companies are state-owned enterprises who were losing revenues with this new competitive firm in the market. Despite Chinese telecommunication lobby groups, the Chinese Government did not limit or prohibit its use; in fact, they pointed out the potential for added value in this service.

The CCP has experienced other difficulties when developing e-Governance. Institutional barriers are commonly reflected in highly bureaucratic systems. The Chinese administration lacks vertical and horizontal independent oversight. The boundaries among the administration, the legislation and the judiciary system are blurred too. On top of that, the local government is understood as a branch of the central government, an issue that is linked to the specific administrative barriers. In addition, differences between regional authorities reflect the degree of implementation of national legislation, the willingness to disclosure information and the capability to offer public services online. The cause of inadequate capability is due to project cost, human resources skills, technology knowledge, process, and cross-agency coordination.

6. Concluding remarks

The world is currently experimenting the second generation of digital open government. ICTs are evolving rapidly in the world and in the PRC too. Technology initiatives have pushed the CCP to use digital devices, to provide public online services and to develop a policy framework for addressing new opportunities and challenges that come with the new digitalised era.

E-Governance can lead to changes in wage levels. The application of e-Governance means that the CCP uses ICTs to enhance a policy framework: public services, high quality and cost-effective government operations, citizens' engagement and administrative institutional reform. Despite the strong political and hierarchical influences within the PRC, the high rate of economic growth may shed some light on citizens' engagement and access to information and adoption of technology. E-Governance remains in a premature stage in the country, but Chinese Government is addressing the shortcomings and improving conditions to increase online services and to modernise the country.

While the CCP has understood that it must engage in virtual electronic worlds, dealing with E-Governance issues is a huge and complex task for any national and local government with Chinese characteristics. Opportunities and challenges appear in terms of large and open data storage, management, monitoring, quality, citizens' access and engagement, transparency, security on privacy and identity, lack of regulation framework, etc. Indeed, different concerns are perceived in

different societies. Data sharing across sectors with diversified data policies and practices should not result in individuals signing onto third party policies. Although broad and open data will have future implications at all levels, there is a need to improve data formatting, standards, and platforms with short and long-term perspectives.

In conclusion, the Chinese Government must take responsibility concerning e-Governance. It should scan open community trends and see how data is being combined and used, particularly with other government information. Policy structures need to reflect the maturity and complexity of 'open/big data' by including an integrative, cross-sectoral and cross-governmental approach. A framework that embraces innovation with social protection is required. For this purpose, all the stakeholders involved in this field should cooperate together to harmonise principles, practices and policies.

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Endnotes

- ¹ See, for instance, a January 18, 2013, interview with Prof. Zheng Lei, Director of the Lab for Digital and Mobile Governance and assistant professor at SIRPA, Fudan University, in Shanghai.
- ² For more information on this issue, see: http://mic.iii.org.tw/english/research/pop_Doc.asp?doc_sqno=1412.
- ³ One can access the Chinese version of the Shanghai portal at www.datashanghai.gov.cn/gds/home!toHome.action.
- ⁴ Through this Project, the Shanghai center discloses information on air quality. For more information see the Chinese version at <http://review.sh.gov.cn/2010/public/caseview.aspx?id=80>.
- ⁵ See a description of these Chinese communication channels, in its original version, at www.semc.gov.cn/aqi/home/Index.aspx.
- ⁶ Through this programme, Air Quality Rankings are provided: 空气质量排行榜, www.pm25.in/rank (Chinese version).
- ⁷ For more information on this project, see www.51ganjie.cn/.
- ⁸ The Central People's Government launched the project in 2007, for more information see: www.gov.cn.
- ⁹ Chinese regulation, in its original version, can be accessed at www.gov.cn/zwgk/2007-04/24/content_592937.htm.
- ¹⁰ The law has been amended between 2006 and 2008, and in 2012. For more information on these changes, see the following two websites: http://english.mep.gov.cn/inventory/Catalogue_Standards/200907/t20090720_156402.htm; <http://www.lawinfochina.com/display.aspx?lib=law&id=9255&CGid>.
- ¹¹ Comments posted on WeChat (微信) by different Chinese users, 8 November 2013. Original comments: “我们是不是应该用罢工的方式争取我们健康的环境”，我们为什么要去冒生命危险在严重污染的环境下为国家工作，我们是不是应该用罢工的方式来引起我们政府的重视”.