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The Contribution of Digital Technology to Citizenship, Accountability and Rights: An Evidence Review

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Abbreviations

CAR	citizenship, accountability and rights
C2G2C	citizen-to-government-to-citizen
IBP	International Budget Partnership
ICT	information communication technology
M4W	Mobile phones for Improved Access to Safe Water
OBI	Open Budget Index
RTI	Right to Information (Act)
UNCTAD	United Nations Conference on Trade And Development
UNDP	United Nations Development Programme

1 Introduction

The use of digital technologies has risen dramatically in the past century, building excitement among governments and technology experts about applying technology to improve accountability, transparency and the effectiveness of authorities (McGee and Carlitz 2013; Zanello and Maassen 2011).

All 193 member states of the United Nations (UN) now have, for example, national websites. Among these, 101 have enabled citizens to create personal online accounts; 73 to file income taxes; and 60 to register a business. For the most common core government administrative systems, 190 member states have automated financial management, 179 have used such systems for customs processing, and 159 for tax management (World Bank 2016).

This readiness is the result of a change in the dynamics of citizenship, accountability and rights (CAR), which demands a rethinking of the roles and relationship between governments and citizens (Gaventa 2002). The use of technology in development, and specifically its potential to close the gap between citizen voice and state responsiveness, holds great promise. Emergent conceptions such as e-governance are considered to have the power to inspire new tools and practices for citizenship, as well as to make existing practices more effective (Michel 2005).

While the use of digital technologies has made communication with citizens much easier, an increased and empowered citizen participation, by which citizens are able to hold governments accountable, remains still a distant dream (Hedde and Svensson 2009; Gigler and Bailur 2014).

This report is an attempt to see the extent to which digital technologies can enable citizens and state agencies to increase the flow of information, challenge powerful interests, increase levels of institutional responsiveness and protect citizens' rights, therefore making it imperative to examine the connection between the role of citizen participation in monitoring the enforcement of rights and in demanding public scrutiny and transparency.

Furthermore, the questions that this report attempts to answer are:

- a. What is the contribution of digital technologies to CAR?
- b. How can the use of technology influence the structuring, restructuring, shaping and reshaping of the relationship between citizens and governments?

As this review looks at the technological contribution to citizen voice and state responsiveness from the perspective of the citizen and their rights, citizen adoption of technologies is the key focus throughout the report.

1.1 Methodology

In order to examine how digital technology has impacted CAR, a review of the most important concepts and definitions involved is required. A literature review defining the meaning of digital technologies, citizenship, accountability and rights was carried out to set the context and provide a foundation for the review. The literature review was divided into two major segments, namely the positive and the negative impacts of using ICT to increase citizen participation and build accountability. This segmentation aided the analysis of the information collected to extract trends.

The methodology used for this evidence review has been primarily the analysis of secondary sources. Specific search and selection criteria were applied in several databases to identify relevant resources.

1. The research was mainly based on journal articles, peer-reviewed articles as well as related books. They were obtained through searches in the University of Sussex library, ELDIS¹ and Google Scholar.
2. The year of publishing was considered an important selection criteria, as sources older than five years could be deemed as no longer relevant. After an initial search showed that not much has been written about this topic *per se*, it was decided to consider for the review sources prior to 2010. Most of the review's main sources are post-2008, with a few between 2000 and 2008 and just some before that time period.
3. The use of certain words and combinations of words yielded relevant results. The search keys included 'digital technology', 'Information Communication Technology', 'ICT', 'citizenship', 'transparency and accountability', 'citizenship and rights', 'citizen participation', 'citizenship and digital technology', 'transparency, accountability and ICT', 'citizen participation and technology', 'digital citizenship', and other related terms.

1.2 Outline

Section 2 provides an overview of relevant concepts on digital technologies, citizenship, accountability and rights, and the relationship between them, as part of the conceptual framework for the evidence review. Section 3 analyses the potential benefits, as well as the challenges and potential adverse effects, resulting from the use of digital technologies to strengthen citizen–state relationships. Section 4 reflects on the circumstances that maximise the impact of digital technologies for CAR interventions, while Section 5 explains the current gaps in the literature. Section 6, finally, presents the conclusions of this evidence review.

¹ ELDIS is an online information service providing free access to relevant, up-to-date and diverse research on international development issues. See www.eldis.org.

2 Important concepts for CAR

To understand the contribution of digital technologies to CAR it is important to first comprehend the nature and characteristics of these concepts. This section begins with a description of digital technologies' capacity to influence different aspects of human life today, and continues explaining concepts such as citizenship, accountability and rights, their mutual interaction, and how they are used in the context of this report.

2.1 Digital technology

At the most fundamental level, digital technologies, also referred to as information communication technology (ICT), are an extension of the way in which humans communicate with each other. Technically, they refer to the process of breaking down all kinds of information, including audio and video signals, into a digital format that can be processed by electronic devices. Since signals are stored in the binary format, immense amounts of information can be compressed on small storage devices that can be easily preserved and transported. Today's digital world revolves around the creation, sharing and usage of information in digital form; data are combined, structured and manipulated, stored and networked, subsidised and sold, creating a profound sense of social connectedness and global community. By reducing information costs, digital technologies greatly lower the barriers to economic and social transactions for individuals, firms and the public sector.

ICTs promote innovation, and by decreasing transaction costs to almost zero, they boost efficiency as existing activities and services become cheaper, faster or more convenient. They have the potential to increase inclusion as people get access to services that previously were out of their reach (World Bank 2016). ICTs play a critical role in development goals because of the way in which they improve the communication and exchange of knowledge and information necessary for development processes (Gilhooly 2003). ICTs are pervasive and have the ability to impact the full range of human activity, therefore becoming a key enabler of developmental goals. ICTs are powerful, if not indispensable, tools for the expansion of development interventions and outcomes (UN Millennium Project 2005).

Digital technologies are also a significant contributor towards speeding up the flow of information and knowledge between government and citizens and transforming their relationships. Terms such as Government 2.0 (Chun *et al.* 2010) and 'we-government' (Linders 2012) have become popular, describing the collaborative nature of governance derived from participation through ICT (Gigler and Bailur 2014). According to the UN Development Programme (UNDP) (Elahi 2009), all countries face the challenge of creating and developing a system of good governance that promotes, supports and sustains human development.

E-governance is regarded as the ICT-enabled route to achieving good governance by increasing the efficiency of government operations, strengthening democracy, enhancing transparency and accountability, and providing better services to citizens and businesses. It integrates people, processes, information and technology to improve public services delivery, access to information and services and public governance (Al-Hujran *et al.* 2015). E-government has become a significant part of the ongoing reform and transformation of governments, enabling the improvement of governments' efficiency and effectiveness (Farelo and Morris 2002; Kuriyan and Ray 2009). Some theorists also see this transformation as more citizen-centred, with technology as a tool in this effort to improve participatory governance (Gigler *et al.* 2014).

The literature on e-government adoption is broadly divided into two streams, which pay attention to its 'supply' or 'demand' driven behaviour (Al-Hujran *et al.* 2015). Here, supply, or push, refers to government-led initiatives, while demand, or pull, signifies citizen-led or citizen-requested efforts. These two approaches help to understand the purpose of top-down introduction of ICT, as well as the user-driven adoption of ICT (Wittemyer *et al.* 2014). This report focuses on the demand side, examining if and how the rapid proliferation of ICT and connectivity raises the capacity to amplify citizen voices to enhance accountability and local ownership.

Innovations in ICT have provided a range of tools that enable citizens to participate in governance at local, national and global levels (Gigler and Bailur 2014). ICTs are creating new venues for making data transparent, accessing information, monitoring, reporting and evaluating services, and engaging citizens and communities (Gigler 2014). Individuals and groups draw on an array of mediums to access and share information, forming a 'communicative ecology' as people make choices regarding the tools that best fit their needs and contexts (Tacchi *et al.* 2009). Technologies vary from community radio, short message services (SMS), mobile phone applications, voice-based reporting, websites and wikis, social media and interactive mapping, to name a few (Avila *et al.* 2010; Bertot *et al.* 2012; Pina *et al.* 2010). According to Wittemyer *et al.* (2014), these tools are adopted following three main approaches, with the aim of improving participation, transparency and accountability:

Collect, analyse and visualise data. There are vast amounts of digital information that, if well managed, can be used to hold governments to account. To exploit this promise of data-driven techniques for governance reform, energy is being directed towards generating and collecting data. Once gathered, data gain meaning through analysis and visualisation, with a growing number of tools devised to this end. To date, the vast majority of cases in transparency and accountability focus on data collection and analysis.

Disseminate information and knowledge. Communicating the significance of data to tell a story that is accessible for citizens is critical for collaborative governance and improved public services. Tools for disseminating information from government to citizen, and for providing easier access to service-related information by citizens, have been leveraged in a variety of efforts to date.

Organise and develop communities. While community organising may traditionally occur through offline strategies, technologies have been integrated into participatory approaches to hasten progress and enhance their effectiveness. Many projects that involve collecting, analysing and disseminating information also include working with communities; however, community-building can be seen more often as a by-product rather than a central approach to reform, perhaps due to the kind of deep, long-term engagement that is required to increase impactful citizen participation and to foster active and vocal communities.

Before moving forward to how digital technologies can contribute towards citizenship, accountability and rights, it is first important to unpack these concepts and also understand how citizenship, accountability and rights interact with each other. Building contextual knowledge, the next section of this report is a literature review of CAR.

2.2 Citizenship and rights

For some academics citizenship is a legal concept, a political status or role conferred on people. Legal definitions specify the extent to which citizenship is defined in constitutions and laws that prescribe the qualifications, rights and obligations within a particular government's jurisdiction. However, more pluralistic approaches re-conceptualise citizenship to take a less state-centred, and more actor-oriented approach, arguing that citizenship is attained through the agency of citizens themselves, founded on their diverse sets of

identities (Gaventa 2002). Many theorists have championed the notion of 'active citizens' who participate in a range of policy or institutional settings (Head 2007). Globally, the impetus for this re-orientation comes from a more 'society-centred' rethinking of social democracy in the late 1980s. Nationally, there is a growing awareness of the complexity and inter-connectedness of many problems, and the need to share responsibility for resolving these complex social and developmental issues. Locally, there is an increasing appreciation of the benefits of involving local citizens in identifying problems and contributing to the solutions (Head 2007).

According to these views, citizenship concerns a relationship between members of the public, in political, economic and civic terms, and the communities in which they live and the states within which their democratic lives are played out (Coleman 2001). Citizenship is also considered a substantive ethical and sociological statement, which comprises notions of community, duty and civility (Roberts 2004). Such an approach is grounded in the attainment of rights, from civil, political, economic, social and cultural rights to the right to participation itself. Citizenship is about the 'right to have rights', and the right to participation in struggles for the creation of new rights (Gaventa 2002). In this light, Lister (1998) argues that to be a citizen in the legal and sociological sense means to enjoy the rights of citizenship necessary for agency and social and political participation. To act as a citizen involves fulfilling the potential of that status. Lister reframes participation in decision-making as a fundamental human and citizenship right that is a prerequisite for making other rights claims; citizenship as a right enables people to act as agents (Lister 1998).

2.3 Citizen participation

Citizen participation helps to create and strengthen citizens themselves, increasing their feeling of political worth and knowledge – assuming that more informed and efficacious citizens will ultimately benefit the larger society. Citizen participation has been a key tool for protecting and deepening political rights (Gaventa and Barrett 2010). For Hermes (2006), public opinion formation, in terms of a shared analysis or agenda for a common future, is the key ingredient of citizenship and 'citizen agency' is the activity of people's social and political participation accompanied by the capability to influence the decision-making process. For Arnstein (1969), it is the redistribution of power that enables the 'have-not' citizens, presently excluded from the political and economic processes, to be deliberately included in the future. Her definition is more inclusive as she recognises that citizens come in many different stripes and colours and addresses the need to focus on all types of citizens as exclusion subverts the concept of citizen participation.

Citizen participation is considered not only the purpose – or the ends – of development and democracy, but also the most effective means to promote these values (Hermes 2006). Citizen participation enables citizens to increase their civic skills and become more competent when they participate in public decision-making. Participation contributes to the development of civic virtues, to citizens' feeling of being public citizens and part of their community. As a consequence, they may also feel more responsible personally for public decisions, contributing to a greater legitimacy of decisions. As Rousseau argues, participation plays an important role in producing rules that are acceptable to all (Michels 2011).

It is important to recognise that structured opportunities for citizen participation, whether provided through official channels or created through direct group action, may be weak or strong, narrow or broad, episodic or continuing, and that there is a spectrum of possible participatory forms (Prieto-Martín 2014). In view of the diversity and inequalities among groups, it would be unrealistic to expect equal capacity for participation in new participatory governance arrangements across all sectors of organised and unorganised interests (Head 2007).

For citizen agency to work at best, Hermes argues that people need to be in good health and educated, have confidence and rights secured, be able to access information and express themselves in order to make things happen and fight against injustice and unfairness (2006). Citizen participation should overcome biases of elite domination, there should be better informed officials and citizens with stronger dispositions and skills, more institutional accountability, with greater 'justice of policy' and effectiveness, and increased popular mobilisation in other spheres outside the mini-publics (Fung 2004). The authorities should thus play a central role to enable participation and community feeling (Boyte 2008).

This report explores the impact of digital technologies on CAR, understanding citizenship as the 'agency' of the citizens, and the different ways in which they exercise voice through new forms of deliberation, consultation and/or mobilisation to inform and influence larger institutions and policies. This involves citizens moving beyond being 'users and choosers' of projects, to being 'makers and shapers' of their own development (Cornwall and Gaventa 2001).

2.4 Transparency and accountability

Over the past decade accountability has emerged as a key means to address both developmental failures and democratic deficits. Largely, accountability refers to the process that holds individuals, agencies and organisations responsible for executing their powers to a certain standard (Gaventa and McGee 2013). The argument favouring accountability states that through greater accountability the cracks of corruption and inefficiency will be repaired, public spending will be channelled more effectively and development initiatives will produce greater and more visible results (Gaventa and McGee 2013).

Joshi (2010) identifies the following key elements of accountability: setting standards, acquiring information about actions, making decisions on the appropriateness of actions, and identifying and sanctioning unsatisfactory performance. Schedler (1999), for his part, splits accountability into two main components: answerability and enforceability. The former refers to the responsibility of the account providers (public officials) to provide information about and justification of their actions, while enforceability refers to the capacity of accounting agencies (inclusive of the general public) to impose penalties or consequences on those power holders who fail to answer accountability claims.

The traditional ways of delivering accountability are often referred to as 'state-side' or 'supply-side', comprising mechanisms such as elections and intra-government controls. These are increasingly found to be limited in scope and effect. In response to the diverse inadequacies of institutional accountability, an array of mechanisms has emerged in which citizens can hold states to account (Peruzzotti and Smulovitz 2006; Joshi 2008). These 'demand-side' initiatives, on the other hand, also defined as 'social accountability', supplement or displace traditional forms by encouraging citizens themselves to engage with more powerful actors located either within the state or associated with the state, which are social rather than political, institutional or bureaucratic (Gaventa and McGee 2013; Fox 2007). Mechanisms of social accountability can be initiated and supported by the state, citizens or both. In most cases, these accountability mechanisms have a bottom-up, demand-driven character, and are linked to an institutional commitment to respond to citizens' requests, for example for specific kinds of information or documents which otherwise would not be accessible.

Transparency initiatives include 'any attempts, by states or citizens, to place information or processes that were previously opaque in the public domain, accessible for use by citizen groups, providers, or policy makers' (Joshi 2010). Gaining transparency and the right to information is critical to enhance the capacity of citizens to hold states to account (Newell

and Wheeler 2006). Citizen participation mechanisms, moreover, depend on the diffusion of information and a certain level of transparency to be meaningful (Prieto-Martín 2014).

Access to information is seen as a right, an end in itself (Jayal 2008), and though a number of nations have only begun to focus on openness issues in recent decades, transparency and the right to access government information are now internationally regarded as essential to many functions of democracy. Transparency is linked to citizen participation, trust in government, informed decision-making, the accuracy of government information, prevention of corruption, and provision of information to the public, companies and journalists, among other essential functions in society (Bertot *et al.* 2012).

However, while transparency is necessary, it is not sufficient to provide accountability. Information access by itself does not generate accountability, it needs to be complemented by the capacity to demand explanations. The most meaningful kind of answerability is produced by citizen agencies that have the power to reveal existing information and have the capacity to produce answers about institutional behaviour (Fox 2007). The next section explores the role of citizen participation in monitoring the enforcement of rights and in demanding public scrutiny and transparency.

2.5 Linking citizenship, participation and accountability

The concepts of citizenship, participation and accountability come together in a broadly interlocking 'governance wheel', where each of the components supports and reinforces the other: citizenship gives the right to hold others accountable, accountability becomes the main driver for participation, and citizenship is reasserted by active involvement and participation (Tandom 2002). Rights are an integral aspect of this argument as they strengthen the status of citizens as legitimate claimants as opposed to being beneficiaries of development (Cornwall 2000). Citizen participation is most effective when it is engaged with institutional change and commanded by citizens in the form of accountability (Gaventa 2002).

The existence of a causal link between transparency, accountability and participation is contested and controversial, as their impact on governmental outcomes is not always positive. Existing evidence suggests that only under certain conditions do transparency and accountability initiatives create opportunities for citizens and the state to interact constructively (Gaventa and Barrett 2010). It is important to keep in mind the roles that citizens play and the dynamics of their impact, to sincerely understand the role of citizen participation in the logical chain leading to achieving accountable outcomes (Joshi 2010; Carlitz 2013).

Going forward this report will explore the relationship between ICT and CAR, focusing on the role citizens can play (or not) in achieving transparency and accountability in governance systems, thanks to the introduction and use of digital technologies.

3 ICT for citizenship, accountability and rights

3.1 Does ICT enhance citizen participation and increase accountability?

New technologies that enhance expressive capabilities often tend to trigger the narratives of emancipation and autonomy in the public imagination (Papacharissi 2010). This section looks at how ICT can influence CAR and then moves on to categorise the positive and negative impact of ICT, so as to be able to relate it to citizenship and accountability goals.

In the past few decades the increased need for efficiency, reducing debts and deficits, improving service delivery and enhancing accountability have taken precedence. This has led to a search for new styles of governance by means of enhanced citizen engagement (Pina *et al.* 2010). Some proponents of 'ICT for Development' argue that a direct relationship exists between ICT and enhanced democratic participation (Gigler 2014). As Zanello and Maassen (2011) explain, when citizens want to be engaged, they need information to build awareness, communication to organise activities, organisations to make their activities more effective and efficient, and feedback to have results. Owing to the rapid spread of mechanisms for feedback and dialogue via ICT, information-based community engagement has become more feasible (Head 2007; World Bank 2016).

How can ICT enable citizenship and accountability? First, it enables downward flows of information, from government to citizen. Second, it creates the likelihood of upward flows of information, from citizen to government, which are essential to inform decision-making. Finally, it enables horizontal flows of communication, levelling hierarchies. Enabling horizontal, downward and upward flows of information provides the potential for all parties to be more transparent and accountable (Wittemyer *et al.* 2014; Peixoto and Fox 2016). Theoretically, ICT lowers the barriers to getting informed, as citizens are able to access information and communicate directly, rather than depend on intermediaries who may have their own biases and incentives regarding the sharing of power (Gigler and Bailur 2014; Bertot *et al.* 2012). ICT as an organisational tool can be aggregated in two main groups: tools for organisations to work and communicate better, and those that enable citizens, as individuals, to connect with each other and act (Zanello and Maassen 2011). According to Hedde and Svensson (2009), ICT offers new ways of citizen participation and seeks to complement, rather than displace, existing structures.

3.2 Positive impact of ICT on citizenship, accountability and rights

Reports such as the United Nations Conference on Trade And Development's (UNCTAD's) *Information Economy Report* (2008, 2010) and others have been unequivocal about the potential of technologies to make the link between transparency, accountability and participation shorter (Wittemyer *et al.* 2014). There are multiple ways in which ICTs can transform transparency, accountability and participation.

This section predominantly looks at how technology can:

- make government more responsive to the needs and demands of citizens
- increase transparency through real-time information delivery
- encourage new forms of participation
- create action at scale

- make government functioning efficient, effective and user-friendly
- uphold democratic values like equality and liberty.

The increasing use of the internet and the expansion of e-government has constructed a two-way interaction with citizens, building upon existing citizen-to-government-to-citizen (C2G2C) communication channels (Johnson and Sieber 2013; Dugdale *et al.* 2005). This bi-directional interaction can facilitate transactions that serve as a platform for citizen feedback and a means of government accountability (Cavallo *et al.* 2014; Zanello and Maassen 2011).

The distance between government service providers and citizens can also decrease by providing greater access to decision-makers and by creating information platforms that facilitate citizen participation in government activities (Wittemyer *et al.* 2014; Johnson and Sieber 2013). For instance, today citizens have the opportunity to generate online content in some government websites. Besides increasing data creation and categorising and reporting issues within the community, they can also organise online forums around government policies, initiatives and services. As producers of information, citizens can become more involved in local political processes, boost communication within the community and between the community and the government, creating more inclusive and equal channels of communication (Johnson and Sieber 2013; Wolhers 2009). FixMyStreet in the United Kingdom and SeeClickFix in Canada and the United States are good examples of ICT-based platforms that encourage community participation in the provision of government services.

This interactive relationship is expected to make governments more responsive to the needs and demands of citizens. Real-time information delivery is expected to increase government transparency, empowering citizens to monitor government performance more closely (Wittemyer *et al.* 2014; Zanello and Maassen 2011; Amelina 2011). For instance, the platform Jaankari from the state government of Bihar, in India, includes a call centre aimed at tackling problems preventing the Right to Information (RTI) Act from living up to its full potential. Call centre operators are equipped with web-based RTI application software and voice-recording hardware to assist with the direct filing of RTI applications, general inquiries about the act, and redress of grievances. Jaankari is beneficial to the citizens of Bihar as it saves them time and money for travel to a government office and reduces the chances of unfair treatment; additionally, it makes information accessible to a wider audience including citizens who are illiterate or minorities or citizens from remote and underdeveloped areas (John *et al.* 2005).

Table 3.1 Positive impact of ICTs on CAR

ICTs have greatly reduced the cost of collecting, distributing and accessing government information
ICTs are an opportunity to build upon existing C2G2C communication channels
ICTs offer countries a new approach to creating transparency and promoting anti-corruption
ICTs produce real-time opportunities for citizen interaction and feedback
ICTs can be used to facilitate and make the work of organisations more efficient and effective
ICTs in the form of e-government also plays a legitimising role as a symbolic act towards citizens and the international system
ICTs have created a new way of civic engagement and defining social capital
ICTs can also be a source of providing identities
ICTs have the potential to create action at a large scale
ICTs can simplify traditionally presented government information by providing easy-to-understand visual tools for citizens to access government data
ICTs can help the government reach populations who might not otherwise encounter government information
ICTs provide multiple-platform opportunities for disseminating and interacting with information

The use of digital technologies has greatly reduced the cost of collecting, distributing and accessing government information (Anderson 2009; Bertot *et al.* 2012; Turner-Lee 2010). Collection of information is improved by reaching geographically, economically and socially disparate populations who were previously less exposed to direct government information (Meijer *et al.* 2009; Zanello and Maassen 2011). Government information such as budgets can be simplified and presented using easy-to-understand visual tools for citizens to access government data. The Open Budget Index (OBI), established in 2006 by the International Budget Partnership (IBP), evaluates how accessible and transparent a country's budget documents and processes are to its citizens, and rates each country accordingly. Mongolia, for example, doubled its score on the OBI from 18 in the 2006 survey to 36 in 2008, and then to 60 in 2010. The remarkable improvement can be attributed primarily to the fact that the government started publishing online budget documents, including the executive's budget proposal, year-end reports and audit reports (Wittemyer *et al.* 2014). Digital technology is also known to generate the 'glare effect', attracting media attention to publicise causes, draw attention to government behaviour and garner immediate citizen responses to point out waste, fraud and abuse (Turner-Lee 2010).

New technologies have the potential to facilitate new forms of participation. The possibility of decentralising power is initiated through enabling platforms for disseminating and interacting with information (Turner-Lee 2010). Coleman argues that citizens today can make their own choices as to which authorities and information sources they will accept, leading to a greater democratisation of knowledge, empowerment of the individual and the potential for more informed interactions between the citizenry and the government (2001); citizens also have the option of deciding where they want to share and the preferred format to communicate their opinions, whether through a blog, video, podcast or SMS (Wittemyer *et al.* 2014; Schellong 2009). According to Wellman's (2001) notion of 'networked individualism', digital technologies are re-defining the concept of social capital, as core communities are shifting from physically fixed and bounded groups to social networks thanks to ICT. Tools such as blogs have created new forms of social interaction that cannot be measured against standard indicators of social capital (Wellman 2001). Zanello and Massen (2011) propose that ICT can also be a source for providing identities. They give the example of phone numbers that provide a stable fixed point of reference to the outside world, where this was not possible earlier because of a lack of infrastructure.

ICTs enable new approaches to creating transparency and promoting anti-corruption by integrating citizen engagement and participation directly into e-government initiatives (Meijer *et al.* 2009). Many nations with transparency laws have directly tied the implementation of these laws to the implementation of ICT-based initiatives (Bertot *et al.* 2012). In the Slovak Republic, Open Courts is an initiative moving boldly towards this trend. It aims to improve the judiciary by making information on activities and performance of courts and judges available online, and by analysing the data to draw out trends and links that would otherwise be hidden. It also provides a comprehensive search mechanism for citizens to examine courts and judges (Cornelia *et al.* 2014).

In some countries ICT has been shown to strengthen democratic values such as equality and liberty, or else played a legitimising role as a symbolic act towards citizens and the international system. China's two-fold strategy of digitising all levels of the state not only strengthens Beijing's power in controlling its 31 administrative districts, 22 provinces and five autonomous territories but also improves its image in the world with regard to freedom of speech (Schellong 2009).

ICT also enables citizens to promote large-scale action. The scale effect is most effective if it combines a bottom-up nature – from citizens to authorities – with a horizontal character to create coalitions among different groups of citizens (Zanello and Maassen 2011). The platform Avaaz provides an excellent example to illustrate the reach of digital technology. It is a local-to-international campaigning tool that helps to generate pressure and influence governments and institutions to act in the interest of human rights, peace, environmental

protection and other causes. Avaaz is known to target campaigns not only to developed country governments, but also towards fragile state governments such as Sudan, Syria and Republic of the Union of Myanmar, on topics as varied as campaigning to stop the practice of ‘corrective rape’ in South Africa, or highlighting many other injustices towards basic human rights (Bott *et al.* 2011). By demonstrating that hundreds of thousands of people worldwide can collaborate and have meaningful, effective collective voice, Avaaz has shown new ways for people to think and act on difficult international issues worldwide.

3.3 Challenges and negative impacts of ICT-based interventions

This section discusses some of the adverse impacts caused by the use of digital technologies and the challenges that emerge while implementing ICT-based platforms to improve citizen participation and accountability.

The World Bank reports that the effect of technology on ‘global productivity, expansion of opportunity for the poor and the middle class, and the spread of accountable governance has so far been less than expected’ (World Bank 2016). For instance, the internet was expected to bring a surge of citizen participation, especially in policymaking, and self-organised virtual communities to hold governments accountable; unfortunately most of these hopes have been unmet, however (World Bank 2016). Organisations such as the Association for Progressive Communications have been creating awareness of both the intended and the unintended negative impacts of ICT (McGee and Carlitz 2013).

ICT-based platforms have had limited impact on some of the most protracted problems such as improvement in service provider accountability, broadening public involvement, and giving greater voice to the poor and disadvantaged. The reasons for this limited impact include digital divides, operational challenges when implementing ICT initiatives, and the inability of ICT-based platforms to circumvent the inherent complexity associated with CAR. These are discussed in detail below.

Table 3.2 Negative impact of ICTs on CAR

Digital divide	Operational challenges	Complications of CAR
<ul style="list-style-type: none"> Concerns inequalities regarding usage and ownership of ICT technologies. Exists between places (rural vs urban, developed country vs developing country); social groups (privileged vs underprivileged, economically and socially advantaged vs disadvantaged); people with different digital capabilities and skills; people with and without access to the internet; people who own and do not own adequate hardware/software, and owners of different types of hardware. Barriers to unequal access to digital technologies: availability, affordability, accessibility. 	<ul style="list-style-type: none"> Gap between design and reality of ICT-based systems. Inability to use ICTs at scale. Contradictions between users’ expectations of feedback and responsiveness. Image of modernisation and responsiveness towards citizen’s demands. Difficulty in setting electronic standards. Lack of privacy and the risk of personal exposure reduce uptake by citizens. Lack of effective marketing of ICT programs. 	<ul style="list-style-type: none"> Difficulty in assessing impact of participation on democratic outcomes. Causal relationship between transparency, accountability and participation assumed. Do citizens (especially disadvantaged) even want more direct means of engaging with their governments? Once online/connected, quality of user interface is still poor. Low ‘government response’ expectations. Social attitudes can decrease the effectiveness of ICTs as an anti-corruption tool.

3.3.1 Digital divide

The digital divide is a complex and multidimensional issue that concerns inequalities regarding usage and ownership of ICTs (May 2012). Research shows that digital divides exist between rural and urban places, developed and developing countries, privileged and underprivileged social groups, different levels of digital capabilities and skills, access to the internet, ownership of adequate hardware/software, and type of hardware (Napoli and Obar 2014). In fact, the digital divide within countries can be as high as that between countries (World Bank 2016). Some academics claim that with the given socioeconomic inequalities, ICT indulges privileged segments of society and excludes the socially and economically disadvantaged, thus widening the socioeconomic gap (Gigler 2014). This is a reminder that no space of participation, including those driven by technology, is neutral; all are shaped by the power relations that engulf them (Gaventa 2002).

Turner-Lee (2010) identifies three main barriers that produce an unequal access to the benefits derived from ICT and the internet:

Affordability. The cost of acquiring and using digital technologies such as mobile handsets and internet connections (World Bank 2016) continues to be very high, causing a barrier to adoption by multiple segments of the population. Poverty limits uptake and sustained use of ICT causing disparities in digital access and contributing to further alienation and possible disenfranchisement of those left out. Marginalised citizens, who are most in need of government accountability and responsiveness, are generally the ones facing the highest usage costs (UNDP 2012). Wasserman (2011) discusses how in Africa mobile handset and running costs are too high for appropriate mobile technology usage.

Availability. The proximity to service also affects an individual's decision to adopt digital technologies. Often services such as mobile coverage and internet connections are not available to places and communities that do not offer enough profitability for ICT providers. People from rural communities often experience a lag in getting connected (Hellström 2011). Although penetration to under-served communities has been increasing due to government initiatives, the need for ubiquitous access is still a major requirement to counter digital disparities. Again, it is marginalised citizens, who are most in need of government responsiveness, who also have the worst connectivity (UNDP 2012).

Accessibility. While availability of infrastructure and the ability to afford ICT are the first stepping stones to ICT usage, there are other important factors, like general and digital literacy, and the existence of appealing online content. Individuals need the appropriate training and experience to have an enriched and meaningful experience. Government use of ICT can exclude members of the population who lack the skills necessary to participate.

Further research into the digital divide indicates that the prevalence and intensity of these barriers is very much linked to citizens' socioeconomic characteristics. Factors such as gender, race, ethnicity, education, age, income, citizenship status, parental status, as well as housing tenure, influence ICT use and citizen participation, and have been identified as relevant in terms of access to ICT (Crutcher and Zook 2009).

Income. Worldwide, nearly 21 per cent of households in the bottom 40 per cent of their countries' income distribution do not have access to a mobile phone, and 71 per cent do not have access to the internet (World Bank 2016). Low-income groups are more than two times less likely to use the internet in comparison to high-income groups (Van Aerscht and Rodousakis 2008). Therefore, an increase in e-government initiatives to enable citizen participation may be exclusive in nature, further pronouncing social disparities.

Education. Digital education in the form of basic literacy, information literacy and computer training, is a necessary requirement for full participation in ICT-based interventions. These skills provide citizens with the ability to access technologies, from basic use of mobile phones and SMS services to use of the internet (Cavallo *et al.* 2014). As suggested by Van Aerschot and Rodousakis (2008), with greater levels of education, citizens are more aware of the services provided by the government and, as a result, are often more involved in the democratic process. They also point to the fact that education is not always enough, as language can also pose a challenge to participation in e-government services. Given that nearly one-fifth of the world's population is illiterate, the spread of digital technologies alone is unlikely to end the global knowledge divide (World Bank 2016).

Identity. Traditionally, marginalised demographic groups are associated with having less access to the internet and less political participation. Minority populations have been historically under-represented in both citizen-initiated contacts and internet access (Crutcher and Zook 2009). Women are less likely than men to use or own digital technologies (World Bank 2016), and older people face significant disadvantages in using digital technologies compared to younger audiences, who are more likely to have a better understanding of newer ICT as a result of increased exposure and education (Van Aerschot and Rodousakis 2008; Porter 2015). This explains the impetus behind the rapid development of ICT-based approaches to governance and political participation, as an attempt to counter democratic disaffection and political alienation among the young (McGee and Carlitz 2013).

An example that illustrates the digital divide is CGNet Swara, a mobile-based platform from rural India that attempts to foster dialogue and participation around important issues that are known to exclude underprivileged members of society. CGNet Swara is an inclusive, interactive voice forum that enables callers to record messages of local interest, and listen to messages that others have recorded. Action is triggered based on the reports sourced through the community by disseminating them to contacts, to the government, and in the mainstream media (Mudliar *et al.* 2013). CGNet Swara has enabled important interventions, including timely response to cholera, payment of overdue wages, delivery of missing school meals, fixing neglected hand pumps, among many others. However, the initiative has not been able to remove itself from the clutches of the digital divide and questions have arisen about its ability to reach the poor. Although relatively accessible, women contribute only about 12 per cent of posts on CGNet Swara, and a lack of awareness in rural areas has been reported (Marathe *et al.* 2015). Most posts published are in Hindi, and not as much in the tribal languages of the area, implying that this technology is predominantly being used by the upper class of the tribal community (Wittemyer *et al.* 2014).

3.3.2 Operational challenges while executing ICT

The execution of ICT is surrounded by multiple operational and logistical challenges. The gap between design and reality of ICT-based systems remains one of the major reasons for the failure of e-government systems in developing countries (Al-Hujran *et al.* 2015; Heeks 2003). Observations encountered suggest that while designing programs to change governmental systems, governments seem to divert their attention to technologies themselves rather than to the ways in which technology as a tool can be used to accomplish their purpose (Dawes 2009; McGee and Edwards 2016). For example, InfoDEV's (2013) study points out how mobile or internet ownership and/or access is often overlooked in program design and evaluation. In light of the above, what has also been observed is that citizen adoption is dependent on outside funding. Where donor funding has been alleviating ICT usage costs for people seeking accountability, uptake falls as donor funding drops. This poses a design challenge for the implementation of ICT to promote accountability (CIPESA 2012).

Following closely behind, contradictions between users' expectations of feedback and responsiveness also act as a barrier. On the demand side, users expect a quick resolution of the issues they raise, and this being the domain of governments or service providers, intermediary organisations that mediate their demands have little or no power to resolve them (McGee and Carlitz 2013). On the supply side, citizens communicate views and demands into 'black hole' initiatives that make no commitment to respond (Hellström 2011). This is a criticism against platforms like FixMyStreet, SeeClickFix or iPaidabribre; while they encourage community participation, it is short-lived as they are the intermediaries between the government and citizens with little or no power to independently act on citizen complaints in a timely manner, or at all (Wittemyer *et al.* 2014).

Additionally, it seems like governments are concerned with e-government developments to maintain their public image of modernisation and responsiveness towards citizens' demands, rather than introducing real changes that facilitate actual citizen–state interaction (Pina *et al.* 2010). Recent studies on e-governments show that less than 20 per cent of the government websites around the world offer services that are fully executional online. Accordingly, most countries are still behind their potential in the provision of venues for feedback and participation for the citizen, even among the more mature countries. Usage levels of many websites have been disappointing – for instance, most of Hong Kong's e-government offerings have had low usage rates, with the exception of some highly popular services (Schellong 2009).

Another reason for low uptake of ICT-based platforms is the lack of privacy. For Lyon (2013), one integral aspect of 'information societies' is that they are also 'surveillance societies', dependent on ICT for administrative and control purposes. These surveillance societies are known to contribute to the very ordering of societies, and have the capacity to reinforce social and economic divisions. He further suggests that data-driven ICT can classify and divide, sorting people into categories such as rich, poor, bankrupt, fraudster, etc. and this digitised information is often misused by governments, which create not just exclusion from information but exclusion by information (Lyon 2013). For example, ICT platforms can potentially select certain kinds of responses over others by either providing differential access to communication of feedback or categorising user input that pre-selects for certain categories. Therefore, it is important to ask whose voices are expressing themselves on ICT-enabled government service delivery platforms, and which might be the biases that are involved (Peixoto and Fox 2016).

As mentioned in the previous section, one of the main advantages of using ICT to promote citizen agency is its potential capacity for scale. However, the empirical evidence so far suggests that in practice, this is not the case. Due to reasons such as lack of resources, political interference, bad design, deliberate short-term event-based interventions, and loss of initial hype, ICT-based interventions have not yet been fully exploited to enhance citizen participation (Zanello and Maassen 2011; McGee and Carlitz 2013). Implementation of ICT is also expensive, and costs are often incalculable. Most governments offer a variety of options such as counter, mail, call centres and online modes to enable citizen–state interaction, and budgets are allocated accordingly. Finally, lack of effective marketing of ICT programs impacts citizen adoption of ICT-based services. Either there exists a scarceness of marketing campaigns, or these campaigns fail to sensitise the segments of citizens who most need to benefit from ICT-based government interaction (McGee and Carlitz 2013).

3.3.3 ICT's inability to circumvent CAR issues

The concepts of citizenship, accountability and rights are complex in their own right, with or without technology. Technology by itself cannot overcome the difficulties involved in understanding the dynamic and elusive nature of CAR.

First, assessing the impact of participation on democratic outcomes is not easy. While it has been theoretically established that citizen engagement and participation contribute to improved governance and development outcomes, this assessment has proved rather difficult to prove empirically (Turner-Lee 2010). Since it is difficult to assess the contribution to citizen engagement in general, assessing the contribution of ICT to CAR is also challenging.

Second, as mentioned in Section 2, a wealth of the literature assumes an automatic relationship between transparency, accountability and participation, namely that increased transparency and accountability initiatives lead to greater citizen awareness of their rights, an effect which would be notably exposed by civic participation of previously uninformed and excluded citizens (Gaventa and Barrett 2010). On the contrary, it can be argued that there is a dearth of evidence on transparency and accountability initiatives that lead to more awareness, and a lack of understanding about the degree to which the most marginalised get empowered (Gaventa and McGee 2013). As ICT-based interventions to enhance accountability and participation are normally grounded on these fragile assumptions, they are afflicted by the same difficulties, and normally reproduce the same intrinsic dynamics between transparency, accountability and participation (Wittemyer *et al.* 2014).

Third, it is frequently assumed that citizens, and even more disadvantaged citizens, want more direct means to engage with their governments. Some of the literature indicates that while people want solutions to their problems they may not see technology-based systems or any form of direct engagement with the government as the answer (Hellström 2011). ICT interventions may provide additional resources and tools for those already looking to engage with the government, but technology by itself is unlikely to make citizens more interested in participation (Hedde and Svensson 2009). Moreover, engaging with government in formal spaces might be irrelevant, as the informal sectors play a prominent role in marginalised people's livelihood strategies (Hellström 2011).

Fourth, some scholars argue that tech-based communities, especially virtual communities, mirror offline communities. Their civic activity, whether offline or online, is dependent on their individual background. This is specifically seen in terms of economic, racial and educational differences, with more educated and affluent users being more likely to be politically engaged as opposed to low-income, less educated citizens, who tend not to know the overall issues and who may lack the skills and confidence to debate them (Turner-Lee 2010). Furthermore, online micro-communities or 'digital cliques' and their formation are likely to stratify the web and deepen inequalities (Hedde and Svensson 2009). For example, different kinds of users and patterns of use have been reported for Facebook and MySpace in the US (Turner-Lee 2010), showing how the existing offline network of a person not only serves to influence choices of social networks, but also places entry barriers into new networks, especially when race, upbringing, residence or gender are identified.

Fifth, the citizens who have most to gain from accountability and participation initiatives mostly belong to the bottom of the pyramid and are also the citizens who have the lowest expectations of 'satisfactory government response' to their demands (Schellong 2009). They have low incentives to engage with participation-building initiatives and are often time poor, especially if they are women (Bachan and Raftree 2011). This issue affects interventions that aim to promote citizen participation and accountability, including those based on digital technology. Besides, while ICT in general can be an effective means of reducing corruption, social attitudes can decrease their effectiveness. The impact of anti-corruption efforts, for example, is also closely associated with factors such as the cultural milieu of the nation, the level of antagonism towards the government and the fact that most tools focus on bribe-takers and not bribe-givers (Bertot *et al.* 2012). For instance, citizen uptake of the M4W initiative (Mobile phones for Improved Access to Safe Water) in Uganda was found to be very low, and only 14 citizens over nine months reported on functionality by sending text

messages. Many people were not using the system as intended but were calling the mechanics directly. This practice circumvents the potential accountability-enhancing parts of the M4W process, but is a rational practice from the user's perspective, since it gets them quicker responses than going through the M4W process (McGee and Carlitz 2013).

So while technology can be transformational, the expansion of opportunities for the poor and the middle class and the spread of accountable governance have so far been lower than expected (World Bank 2016). Most of the reasons why ICT-based systems fail to enhance participation and accountability are operational and could therefore be fixed, but many are beyond the scope of technology. To maximise digital dividends, a better understanding is required of how technology interacts with other factors that are important for a healthy citizen–state relationship. Grounded in the literature, and based on the actual use of ICT in the context of citizens and governance, the next section explores the enabling factors of ICT-based interventions that have come to the fore as rising trends.

4 Trends in enabling ICT-based CAR interventions

The hype that technology would make governments effective, efficient, democratic and legitimate has passed. The trend is drifting towards questioning the blind faith in the power of the internet for creating mutually beneficial citizen–state interactions (Meijer *et al.* 2009). Multiple stakeholders of ICT-enabled programmes enhancing accountability and participation are asking questions about their impact and effectiveness. There is a need to understand better how citizens make use of these digital technologies and, most importantly, what are the conditions or approaches under which their impact on building transparent and accountable citizen–state relations gets maximised (McGee and Carlitz 2013).

This section looks at three approaches to maximise the effect of ICT to strengthen CAR: a realist approach, a citizen-oriented approach and a logistical approach. The realist approach is grounded in a pragmatic understanding of how CAR can be impacted by digital innovations. It includes the willingness and capacity of all parties involved, accounts for technological factors and does not assume a direct causality between more technology use and wider positive impacts. The citizen-oriented approach calls for placing digital innovations around the citizen, paying close attention to their attitude, ability and capacity to use technology to their advantage. Finally, the logistical approach focuses on operational challenges that could act as a deterrent against the spread of ICT to increase citizen participation and accountability.

Table 4.1 Approaches to maximise the use of ICT to strengthen CAR

Realist	Citizen-centred	Logistical	Other considerations
<ul style="list-style-type: none"> • Willingness and capacity of all bodies involved. • Not assuming that more technology leads to more political engagement. • Understanding better how technology interacts with other factors that are important for enhancing citizen participation and accountability. 	<ul style="list-style-type: none"> • Creating public value to citizens and meeting their needs should guide the operations of public organisations. • Attitude. • Trust. • Privacy. • Culture. • Response, feedback and interactivity. • Ability and capability of citizens. • Acceptance of change. 	<ul style="list-style-type: none"> • Energy. • Literacy. • Income. • Connectivity. • Need. 	<ul style="list-style-type: none"> • All ICTs should not be viewed homogenously, diversity of different ICTs should be acknowledged. • Factors for selecting technologies for citizen feedback initiatives: <ul style="list-style-type: none"> ○ Current set of tools already being used to collect feedback ○ New options available and their comparative value added ○ Degree to which the options are appropriate to the context. • Increase existing tools to facilitate a broader interaction between people. • Existing pressure to use digital technologies needs to be reduced.

4.1 Realist approach

There are three main and inter-related points that show how a realist approach towards the use of technology can improve the state–citizen relationship:

Willingness and capacity. One of the most important insights from recent research on the impact of ICT on citizen–state engagement is that those technology initiatives that ‘push on open doors’ and involve willing parties have a higher rate of success than those initiatives that push against closed doors and unwilling parties (Peixoto and Fox 2016; Welle *et al.* 2016). Agency, and the organisational, institutional and cultural aspects of a given context are the most important factors leading to accountability and impact, not as much the technology itself. Furthermore, transparency does not automatically lead to accountability, because in addition to information, collective public action is frequently needed to exert pressure on authorities and achieve accountability. Citizen voice enabled by ICT platforms may generate institutional response where weak capacity to respond is the problem but not when the underlying problem is a lack of political will (McGee and Edwards 2016). ICT-enabled platforms increase the capacity of the government to respond, but are rarely able to influence their willingness (Peixoto and Fox 2016).

The realist approach demands more realistic expectations on the role of ICT in CAR interventions: ICT can contribute to citizen–state relationships where the seed to improve this relationship has already been sowed. It is perhaps naïve to expect that ICT interventions can change incentives and build willingness among agencies to respond effectively and efficiently to citizens (McGee and Edwards 2016; McGee and Carlitz 2013). One of the prime reasons for the success of Check My School – a community-monitoring project that aims to promote transparency and social accountability in the Philippines’ education sector, by tracking the provision of services in public schools – is precisely the willingness of the Department of Education to cooperate with the non-governmental organisation (NGO) leading the intervention, by sharing available data and helping establish relations with schools. This initiative has also involved local socially active individuals and is aware of the current conducive sociopolitical environment of the Philippines (Shkabatur 2012).

Technology and other factors. To increase the digital benefits for citizens, a better understanding is required of how technology interacts with other factors that are important to enhance citizen participation and accountability. ICT has the power to make standardised, transaction-intensive tasks dramatically cheaper, faster and more convenient, but it is also important to remember that most tasks also have an aspect that cannot be automated and that requires human judgement, intuition and discretion (World Bank 2016). ICT does not have the inherent quality to leapfrog institutional obstacles, or skill and resource deficiencies on the ground (Wade 2002). Digital technology-based interventions are likely to be more successful when technology is deployed considering traditional concerns regarding human behaviour, choice and collective action, particularly when bridging the gap between citizens and the state (Gigler and Bailur 2014).

Rejecting naïve causality claims. Assuming that more technology leads to more political engagement, and expecting technology to constitute the next political utopia has been disregarded by many academics (Bertot *et al.* 2012; Hofheinz 2011; Wade 2002). Before embracing new technologies it is important to consider factors such as historical and long-term patterns of engagement, personal and group dynamics, and political, social, economic and financial conditions (Gigler and Bailur 2014; Bertot *et al.* 2012). Technology is just one potential tool to empower citizens (Gigler and Bailur 2014), and ICT interventions should not be examined through a techno-deterministic lens; a more comprehensive and integrative approach should be used instead (Al-Hujran *et al.* 2015).

4.2 Citizen-oriented approach

The citizen-oriented approach revolves around the citizens, advocating for technology to be introduced in interventions as a way to enable citizens to counter barriers and successfully reduce the gap between them and the state.

The current design and implementation of participation and accountability initiatives do not seem to achieve meaningful accountability impact. Most interventions fail to do sufficient research to understand the intended users of the technology, a failure that reduces citizen adoption of the services provided and therefore their impact (McGee and Edwards 2016). In many cases, tools are chosen with only limited testing of their appropriateness for the intended users in the intended contexts, despite widespread recognition among practitioners, funders and researchers that such an approach is prone to significant efficiency and sustainability risks (Wilson and de Lanerolle 2016). A citizen-centric approach that informs even the initial conception and design of the initiative can reduce the risk and increase adoption of ICT tools (Al-Hujran *et al.* 2015; McGee and Carlitz 2013). Such a process entails examining people's needs, motivations, expectations and reasons for use, as well as the outcomes in relation to their wellbeing (Gigler 2014). In order to hold government accountable, citizens need publicly relevant and actionable information and services (Peixoto and Fox 2016).

Citizens' intentions to use e-government services are most predominantly influenced by their attitude towards using these services, with public value playing a significant role in determining citizens' attitude, intentions and behaviour. This suggests that adoption of new ICT-based channels is dependent on whether they are perceived as a better or more convenient form of accessing public services, saving citizens' time and money (Al-Hujran *et al.* 2015).

Usage is often dependent on the level of trust between citizens and their government. If citizens do not trust the agency (governmental or NGOs) and the enabling technologies, they will not use the technology. Privacy of data and personal identity is instrumental in influencing citizens' use of ICT. In order to increase uptake of these initiatives, policies, protocols and data management mechanisms need to balance individual privacy protection with effective and efficient use of that information by government or by service delivery agency (Dawes 2009). Further, to work well, ICT-based participation and accountability initiatives need to be integrated into people's existing ways of doing things. While financial assistance could be one way of making ICT use habitual, it is not sustainable. It is, therefore, suggested that governments and other ICT-implementing agencies should adjust their expectations about the behaviour change implied in uptake (McGee and Carlitz 2013).

The ability and capability of citizens to use the system, and appropriate response and feedback from governments, are also key determinants of uptake (Dawes 2009). Thus, when assessing the impact of ICT initiatives, it is essential to evaluate the range of information and communication options made available by the technology, but also to consider people's capabilities to make use of them (Gigler 2014). Similarly, government's timely response, openness to feedback, and generally an interactive platform, are also important determinants of uptake and sustained use of ICT. It should be made visible to citizens that the information they contribute is being used in some way (McGee and Carlitz 2013).

In the end, culture and context play a key role in determining the adoption of a technology, too. Introducing technology to a new context requires proper considerations of important cultural differences (Gigler and Bailur 2014). In some countries cultural differences can act as a barrier to ICT adoption and it is therefore essential to consider the cultural settings of these countries while formulating strategies and designing interventions for increasing ICT usage (Erumban and de Jong 2006).

4.3 Logistical approach

The logistical approach pays attention to a number of strategies that can be followed, and to favourable conditions that can be created, to handle operational and logistical challenges that would otherwise decrease the impact of initiatives. Research has suggested that ICT often gets 'captured' by the existing organisational inefficiencies, leading to inefficiency (Wade 2002). Robertson and Sribar (2002) suggest that ICTs need to be conceived and planned in their entirety, considering all relevant layers and components. Infrastructure should be made effective by making it adaptive and designed to scale, grow and change over time. It must also be designed to balance immediate needs with long-term goals. Some of the critical points that allow the spread of ICT are:

Energy. New technologies require consistent electronic power and in many areas electricity supply is either erratic or non-existent. Government needs to invest in making electricity available to all by either improving current forms or exploring other forms of energy (Zanello and Maassen 2011).

Connectivity. Nearly 60 per cent of the world's people are still offline, unable to fully participate in digital technologies (World Bank 2016). Mobile phones and computers require a network to connect to the internet, and rural and remote areas frequently lack a network infrastructure. Market competition, public-private partnerships and effective regulation of internet and mobile operators can encourage private and public investment that increase access (Zanello and Maassen 2011).

Literacy. The utilisation of ICT requires citizens to have basic information literacy and informational capabilities (Gigler 2014). Information literacy refers to a set of abilities enabling individuals to recognise when information is needed and have the ability to locate, evaluate and use effectively the required information. Informational capability presupposes information literacy, and refers to a further ability to use ICT to communicate effectively, have access to media, and the capacity to produce and share local content with others through the network. Creating this capability is not an overnight affair, and adequate investment needs to be made in this regard, as digitally literate citizens are known to adopt and make effective use of ICT to connect with their governments on their own (Gigler 2014, Norris 2004).

Income. Both acquisition and use of new technologies have costs associated. ICT-based transparency and accountability initiatives need to explicitly or implicitly reduce the costs that citizens incur for taking action, by making the means of action readily accessible and cheap. Investments are required to make the internet and mobile networks more affordable (McGee and Carlitz 2013).

Need. ICT must solve real needs. Initiatives need to address actual problems in an appropriate way. Purely techno-centric approaches that do not aim to address a pre-existing problem should be rejected. ICT, moreover, should be part of the solution and not a so-called 'boomerang tool', where the benefits that a new tool brings are less than the negative externalities (Zanello and Maassen 2011; McGee and Edwards 2016).

4.4 Other considerations

Paying close attention to certain aspects of technology can also influence the uptake of digital technologies being used to bridge the gap between citizens and governments. To begin with, it is crucial that ICTs are not all viewed homogeneously, as one big 'black box'; the diversity of ICTs and their different affordances should be acknowledged. When selecting technologies for citizen feedback initiatives, the comparative value added to mechanisms currently in place for collecting feedback should be considered, and also the degree to which the options are appropriate to the context.

Careful consideration of these components can potentially help in achieving an optimal balance between expanding reach, by leveraging new technologies in citizen feedback initiatives, and ensuring inclusivity of participation, so as not to reinforce existing inequities (Gigler *et al.* 2014).

ICT-based channels should be just one among many communication channels between citizens and the government (Pieterse 2009). Many countries adopt ICT-enabled platforms to improve government citizen interaction due to international pressure. Public bureaucracies should not blindly succumb to this pressure to change and innovate the way they relate to citizens without considering their local context and reality (Pina *et al.* 2010). Wade (2002) and to a certain degree Kleine and Unwin (2009) believe that technologies and the international standards governing ICT are designed by developed country entities for developed country contexts. Therefore as developing countries increase ICT usage, they become more vulnerable to complexity of the hardware and software and to the quasi-monopolistic power of providers of key ICT services. By linking good governance programmes to digitising the public sector ('e-governance'), western countries may be reinforcing the overall dependency of developing countries (Wade 2002).

One of the most successful examples of an ICT-based intervention, literally combining the three approaches mentioned above, is D-Brain, an integrated web-based system adopted by the Republic of Korea, which shows real-time accurate analysis of the government's fiscal activities, including budget formulation, execution, account settlement and performance management. The system helps to reduce duplicate expenditures and also authenticates the accuracy and reliability of budgeting records. The system encourages participatory budgeting, whereby the central government, local governments, public institutions and the public collaboratively decide on the allocation of resources and participate in nationwide fiscal decision-making. Citizen participation takes place through channels such as internet surveys, an online bulletin board, online fora, online budget and bidding areas and public hearings (Wittemyer *et al.* 2014). D-Brain is meant to enhance efficiency, transparency and public participation in the national fiscal management (Kuriyan and Ray 2009; You and Lee 2013). As people can now see the direct link between government use of funds and taxes, their public participation in fiscal policy decision-making has grown. The Congress is able to review budgeting and payment information for the different departments within a ministry and finally the budget authority is able to make accurate budgeting decisions (Wittemyer *et al.* 2014).

This case also highlights the need for government to play an active role in stimulating demand for the usage of ICT-based technologies. The Korean government has engaged in multiple programmes to create demand, subsidising ICT training, ICT hardware and broadband connectivity and incentivising private players to participate in the project. In fact, Korea's high rate of internet users as a percentage of the population can be attributed to government efforts to promote ICT literacy.

5 Gaps in the literature

Studies in this field are still at a nascent stage. Not only is the form and use of technology rapidly evolving, so also is the very concept of CAR. There is a need for rigorous research at a global level to illuminate both the changing dynamics of the citizen–state relationship, and how digital technology plays a role in improving this relationship, from a citizen-centred approach. This research needs to be context-specific and user-centric, and cover a range of technologies to ascertain the impact of ICT to improve citizen–state relationships across different geographies.

User-centric research that explores how citizens relate and respond to concepts such as transparency and accountability using digital technology will not only shed light on the dynamics of citizen participation but also ascertain the degree to which and for whom digital technology is making communication efficient and transformative. A focus on user uptake will improve current interventions by providing insight on the sustainability and limitations of using digital technology.

It is also important to consider the implications of using different kinds of digital technologies, as distinct ICT-based platforms may require different resources and be appropriate for different contexts, depending on the availability, affordability and accessibility of the technologies for the users. Each digital technology has its own success rate and therefore more studies are required to see how different technologies result in different outputs and perhaps compare the usage of similar technologies to determine their impact on citizen participation. It is, for example, difficult to compare a study on user uptake of mobile phones in Africa (McGee and Carlitz 2013) with that of the user uptake of blogs in Zimbabwe (Moyo 2011) or of government websites in Spain (Cegarra-Navarro *et al.* 2012).

Finally, further research focused on specific geographies and contexts is also essential. Interestingly, most studies on the use of mobile technology are from developing countries – like India (Mudliar *et al.* 2013), Uganda (McGee and Carlitz 2013), Zimbabwe (Moyo 2011) or the Philippines (Shkabatur 2012) – while most studies on the use of government websites belong to developed countries – such as Spain (Cegarra-Navarro *et al.* 2012) and the Republic of Korea (Kuriyan and Ray 2009). It is very difficult to corroborate clear geographical trends from the available data. The only thing that is clear is that the context, culture, attitude, ability and capability of people are the most important determinants and further research is required to recognise the profile of citizens able to use digital technology effectively (Al-Hujran *et al.* 2015).

The incipient nature of the use of technology in this area has led to a lack of case studies that document impact over prolonged periods of time. While a host of cases advocating for and against exist in the literature, very few technological programs have been implemented for long enough to determine the actual impact of its use. Furthermore, cases that were once considered ‘successful’ have kept evolving based on current circumstances and contexts. It is finally interesting to note that the same set of case studies (such as ipaidabibe, Ushahidi, Daraja, FixMyStreet or Check My School) are used by many academics (such as Wittemyer *et al.* 2014; Peixoto and Fox 2016) who are delving into the depth of citizen adoption, use and effectiveness *vis-à-vis* the use of digital technologies.

6 Conclusion

This evidence review set out to chart the contribution of digital technologies to citizenship, accountability and rights (CAR). The review used secondary research to first unpack the important concepts and definitions required to understand the relationship between ICT and CAR, and then organised the literature to analyse the potential positive prospects of ICT on participation and accountability, as well as its challenges and negative effects. This was followed by an analysis of the elements that enable citizens to adopt ICT to enhance participation and accountability.

Operational challenges and difficulties associated with the digital divide can be tackled by paying sufficient attention to the diverse and flexible affordances of technology. The inherent complexity of CAR can be addressed by adopting more realist approaches and by paying more attention to the nuances of these concepts. Additionally, to favour greater digital adoption countries need to invest time, effort and resources to build 'analogue complements' that sustain the technology use for citizen–state relationships.

The literature review shows that views of governments, technology experts and academics on the impact of technology on development are frequently polarised, highlighting the need for a middle ground that views technology as a means to support and extend participation and strengthen inclusion. Dornan and Hudson (2003) call for a 'positive-realist cybercriticalist' view that promotes technological interventions that reduce existing inequalities, as there are relatively simple opportunities for the state to use new and existing technologies in socially just ways. Whether it is the Indian Government's Jaankari, or FixMyStreet, these are all attempts at using digital technology to improve citizen participation and enhance transparency and accountability. While using ICT can sometimes generate negative effects, it is imperative to continue looking for better approaches that enable digital solutions to support CAR.

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