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Title: Digital corporate communication and co-productive citizen engagement

Year: 2023

Version: Accepted version (Final draft)

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Please cite the original version:

Homont, L. P. P., Canel, M.-J., & Luoma-aho, V. (2023). Digital corporate communication and co-productive citizen engagement. In V. Luoma-aho, & M. Badham (Eds.), *Handbook on Digital Corporate Communication* (pp. 413-425). Edward Elgar.

<https://doi.org/10.4337/9781802201963.00041>

Chapter 29: Digital Corporate Communication & Co-productive Citizen Engagement

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Abstract:

Digital technologies have changed communication between citizens and public sector organizations (PSOs) and governments. While many citizens still remain passive when it comes to the public sector and its governance, information and communication technologies (ICTs) have permanently changed how citizens search and share public information, and how they voice their opinions and ideas. Citizen co-production is understood as citizen-PSO engagement toward joint goals, yet it often remains an ideal. Through the example of Madrid City Council's successful utilization of digital technologies through a mobile app (Madrid Movil), the chapter illustrates how engagement became co-productive via ICTs through improved relationship between authorities and citizens. Digital technologies helped improve public sector listening, real-time information exchange, and communication of citizens with each other, and provided better data about emerging needs. As joint citizen-PSO efforts for co-production of public services, digital co-production contributed to improving the intangible value of public services.

Keywords: Citizen co-production, Citizen engagement, citizen participation, Government Communication, Organizational listening, Public Sector Communication

Introduction

Digital technologies are expanding the possibilities to disseminate information, and with it, new social demands for openness, interactivity, participation and information sharing in the public sector are emerging (Moon, 2018; Santos et al., 2019). Regarding citizen participation in the form of co-production, scholars argue that “the advent of Internet’s unique many-to-many interactivity and of ubiquitous communications promises to enable co-production on an unprecedented scale” (Linders, 2012, p. 446). This chapter attempts to explore this unprecedented scale by looking at how digital tools and technologies are enabling public sector and government organizations to enhance engagement with and among their stakeholders.

This chapter focuses on engagement in the form of co-production - a concept that, as is argued below, implies that citizens and authorities are equal participants in the production of public services, (Tuurnas, 2020), and follows the assumption that co-production is valuable for it contributes to long-term relationships which in turn foster organizational intangible assets providing benefits for both organizations, citizens and society at large (Canel & Luoma-aho, 2019). The scope of the chapter is confined to the public sector, which includes all those public authority organizations operating on several levels (national, regional and municipal), that provide public services and that have politically elected and appointed officials as well as public servants.

The goal of the chapter is to explore the relation between digital corporate communication and co-productive citizen engagement. The structure is as follows. First, the conceptual framework is presented. Second, the changes in ICTs that shape the way public sector organizations and citizens communicate for co-producing experiences are discussed. Benefits and risks of ICTs for co-production are then critically examined. Finally, an illustrative example of digital co-production is offered from which lessons are drawn about how to enhance f co-productive citizen engagement.

Definitions of the topic and previous studies

The theory framework of this chapter links digital corporate communication and co-productive citizen engagement concepts. Starting from a broad concept, *corporate communication* has been defined as “a management function that offers a framework for the effective coordination of all

internal and external communication with the overall purpose of establishing and maintaining favourable reputations with stakeholder groups upon which the organization is dependent” (Cornelissen, 2008, p. 5). One of the key issues in scholar definitions is whether the purpose of this communication is confined to the benefit of the corporation or whether it includes the benefit of stakeholders.

Although it is beyond the scope of this chapter to elaborate on the normative debates that definitions trigger, this chapter aligns with the definition of *digital corporate communication* (DCC) provided in the introductory chapter of this volume: “An organization’s strategic management of digital technologies, digital infrastructures and digitalization processes to improve communication with internal and external stakeholders and more broadly within society for the maintenance of organizational intangible assets” (Badham & Luoma-aho, 2023, p. XXX). We understand there is a normative implication in this definition to the extent that maintaining intangible assets also entails benefiting stakeholders, something which is more explicitly profiled in the following definition of *public sector communication*: “goal-oriented communication (...) with the purpose of building and maintaining the public good and trust between citizens and authorities” (Canel & Luoma-aho, 2019, p. 33). Therefore, the key point that emerges from this theory framework is whether digital communication undertaken by public sector organizations builds some form of intangible value, and this allows refinement of the goal of this chapter in the following terms: to explore the extent to which digital corporate communication in the public sector may help build intangible value in the form of co-productive citizen engagement.

The concept of *citizen engagement* entails issues related to citizen-PSO dialogue, involvement and interaction (Piqueiras et al., 2020; Yang et al., 2021) that, again, fall beyond the scope of this chapter. It is the specific approach of this chapter (the possible intangible value generated with ICTs) that guides the conceptualization of this term as the “intangible asset that measure the capacity of an organization to get citizens involved in public administration processes” (Canel & Luoma-aho, 2019, p. 190). More specifically, here citizen involvement in public management is explored under the notion of “*co-production*” (Bovaird, 2007; Bovaird & Loeffler, 2012; Bovaird et al., 2015; Brandsen & Honingh, 2016; Tuurnas, 2020), and it builds on the following definition: “[the] relationship

between a paid employee of an organization and (groups of) individual citizens that requires a direct and active contribution from these citizens to the work of the organization” (Brandsen & Honingh, 2016, p. 431). Co-production is a form of citizen engagement by which citizens engage with public sector organizations (Piqueiras et al., 2020).

The chapter explores how digital communication in the public sector may expand, increase and improve the relationship between public sector authorities and individual citizens to jointly work on public policies and services. There is still little systematic evidence about how digital technologies affect co-production in practice (Lember et al., 2019, p. 1680). For the purpose of this chapter, the following definitions are adopted: *Digital Citizen Engagement (DCE)* is “the use of new media/digital information and communication technologies to create or enhance the communication channels that facilitate the interaction between citizens and governments” (World Bank, 2016, cited in Malhotra et al., 2019, pp. 149-150); and *Digital Co-production (DCP)* is the “joint and collaborative web-based production of public services by the government and its citizens” (Moon, 2018, p. 295), including the utilization of digital platforms, social media and smartphone apps.

What is changing in the development of digital co-production?

It has been argued that ICTs increase interactivity to an unprecedented scale (Linders, 2012, p. 446; Sorrentino et al., 2018). By enhancing the amount of information available for citizens and public sector organizations (Moon, 2018; Yang et al., 2021), ICTs provide a set of opportunities for governments to engage citizens (Cho & Melisa, 2021; Clifton et al., 2020; Meijer et al., 2018; Yuan, 2019). In this sense, Lember et al. (2019) argue that ICTs support a swifter, broader, more efficient and real-time flow of information between citizens and public sector organizations, thus affecting the scale and the way through which both sides interact. Given that co-production is associated with the establishment of dialogue (Loeffler & Bovaird, 2018), it seems reasonable to state that digital technologies could strengthen the positive outcome of this specific form of citizen engagement.

The definition of digital co-production is subject to debate about whether a new phenomenon can be identified. There are scholars who claim that the use of digital platforms would allow new forms of co-production (Cordella & Palleti, 2017; Cho & Melisa, 2021; Lember, 2018), while for

others, it simply adds a new component to it. Alam considers that digital co-production enabled by social media platforms challenges traditional co-production in the sense that, since the latter is linked to face-to-face interactions and long-term relationships, considerable resources are required (Alam, 2021, p. 1089). Digital technologies bring higher possibilities for co-production to develop.

In analysing the possibilities that ICTs entail for digital co-production in the public sector, two areas of change may be examined according to who is initiating the communication, whether organizations or citizens.

Communicating with citizens for engagement

Public sector organizations may find in digital technologies better ways of reaching citizens. It has been extensively argued that ICTs represent key elements for public sector organizations to better understand citizens' preferences, needs and issues (Lember et al., 2019; Sideri et al., 2019; Yuan, 2019). A better understanding of stakeholders enables crafting better communication strategies to address them (Canel & Luoma-aho, 2019; Krishnan et al., 2018; Tuurnas, 2020). Among benefits, it is also mentioned that ICTs enable public sector organizations' communication with citizens by lowering the required costs and efforts (Cho & Melisa, 2021; Yang et al., 2021).

Elaborating on the new opportunities of technologies to engage citizens, Lember et al., identify the following (2019, pp. 1670-1672): sensing technologies may provide accurate real-time data and strengthen the ability of public administrations to attune with citizens' needs; social media facilitate gathering citizens' views; machine learning enables collecting and analysing citizens' inputs in a way that leads to a better understanding of social needs and preferences; and finally, actuation technologies such as robotics may help develop citizen engagement with less effort from citizens .

A specific area of analysis is that of public organizations' possibilities to manage citizens' motivation for engagement. If well-used, some digital tools can generate higher motivation levels (Lember et al., 2019; De Jong et al., 2019), for example, via the personalization of data and of services (here, according to Valdez-Mendia and Flores-Cautle (2022) and Krishnan et al., (2018), personalization has to do with recognizing and treating users as individuals through messages that are crafted, taking into account their characteristics and contexts. In this sense, a gamification strategy, which consists of the collection of users' data through a game, may provide new incentives for citizens

to participate in the crowdsourcing of public services (Mergel, 2016). By increasing citizen motivation, ICTs may ultimately positively affect citizens' participation in co-production (Clifton et al., 2020; Moon, 2018; Malhotra et al., 2019).

Citizen communication with governments to engage in public management

The second area of analysis looks at changes from the citizen perspective. It has been stated that digital technologies change the way citizens can communicate with their governments (Jalonen et al., 2021; Moon, 2018). In fact, ICTs allow citizens to search and share information, and to create new forms of organization to collectively resolve problems (Jurgens & Helsloot, 2018). By providing features such as opinion maps, surveys, comments, solutions' simulation, voting and ranking ideas, digital tools facilitate the collaboration, discussion and sharing of ideas among citizens (Falco & Kleinhans, 2018, pp. 17-18). In addition, as they allow citizens to crowdsource data and report problems, digital tools enable citizens to engage in public services through co-production (Allen et al., 2020; Lember et al., 2019; Jalonen et al., 2021; Yuan, 2019).

What remains the same?

The need to serve and engage citizens in democratic settings is almost as old as democracy itself. The ideals in public service remain much the same throughout different stages of development of technology or other trends in history. The aim of public value remains at the core of much public sector communication and collaboration with citizens (Canel & Luoma-aho, 2019).

As humans change slower than technologies develop, many times the affordances of technology do not manifest in reality as planned despite inclusion and transparency potential between the different stakeholders on new media platforms (Aten & Thomas, 2016). What remains the same in DCP is the fact that most citizens are still passive and uninterested in active collaboration with public sector organizations, no matter the technological advances enabling interaction (Delli Carpini, 2020). Technology merely enables participation, but does not motivate it, and sometimes it actually provides a false positive of being effective, as in the case of clicktivism, online activism and providing support via easy solutions such as likes on social media. Furthermore, as the adoption of digital technologies is often slow, one could argue that many public sector organizations globally still function with very

little coproduction in practice, relying on traditional model of one-way informing of citizens about public management issues (Canel & Luoma-aho, 2019).

Critical examination: benefits and risks of ICTs for co-productive citizen engagement

In exploring the development of ICTs for supporting digital citizen engagement and co-production, several risks should be taken into account. Among those identified by the literature, there is the digital divide, understood as “the gap between people who have adequate access to information and communication technology and people who have poor or no access to [it]” (Lythreatis et al., 2022, p. 1). The digital divide can be evaluated in terms of Internet accessibility or of digital skills (Sorrentino et al., 2018, p. 283). Individuals’ possibilities to participate in public and social issues are reduced, and with it, social and economic inequalities reinforced (Ragnedda, 2017, cited in Lythreatis et al., 2022, p. 1; Ribeiro et al., 2018). The digital divide could even lead to non-representative co-produced services, potentially enabling government illegitimacy (Linders, 2012). To face this risk, the use of smartphones and apps (Ye & Yang, 2020), and the equipment of citizens with basic ICT tools and digital skills (Sari et al., 2018) could be of help. If not properly equipped, governments could otherwise burnout the few participants in digital co-production (Linders, 2012), reduce motivation levels to co-produce, and ultimately lower citizen engagement.

Digital co-production might also be associated with the emergence of a new kind of stakeholder, fakeholders, defined as “opinions, socio-bots and stakeholders artificially generated by either individuals or persona-creating software and algorithms to either oppose or support an issue” (Luoma-aho, 2015, p. 14). These fakeholders may damage co-production by practicing one-sided interaction (Piqueiras et al., 2020), and hence influence decision-making to serve not joint interests but their own.

Scholars also point out the political issue of who has the control over production processes in digital co-production (Lember et al., 2019, p. 1675): ICTs allow for including external stakeholders in decision making, and who the government finally includes in the process is subject to controversies. It could happen, for instance, that a specific party or socio-political activist group is in a better position

to access co-production opportunities, thus creating power imbalances in the co-production of public services.

Finally, the “echo chamber” phenomenon is also a risk for the development of digital co-production, and it occurs as “a mechanism [that] reinforces an existing opinion within a group, and, as a result, move the entire group toward more extreme positions” (Cinelli et al. 2021, p. 1). By fostering polarization, this phenomenon could nourish the clash of values among different co-producing stakeholders, which hinders the co-production process itself (Bovaird, 2007).

The implementation of digital tools for engaging citizens also engenders several challenges, among which there is the digital capacitation of officials (Clifton et al., 2020; Falco & Kleinhans, 2018; Kumar et al., 2017; Khine et al., 2021). Public sector organizations are having to undertake motivation strategies in order to battle potential resistance to change and involve employees in ways of doing which are different from those they are used to (Paletti, 2016; Wamsler et al., 2020). Finally, digital co-production challenges current regulations related to digital accessibility, privacy, data protection and security policies (Chen et al., 2020).

Illustrative example: Madrid City Council’s mobile app for city management

It has already been mentioned that there is still little systematic evidence about how digital technologies affect co-production in practice, and this section presents an analysis of a government initiative, the Madrid mobile App of the Madrid City Council. The focus of the analysis is whether the benefits and opportunities offered by ITCs in co-production may be associated with a higher intangible value, and the latter is looked at in terms of citizen participation. Data collection was carried out through the analysis of the information provided by Madrid City Council’s website and apps, as well as via the use of this app by the authors.

Two areas are explored below. First, the extent to which the deployed digital corporate communication reflects the changes and possibilities for digital co-production that have already been discussed; and second, the extent to which the developed digital co-production may be associated with intangible value.

The context

In 2014, Madrid City Council developed a smartphone app with the purpose of facilitating the local government's communication with citizens (V.D.A., 2014). Operationally, the app established connection with citizens by requesting their registration through email address, Facebook, or a specific municipal account (an account through which the user can access services provided by the municipality). From there, several city council portals can be accessed to get involved in different activities such as the following. In the transparency portal users can access data and news feeds to follow up on the city council performance. Users can also arrange appointments for local services such as sports activities in public buildings. They can proactively get involved in public management using the "avisos" (notices) option with which they can create a geolocated post to report problems (i.e., ordure in public areas). An "aviso" has the following process: once the post is created, the user receives a ticket with information to follow up on the notice; this information includes the responsible municipal department and also the status (completed, in process, or rejected). It also has the possibility for other nearby users to support, report and comment on it. Finally, users are notified when the problem is actually solved (Madrid, n.d.a).

In terms of the policy cycle, this app allows citizens to get involved in co-production at the design as well as at the implementation phase of public policies. A single platform includes full information of local public services and the interaction of participants. A "social community of notices and petitions" is created that, as claimed by the organization, "enhances the possibility of sharing information among citizens and of engendering a shared view of the notices and petitions of the neighbourhood" (Madrid, n.d.a, par. 2).

New opportunities for local government and citizens to communicate via ICTs

To what extent do ICTs support the Madrid City Council in the challenge of communicating with citizens to engage them in public management via the Madrid mobile app? And, to what extent do ICTs enable Madrid's citizens to communicate with the Madrid City Council to engage in co-producing via the Madrid mobile app? Table 1 shows information collected from the analysis. The rows indicate the different areas in which ICTs can operate (first column) presenting new opportunities both for the public sector organization (second column) and citizens (third column); these columns synthesize the review of literature presented in the first part of this chapter. The fourth

column summarizes the analysis of these changes to this specific digital c-production initiative (Madrid móvil).

The co-production that Madrid Móvil allows shows several of the opportunities that ICTs provide according to the literature review. The app represents a new way for both the local government and Madrilian citizens to exchange information in the following areas: more operational facilities (less time and human and technical capital are needed), real-time information, and better data about each other, which ultimately enriches mutual interaction and knowledge. By allowing users to share their opinions and needs, to comment on other users' posts, and to follow up on how the municipality is responding to their requests, Madrid Móvil a) helps the local government to better understand and listen to citizens, and to collect information from them that enables efficiency and efficacy in public management; and b) allows citizens to be better contextualized and aware of the organization's performance and other citizens' needs and reactions. What Madrid Móvil shows is that, ultimately, a better interaction, data, and an increased mutual knowledge enable joint efforts for the co-production of public services.

Table 1. Madrid City Council’s and citizens’ new possibilities to engage in co-production via the Madrid mobile app

	Changes in communication due to ICTs (based on literature review)		Illustrative example
Areas of change	Opportunities presented by ICTs for public sector organizations	Opportunities presented by ICTs for citizens	What co-production via Madrid Móvil shows
Operational facilities	Less significant organizational resources; Lower costs of government actions for engaging citizens.	Easy access to public authorities; Less time is required to get involved in public management.	Involvement of citizens without requiring from them a face-to-face encounter or a visit to the official building. The resources that are implied in the Madrid Móvil app are the app development and maintenance, and development of artificial intelligence.
Real-time information	Real-time data collection.	Real-time reporting.	The app is available 24/7, allowing a real-time bi-directional communication between the organization and users
Better data	Data crowdsourcing	Problem reporting; Collective problem solving.	Data are created by users when they post ‘avisos’, comment on, support and report other posts.
Better interaction	Multidirectional, interconnected and dynamic flow of information that reshapes the existing relationships	Reliable information searching and sharing; - New possibilities to access authorities and other citizens.	Real-time and by-directional communication is enabled via the city council’s portals and news feeds (from the municipality to users) and through “avisos” (from users to the municipality)

Mutual knowledge	New ways for the collection and analysis of citizens' views; Better understanding of citizens' needs.	Better information about how the organization performs.	Madrid Móvil allows exchange of information with which: - The local government collects real-time information of citizens' needs; - Citizens can follow up on how the local government manages the city.
Co-produced public management	Engagement with citizens in public service design and delivery	Collective problem discussion and solving via opinion maps, surveys, simulation of solutions, dissemination of ideas, voting.	The government and citizens are jointly involved in public service design and implementation through: - the exchange of information; - the co-arrangement of public services; - the sharing and commenting of information with other citizens; - transparent access to public information on public management.

Source: Authors' own elaboration

Intangible value measured in terms of citizens' participation

To what extent did this app build intangible value? Information for the analysis was provided by the open data webpage of the Madrid City Council (Madrid, n.d.b) regarding citizen participation, represented in the form of 'avisos' (notices) received and solved. It has to be mentioned that the app is not the only one channel available for posting notices. Citizens can also use traditional (or offline) channels such as the Madrid Council's phone number 010, the Citizen Attention Offices, and the offices for specific public services such as the Canal Isabel II (the public company in charge of water cycle management).

Table 2 represents through-app notices *versus* non-app notices (meaning all the notices received via any channel other than the app). The table includes data for 2019 and 2020.

Table 2. Notices received and solved (Madrid Móvil *versus* non-Madrid Móvil)

	2019	2020
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“Avisos”	Received	Solved	% of solved over received	Received	Solved	% of solved over received
Via-Madrid Móvil notices	61.350	47.481	77,39%	68.444	54.929	80,25%
Non-Madrid Móvil notices	422.217	376.515	89,18%	381.085	335.002	87,91%

Source: Authors’ own elaboration based on data from Madrid Móvil app (Madrid, n.d.b)

Data shows clearly that non-app channels are still much more used: in 2019, 422.217 notices were received through non-app channels, while only 61.350 notices came through the app. It seems Madrilian citizens are still not much familiar with the app. However, comparative data across time shows a slight increasing trend for use of the Madrid Móvil app: while through-app notices increased (from 61.350 to 68.444), the non-app notices decreased (from 422.217 to 381.085). This decrease can be explained by the lock down caused by the Covid-19 pandemic in 2020, in which it was easier to resort to the app than other channels. Finally, it is interesting to note that the rate of solved notices increased for through-apps (from 77.39% to 80.25%) while it decreased for non-app notices (from 89,18% to 87,91%). There is not much data to account for this, but it could be reasonably stated that in circumstances such a pandemic lock down, Madrid Móvil ended performing slightly better.

Table 3 specifies data for all the different channels, allowing for contrast of traditional channels with digital ones as well as for analysis of the app as compared with other digital channels.

Table 3. Notices received and solved (traditional channels *versus* digital channels)

	2019			2020		
	Received	Solved	% of solved over received	Received	Solved	% of solved over received
<i>Traditional channels:</i>	343.644	310.008	90,21%	270.669	246.878	91,21%
Telephone 010	334.008	302.539	90,58%	260.894	239.545	91,82%
Canal Isabel II	5	5	100%	2	1	50%
Citizen Attention Offices	75	57	76%	261	187	71,65%
Suggestions and complaints	9.220	7.231	78,43%	9.039	6.947	76,86%
Urban woodland unit	336	176	52,38%	473	198	41,86%
<i>Digital channels:</i>	139.922	113.986	81,46%	178.860	143.053	79,98%
Madrid Móvil app	61.349	47.481	77,39%	68.444	54.930	80,26%
Madrid City Website	52.295	44.012	84,16%	105.223	83.512	79,37%
Twitter	25.429	21.750	85,53%	4.896	4.335	88,54%
Email	53	48	90,57%	80	73	91,25%
Suggestions Council Portal	796	695	87,31%	217	203	93,55%

Total	483.566	423.994	87,68%	449.529	389.931	86,74%
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Data shows, again, Madrid citizens’ predominant resort to traditional channel use: notices received through traditional channels such as telephone and physical offices are in 2019 more than double (343.644) those received through digital channels (139.922). The telephone is, by far, the most used channel (334.008 notices).

Looking at Madrid Móvil comparatively with other digital channels, it seems that in 2019 this was the most used channel: almost half of the notices coming from the digital channels came through this app, doubling even social media networks such as Twitter. It seems that this tool was the first driver of citizens participation among digital channels.

The evolution from 2019 to 2020 shows a telling trend: there is an increase of digital channel use (from 139.922 to 178.860, equating to +27.83%) and a decrease in the use of the traditional ones (from 343.644 to 270.669, equating to -21.24%). Citizens’ use of the Madrid City website almost doubled between 2019 and 2020 while use of the Madrid Móvil app increased less, from 61,349 to 68,444 received notices. ,

Overall, and despite the limitations of the presented data, it is reasonable to state that in circumstances such a pandemic lock down, Madrid Móvil ended performing slightly better than other channels; that digital channels made up for the drawbacks that the pandemic could have caused for citizens to participate and get involved in co-production; and that an increase in citizens’ use of digital communication may have helped them to get more familiar with digital tools, establishing hence a trend which in the future may be more solid in terms of citizen engagement.

Some comment can finally be made about how Madrid Móvil faces the risks associated to ICTs for digital citizen engagement and digital co-production. Regarding the digital divide, Madrid City Council still allows citizens to report problems and give suggestions through traditional channels and, as the data shows, the latter are available and more used by citizens. To address the problem of fakeholders, Madrid Móvil offers two solutions. First, users are required to register through an email address or by creating a municipal account; no one can post a notice without registering. Second, users can only post a notice if they are physically within the area (the app checks geolocalization).

Lessons learned

The illustrative case shows that the use of digital technologies by public sector organizations for building citizen engagement is progressing within the context of other both online and offline channels. This case shows citizens' predominant use of the latter. Public sector organizations should combine online with offline communication in order to minimize the possible negative effects of the digital divide and of echo chambers. By keeping traditional ways of communicating with citizens, the engagement of non-digital-skilled citizens will be preserved, and thus digital co-production will not harm the representation of the social majority in the provision of public services.

In this illustrative example, ICTs appeared to make up for the difficulties caused by the pandemic to communicate with citizens and to get them involved in public management. Where there is cross-time comparative data, an increase in the use of digital channels is shown parallel to a decrease in offline ones. This may mean that citizens have become a bit more familiar with digital communication thanks to the pandemic, and that this higher familiarity will remain in the future in favour of the development of citizen participation and engagement. Overall, the use of digital communication may increase the participation of citizens in co-production of public services and policies.

Conclusion and future directions

This chapter has explored how digital corporate communication employed by public sector organizations may build intangible value via co-productive citizen engagement. It analysed first the extent to which ICT allows organizations to reach out citizens and get them to participate in public management; and second, the extent to which ICT enables citizens to interact better with public sector organizations and participate in public management. The exploration of an illustrative example of digital co-production has shown that the use of digital communication by public sector organizations for building citizen engagement is making its way within the context of other both online and offline channels; that ICTs made up for the difficulties caused by the pandemic to contact citizens and to get them to participate in public management, thus establishing a trend of increase in the participation of

digital coproduction which may remain in the future; and that governments should keep working on strategies that avoid risks such as those of echo chambers, the digital divide, and of fakeholders. Overall, the analysed example shows that citizen engagement became co-production via ICTs, enabling the local government and citizens a better interaction based on better and real-time data, mutual knowledge and joint efforts in public services; and that this digital co-production is associated with higher intangible value due to better possibilities of citizen participation. Further research should develop metrics and indicators to more specifically identify and assess the intangible value that digital corporate communication builds in the form of digital co-productive citizen engagement.

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