

# **Mandatory provisioning of digital public services as a feasible service delivery strategy: Evidence from Italian local governments**

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## **Abstract**

Several governments are actively encouraging their administrations to deliver public services exclusively through digital channels. This strategy consists of putting in place a series of complex and specific actions that bring into play numerous actors, to ensure that users are willing to accept digital channels and that weaker users are not disadvantaged. Although this strategy is being increasingly adopted in various countries, scholars have scarcely begun to explore its logic. This research explores how to define a service delivery strategy that forces users to adopt digital channels. Four in-depth case studies have been conducted on Italian local governments that started delivering their non-educational school services through digital channels alone. We found that a mandatory service delivery strategy is feasible when the starting point is to understand the users' characteristics, skills and behaviours and, as a consequence, whether they perceive the service as complex and/or ambiguous. With this in mind, public organisations can select the proper mix of channels for each category of users and combine their change in approach with behavioural-type interventions, i.e. by creating the right conditions to modify the users' behaviour.

**Keywords:** digital public service, mandatory digital channel, Multichannel Management, Channel Choice, local governments, Media Richness Theory.

# 1 Introduction

One of the main challenges that the public sector is facing is to direct citizens towards accessing public services through digital channels. Today, even when digital channels are available and of equally high standard, use of traditional channels remains high (Faulkner, Jorgensen & Koufariotis, 2019; Madsen & Kræmmergaard, 2016a). As a result, digital channels are added to existing channels rather than replacing them, leading to additional costs (Anthopoulos, Reddick, Giannakidou & Mavridis, 2016; Ebbers, Pieterse & Noordman, 2008).

To overcome this issue, several governments are actively encouraging their administrations to deliver public services exclusively through digital channels (e.g. Madsen & Kræmmergaard, 2016b). A mandatory strategy of this kind is one of many in the wide spectrum of multi-channel strategies, within the Multichannel Management (MCM) field of study, that public organisations can put into action to deliver their services (Pieterse, 2010).

So far, the literature on MCM mainly has focused on service delivery strategies and strategies for migrating to a new system in contexts where the end user can choose from a set of available channels (Madsen & Hofmann, 2019). However, the continuous adding of new channels has certain disadvantages from both an economic viewpoint and in terms of the quality of service delivered (Wirtz & Langer, 2017).

Several countries, among which Denmark (Madsen & Kræmmergaard, 2016b), India (Kumar, Sachan, Mukherjee & Kumar, 2018) and the Netherlands (Pieterse, 2010), are implementing or have already implemented a mandatory strategy for service delivery, where users are forced to access the service through a digital channel.

There is, however, scant evidence on how MCM concepts are applied in these settings (Madsen & Hofmann, 2019). Moreover, studies into mandated strategies mainly focus on the

user's perspective (Madsen & Kræmmergaard, 2015, 2018) or on government-to-business services (van den Boer, Arendsen, & Pieterse, 2016). Hence, further studies are still needed to fill this gap and investigate how public organisations design and implement multichannel strategies for government-to-citizen interactions in mandatory settings.

Therefore, the research answers two specific research questions. First, it deepens how to design a service delivery strategy that imposes to the final users the adoption of a digital channel. Second, it investigates how digital means modify the way a public entity must conceive its way of envisaging a service delivery strategy.

The research was conducted through four in-depth case studies (Yin, 2014), relying on several data sources: face-to-face interviews, phone conversations, follow-up emails, archival data. We focused on four local authorities in Italy that, from 2015 to 2018, started delivering their non-educational school services exclusively through the digital channel.

The article is structured as follows. Section 2 contextualises the research within the MCM field of study. Section 3 explains the methodology adopted. Section 4 reports on the results of the study, which are then discussed in Section 5.

## **2 Theoretical background**

### **2.1 Digital channels and user behaviour**

Recent studies demonstrate that traditional business channels (telephone, front desk, etc.) are still widely used, despite the many possible digital solutions on offer (e.g. Madsen & Kræmmergaard, 2016a). This situation creates a divide between ideal digital services, that bring about significant improvements in economic efficiency and government accountability, and the reality, where digital services are merely an additional cost burden on the administration (Anthopoulos et al., 2016; Ebbers et al., 2008). Pieterse & Ebbers, (2020)

demonstrate that, even though in the Netherlands from 2007 to 2017 the usage of digital channels increased, those channels cannot yet fully replace traditional ones.

Research in the stream of literature on Channel Choice (CC) has the purpose of understanding the reasons that induce people to select a given service delivery channel (Ebbers, Jansen, Pieterse & van de Wijngaert, 2016). Citizens will assess the service and its features and match them against the possible channels. According to Media Richness Theory (MRT), in particular, services differ according to the ambiguity and complexity of specific tasks, and channels through which governments and citizens communicate vary in terms of their communication “richness”, defined as their information-carrying capacity (Daft & Lengel, 1986). Citizens prefer channels that are high in richness (e.g. face-to-face) for complex and ambiguous tasks, turning to less rich channels (e.g. phone calls) only when the tasks are simpler, such as searching for information (Daft & Lengel, 1986). Although MRT theory was developed in the 1980s, before ICT gained momentum, the theory has recently been applied to several studies on digital public services, confirming that the lower media richness of digital channels meant that they were used less (Ebbers, Jansen & van Deursen, 2016; Madsen & Kræmmergaard, 2015; Reddick & Anthopoulos, 2014). However, Androutsopoulou, Karacapilidis, Loukis and Charalabidis (2019) have demonstrated that a channel’s richness changes over time and new digital technologies are increasing the richness of digital channels. Thus, innovative and well-designed digital channels can nowadays be adopted also for complex and ambiguous tasks.

MRT assumes that individuals behave rationally: they can clearly identify the pros and cons of each channel and consequently select one that is sufficiently rich. Other studies, however, have shown that rational choice theories cannot give an exhaustive picture of the drivers for choosing a particular channel. Therefore, several criticisms (see for instance Ebbers, Jansen, Pieterse, et al., 2016; Pieterse, Teerling, & Ebbers, 2008) to the MRT were moved, and the

theory was considered too simplistic for embracing the diversity of the elements that explain citizens channel choice.

Non-rational factors (Ebbers, Jansen, Pieterse et al., 2016) play a pivotal role as well, and choices are also based on habits. Thus, citizens prefer solutions requiring the least cognitive effort (Pieterse, Ebbers & van Dijk, 2007; Thaler & Sunstein, 2008), often selecting the default option (Faulkner et al., 2019). Personal and environmental characteristics, including values and emotions, can likewise influence channel choice (Pieterse et al., 2007; Reddick & Turner, 2012).

Lastly, user characteristics differ, meaning that a different set of bureaucratic competences, as well as of digital skills (Van De Wijngaert, Pieterse & Teerling, 2011), will influence the ambiguity and complexity of a task (Ebbers, Jansen, Pieterse, et al., 2016). Therefore the richness of a channel only exist as a perception (Pieterse, Teerling, & Ebbers, 2008).

Personal characteristics, such as age and education, seem to be good predictors of citizens' channel choices (Ebbers et al., 2008; Ebbers & van Dijk, 2007) even though a recent study demonstrates that channel preferences are along the years converging independently from users characteristics (Pieterse & Ebbers, 2020)

This examination of citizen behaviour offers an overview of the reasons underpinning a person's choice of channel, and is the first fundamental step that the public sector must take to identify the best strategies for managing service delivery. Starting from MRT theory and including the criticisms to this theory in the analysis, we argue that the intrinsic complexity and ambiguity of a given service, the media richness of the channel (Daft & Lengel, 1986), the users' irrational behaviour as well as their expertise (Ebbers, Jansen, Pieterse, et al., 2016) are all factors that must be considered when designing a multichannel strategy. This is especially relevant in mandated settings, where citizens are forced to use a specific channel.

## 2.2 Service delivery strategies

### 2.2.1 Types of intervention and actors involved

The public sector needs to design a service delivery strategy that addresses its duty of delivering a service to all citizens without discrimination, while respecting budgetary constraints and the need to optimise service channel management (Pieterse, 2010).

As argued in MCM literature, a proper *service delivery strategy* must combine two different areas of intervention:

- *Behavioural*, i.e. to change the users' behaviour and thence their selection of a specific channel (typically the digital one) (Faulkner et al., 2019)
- *Channel management*, i.e. to identify which services to open on each channel (Pieterse, 2010).

So far, scholars have often treated the two aspects separately and to date there is no comprehensive study that combines them into a unique strategy.

*Behavioural interventions* or “nudges” (Thaler & Sunstein, 2008) have an impact on how citizens use digital channels (Faulkner et al., 2019; John & Blume, 2017). A possible way to make digital services easier to adopt is for them to be seen as the default option (Faulkner et al., 2019), which involves reframing the delivery channel presentation. Users will change their behaviour towards the digital channel because: (i) they are unaware of there being any other option and (ii) the digital route appears to be the option with a better pay-off in the short term, since no mental additional effort is required (Faulkner et al., 2019). Another possible way is to introduce actions that create the “facilitating conditions” to help users access the service (Faulkner et al., 2019; Teo, 2010). These actions include skills training, encouraging users to engage positively with the digital channel and creating a new environment, by acting on self-efficacy and behavioural control (Rana, Dwivedi & Williams, 2015). Street-Level

Bureaucracy (SLB) is extremely relevant in this perspective, acting as a key player in executing behavioural interventions. SLB (Buffat, 2015; Lipsky, 1980) is a subset of a public agency consisting of all public officials who have direct and often face-to-face contact with members of the general public (Buffat, 2015; Reddick, 2005).

Pieterse (2010) provided a list of *channel management interventions*:

- Parallel positioning: public services are available over each channel and citizens are free to choose their favourite channel.
- Replacement positioning: channel(s) (particularly digital ones) replace the existing one(s).
- Supplemental positioning: each service is offered via the best channel(s) for that task.
- Integrated positioning: services are provided via all channels, but they are seamlessly integrated in order to guide users towards the “best” option.

A leading role is also played by intermediaries. These are defined as “any public or private organisation facilitating the coordination between public service providers and their users” (Bailey & Bakos, 1997). Several studies have demonstrated that the role of digital technologies is changing in public affairs, leading to disintermediation and/or re-intermediation (Bailey & Bakos, 1997; Janssen & Klievink, 2009; Löbel, Paulowitsch & Schuppan, 2016). Thus, public administration must consider the opportunity to take advantage of intermediaries when designing a service delivery strategy.

### **2.2.2 Mandatory setting**

Almost ten years ago, it was found that the public sector could feasibly impose a mandatory digital channel (Pieterse, 2010), although few papers currently address this specific topic (Chan et al., 2010; Kumar et al., 2018; Madsen & Kræmmergaard, 2015).

Focusing on the Danish government, Madsen and Kræmmergaard (2015) analysed how citizens become conditioned to using a mandatory digital channel, discovering that people

benefit from: (i) third party channels, like search engines and web banking; (ii) the simultaneous presence of multiple digital and offline (like phone-based) channels of communication. They also found that use of digital channels could be compromised if technical glitches occurred during their interaction and by the lack of feedback. The study underlined the complexity of a mandatory method, and users often turn to traditional channels when they come up against problems. In addition, there will always be those who need the conventional channels because they lack digital skills or because their circumstances are such as to preclude their requirements from being handled properly through digital media (Madsen & Kræmmergaard, 2015).

This paper analyses the topic from a different angle, exploring a mandated strategy from an organisational perspective, thus contributing to the MCM literature. In doing so, this article contributes towards filling a gap that has recently been highlighted by Madsen and Hofmann (2019) in their literature review. Keeping citizens' CC behaviour in mind, all four cases under study designed and implemented a multichannel strategy in a mandatory setting. This article aims to then generalise the findings that emerged and set the main features into theory, answering the questions listed in Table 1. Alongside the analysis of the strategy, evidence on the migration process and the actions undertaken to shift towards the new mandatory setting were also added, because these aspects are part of the necessary narrative explaining the design of the new strategy.

[TABLE 1 TO BE ADDED APPROXIMATIVELY HERE]



### **3 Research Methods**

This article has the aim of exploring the complex dynamics underlying the design of a mandatory strategy, retaining “the holistic and meaningful characteristics of real-life events” (Yin, 2014). Thus, it endorses an interpretative, inductive perspective (Eisenhardt, 1989b) based on case studies (Eisenhardt, 1989a).

#### **3.1 Case selection**

Our unit of analysis is the service delivery strategy, which comprehends the set of interventions and actors involved in delivering a service exclusively through a digital channel.

The study is based on several cases involving Italian local authorities. Italy is a particularly interesting context for discussing service delivery strategies. In 2019, it was the second to last European country for the adoption of digital channels (European Commission, 2019).

We deliberately selected only cases where the local authority had migrated to a mandatory online service delivery system between 2015 and 2018. The specific timeframe was chosen in order to balance the need of gaining a deeper perspective into recent migrations to digital channels with that of assessing the actual effectiveness of the undertaking ex-post.

We focused on non-educational school services, so that comparative analyses would be possible between the strategies in different local authorities. As shown in Table 2, the local authorities engaged in the study differ in terms of their geographic setting and demographic features. In our case, we are using the term non-educational school services to refer to actions that citizens must take in reference to several kinds of school requirements/benefits and, specifically, enrolling children to state schools and pre-schools within the local authority, registering them and paying for school lunches, registering them and paying for school bus transport, and signing them up to before and after school clubs and activities. All these non-

educational school services refer to a limited and usually younger target group, so their delivery is often the first chosen by local authorities for migration to a mandatory digital channel.

The cases in this study were selected according to a few simple criteria. Firstly, a list of local authorities was drawn up by searching online and building on expert professional advice<sup>1</sup>. Secondly, we identified the IT managers from each local authority in the list and asked them if they were willing to collaborate on the research. Finally, the list was narrowed down by geo-demographical characteristics, which are the predictors for users adopting digital channels (Budding, Faber & Gradus, 2018). A preliminary interview was carried out in all four cases, to test them for research compliance (verifying their active migration towards a mandatory digital channel).

[TABLE 2 TO BE ADDED APPROXIMATELY HERE]

Case A is a medium-sized local authority – serving an area of around 30,000 inhabitants – scattered over a wide territory with several districts and, therefore, various offices open to citizens needing to access a given public service. By introducing a mandatory digital channel, the local authority simplified the complex work of collecting and processing paper requests from different public service counters or bureaux.

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<sup>1</sup> The research group had the support of a 30 strong Advisory Board, including officials from the Italian Ministry of Digitisation, the National Agency for Digitisation, the National Association for Italian Municipalities, several experts in digital transformation within public settings and a number of digital solution providers for the Italian public sector. The Advisory Board made suggestions about the cases to be investigated and also helped the researchers to set the priorities for their analysis and interpret the empirical evidence while it was progressively being gathered.

Case B is a large local authority covering an area of more than 300,000 inhabitants but with a single public service counter for access to non-educational school services. The strategy to introduce a mandatory digital option also helped to shorten queues at peak times in certain periods and helped to free up staff, who could then provide assistance to users with complex needs. Moreover, the digital option only strategy automated the process of allocating places when the number available was limited.

Case C is the local authority in a small town with around 3,000 inhabitants. Before transferring to a mandatory digital channel, non-educational school services were carried out through a manual process.

Case D is a medium-sized local authority, serving around 30,000 inhabitants, with a high presence of foreign minorities. The municipality was able to determine how to deliver the non-educational school service through mandatory digital channels in a way that did not make it overly difficult or even impossible for these minority groups to access the service.

### **3.2 Data collection**

As suggested by Martin and Eisenhardt (2010), we relied on several data sources (Table 3). These involved face-to-face interviews, phone conversations, follow-up emails, archival data such as internal and public documents, press releases, websites and news articles. The primary data sources consisted of 12 semi-structured interviews conducted over ten months with IT managers, employees and the local authority supervisors for the educational sector. Case C, being particularly small, has a different organisation without a proper internal IT unit. We therefore interviewed the IT managers and employees from their relative “in-house company”<sup>2</sup>. In all cases, after the first interview, the other informants were contacted through

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<sup>2</sup> In Italy, in-house companies are specifically private companies that act as the operational arm of a public body.

a snowball technique (Patton, 2002) until additional interviews failed to unearth discrepancies in the categories or relationships that had already been identified or to reveal any new ones (Strauss & Corbin, 1990). The interviews were designed according to a standard protocol that evolved systematically during the research. Each interview lasted 60 to 90 minutes and was recorded and transcribed.

[TABLE 3 TO BE ADDED APPROXIMATIVELY HERE]

The study began by establishing the general research aims (Glaser & Strauss, 1967). In the first round of interviews, the focus was on how civil servants managed the process of migrating from several channels to a mandatory digital channel. As the data were collected and the analysis unfolded, the interviews increasingly concentrated on how local authorities changed their service delivery strategy, by modifying, replacing and/or setting up new channels of communication complementary to the digital channel (Andriopoulos & Lewis, 2009).

Potential informant bias was addressed in several ways. Firstly, the interviewers collected longitudinal data in real time and retrospectively in several waves (Leonard-Barton, 1990; Ozcan & Eisenhardt, 2009). Secondly, local authorities and informants were granted anonymity to encourage them to speak openly and candidly (Eisenhardt, 1989a, 1989b). Thirdly, the interviews were complemented with wide-ranging archival and observational data (Bingham & Eisenhardt, 2011). Fourthly, the questions were open-ended (Koriat, Goldsmith, & Pansky, 2000).

### 3.3 Case analyses

Following the recommendations for building multiple case theory (Eisenhardt & Graebner, 2007), within- and cross-case analyses were performed with no predefined hypotheses. Two authors began by building individual write-ups that triangulated all the data. Missing details were filled in after asking for further information by phone or email (Ozcan & Eisenhardt, 2009). The three other authors read the data independently to achieve an unbiased overview of the analysis. Each case in the final list was reviewed by the informants at the local authority engaged in the research.

All the researchers performed a within-case analysis to develop the preliminary concepts and sketch out the theoretical explanation (Bingham & Eisenhardt, 2011). Lastly, a cross-case analysis was conducted using replication logic across all the cases, to probe for alternative theoretical relationships and constructs that might fit the data better than the initial emergent theory (Gilbert, 2005). Numerous case pairings were applied to highlight the similarities and differences between the cases (Martin & Eisenhardt, 2010).

Once the cross-case analysis was underway, the researchers scoured the emergent theory, case data and literature back and forth in cycles to fine-tune the emerging construct definitions, abstraction levels, construct measures and theoretical relationships (Gilbert, 2005). The cycles continued until the researchers achieved a strong match between the cases and the emergent theory (Ozcan & Eisenhardt, 2009). To ensure convergence on a parsimonious set of constructs, we have only presented the most robust findings (Andriopoulos & Lewis, 2009).

Finally, two preliminary versions of the paper were presented at two different scientific conferences (xxx; xxx - *details omitted for anonymous reviewing*). On these occasions, we described the cases and results in order to gather feedback and suggestions on the theoretical

implications, in particular. One conference was on IT topics and the other one on Public Management, allowing the researchers to collect different viewpoints and so enrich the final results.

## **4 Results**

In analysing the cases, we found that the primary concern related to the redesign of the channels of communication and service delivery that would operate alongside the digital channel.

The auxiliary service delivery channels were activated to avoid excluding specific categories of citizens, while the complementary communication channels were used to inform the end users about the new digital only access method.

The local governments used four different types of channels: public service counters, remote support, intermediaries and street-level bureaucrats (Lipsky, 1980). In the remainder of this section, we will investigate how these channels were reshaped in order to set up a proper mandatory service delivery strategy, as a combination of channel management and behavioural interventions. Table 4 presents a summary of the main evidence collected.

[TABLE 4 TO BE ADDED APPROXIMATIVELY HERE]

### **4.1 Transformation to public service counters/bureaux**

As well as making the digital channel mandatory, public service counters were also transformed and redesigned.

In all four cases, the local authorities redesigned their public service counters in a way that would not exclude minority groups.

Case B and Case D had to address this issue because significant numbers of foreign minorities residing in their area were unable to access a digital device. To overcome this problem, Case B came to an agreement with the immigration office, which provided assistance in completing the necessary forms. In Case D, foreign residents could ask a multi-purpose help desk for assistance. According to the supervisor responsible for service delivering at Case B:

*“We came to an agreement with the immigration office. Now, when a foreign citizen finds the online procedure difficult, they can go to the immigration office. They still have to go through a digital procedure, but someone is there whose job it is to help them.”*

Moreover, all the interviewees declared that the digital channel was too inflexible and unable to cope with all the exceptions that could potentially emerge. According to the person responsible for non-educational school services at Case B:

*“We have two members of staff at the call centre who arrange appointments for users needing specific help. There are some non-standard situations that are particularly difficult to manage online – for example, we had someone with triplets and the online service couldn’t handle it. We have staff qualified to help in these special cases.”*

In Italy, the civil registry office falls under local authorities and a school serviced by Case D was near the boundary with another local authority. As a result, some pupils were not in Case D’s civil registry, and so were not recognised automatically by its digital procedure. To

manage this situation, the local authority invited the interested parties to make an appointment at their office. According to their information sheet:

*“Citizens from [municipality near Case D] enrolling to schools in [Case D] should call the following number to book an appointment at our office where they can submit their application [...].”*

In all four cases, the brick-and-mortar information centre was transformed from a place where people filled in printed forms to a support centre, where public officials would help them access the online service. All four local authorities set up a series of public service counters or bureaux, each handling a different set of user needs. This change led to a better level of service offered. Thus, we conclude that:

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*P1. The public service counter/bureau must be redesigned to introduce a complementary physical location where citizens for whom digital services are difficult to access (e.g. minorities affected by the digital divide) can be assisted by a civil servant.*

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## **4.2 Strengthening remote assistance**

Our case studies have set up a precise plan to strengthen their remote communication channels. There can be technical issues as well as problems linked to the digital divide, and users must have a responsive communication channel when they need help to solve a technical matter.

All four cases have introduced a direct help desk phone number and provide assistance by e-mail. All the interviewees declared that their remote assistance had been strengthened and improved; staff was committed to answering the users' questions rapidly and two local authorities installed new communication channels. For instance, Case C offered remote



computer assistance with the backing of its in-house company. In the words of the IT manager:

*“We have introduced a type of assistance that allows us to access the user’s computer remotely, so we fill in the form together and submit it during the phone call.”*

Case C was the only one amongst those selected to implement an online chat system, asking users to give a telephone number if they needed to talk to someone directly. As stated by the IT employee:

*“Before calling us by phone, users with problems often use our online chat line, which works in real time and is available about 12 hours a day. We answer all questions straight away.”*

Case D, instead, created an ad hoc WhatsApp chat for questions about the online service. More generally, all four cases adapted their remote communication channels to be more receptive to their users’ needs. They provided a telephone number for users who prefer a more direct contact, confirming that the telephone is the media richest of all remote communication channels.

Case C’s experience of using a chat line and Case D’s of using a WhatsApp chat shows that new technologies can be more responsive to citizens' needs. Thus, we conclude that:

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*P2. The remote communication channel must be strengthened to compensate for the absence of a face-to-face channel. New technologies can enable richer digital communication channels, such as online chats.*

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### 4.3 Service delivery intermediation

All selected cases, in moving towards a mandatory digital channel, introduced also intermediaries at the payment step, as well as for providing assistance to people with little or no internet access.

In fact, people could pay for school benefits (lunches, bus transport and before and after school clubs) at tobacco shops, as the latter are linked into the Italian national payment platform<sup>3</sup>, and the process is particularly complex.

Local authorities realised that it was crucial for them to be involved in the process of migrating to a purely online system from the beginning. All of them implemented training courses for the intermediaries to make sure they had the required level of expertise.

In Case C, the mayor, joined by technical experts from their in-house company, visited all the tobacco shops in person to explain the new delivery process and their (the tobacco shops') pivotal role. As stated by the mayor:

*“We let them know that people would start coming to pay for school lunches and bus transport, and what kind of documents they would have to show. We took a replica of the payment notification with us and ran some payment trials together.”*

Case D recorded a similar experience, with their IT staff training the tobacco shop owners. However, Case D was already using the local supermarket as an intermediary and payment channel, but this pre-existing situation became problematic. The organisational set-up was particularly complex, and the local authority was unable to give the right information to the

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<sup>3</sup>The Italian central government recently implemented a national payment system known as PagoPA to manage all electronic payments made by individuals and companies to the public sector. This nation-wide platform enables all public bodies to carry out all the accounting for payments from citizens and businesses in Italy automatically through an interconnected system linking all payment service providers (PSPs, i.e. banks, private credit unions, public entities allowed to receive payments) to the public bodies' financial and accounting systems.

staff who acted as points of contact with the end users. This created obstacles in the system and the final decision was to shut down this payment channel. As described by the IT manager:

*“We asked the supermarket manager to inform his staff. However, some of them were not given the information and people continued to use self-service machines that were not set up for these kinds of payment. We had problems in monitoring the cash flow. In the end, to solve the matter, we had to close that payment channel.”*

In all four cases, free internet was provided at the public library (sometimes as a new service, sometimes by retaining an ongoing one), and people on site could provide assistance if required. In Italy, libraries are not true intermediaries because they are managed directly by the local authority. However, their function and tasks are de facto similar to those described in previous studies for other countries (see, for example, Taylor et al. 2014). For coherency with the actual body of knowledge and to allow results to be compared in future studies, we placed them among the other intermediaries. As stated by the IT manager in Case A:

*“The public library has had a public workstation with internet access for the past 15 years. Users can go to the website and fill in the online form.”*

Case C is the most interesting case regarding library involvement. It installed a workstation in the public library at the same time as digital access to non-educational school services became the only option. The purpose was to help people bridge the digital divide and also as a behavioural intervention to encourage a change in people's habits. In the mayor's words:

*“Internet access in the library was just an excuse: if we hadn't put it in, we would have given people grounds to complain and come to our office. We*

*would have been bogged down at the municipality and would have inevitably directed people towards the simplest solution.”*

The analysis of all four cases confirms the findings of previous studies about the importance of intermediation in delivering a public service. Intermediaries acquire an even more significant role when the service is delivered through a digital channel and there is no other option. Thus, we conclude that:

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*P3. Intermediaries play a central role in (partially) delivering the service and supporting users with little or no internet access. Local authorities must ensure that the intermediaries possess adequate digital skills and the proper knowledge of the digital system and train them appropriately.*

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#### **4.4 Involvement of street-level bureaucrats**

In our study, we restricted the concept of SLB to public sector personnel who were not involved in the delivery of the services investigated in the study, i.e. school/pre-school enrolment and registration and payment for specific school requirements/benefits. Street-level bureaucrats are part of the ecosystem of players at the front-line of interaction with the end users. In our study, the street-level bureaucrats are school bus drivers, teachers, janitors and staff manning information points.

In all four cases, the work to impose a mandatory digital channel were backed up by the actions taken by street-level bureaucrats. Staff who generally interact with the public were give specific training, as they help to create the “facilitating conditions” by answering questions and addressing doubts, problems and complaints. The IT manager at Case B recognised that the street-level bureaucrats’ involvement is fundamental:

*“A major problem in organisations is that managers don’t give staff who are the contact point for families all the information they need about changes to service delivery.”*

Teachers and school staff in the same local authority were informed about the change in system. The local authority recognised that the public often called the school to learn when events were being held (such as the school’s open days), these also being occasions when teachers could tell them about any new situation. As stated by the supervisor for non-educational school services in Case B:

*“People knew because of the open days we held to show off the school. Teachers, educators and staff were informed. [...]. People who work at the nursery and the school and those who answer phone calls must be the first to be informed about these changes, because anyone coming up against problems when trying to use the digital service will always call them first.”*

Case C carried out a series of initiatives to involve and instruct the teachers, as they interact with families regularly and so had to be able to explain how the service now worked. As stated by the supervisor for non-educational school services:

*“Teachers were chosen because they are more likely to be in touch with families, and also because families respect them and see them as accountable. Teachers have the right communication skills to explain what’s new in how the service is delivered and can collect feedback (for example listen to people and understand what they find most challenging).”*

In Case D, school bus drivers were identified as the most suitable actors, as they had daily contact with a high number of families. The local authority prepared explanatory leaflets and

asked the bus drivers to deliver them to the school children. As stated by the supervisor for non-educational school services:

*“We can communicate to our families through the school bus drivers. We print our leaflets and give them to the school bus drivers, who then hand them out to the children, telling them to take them home to their parents.”*

In the cases being analysed, street-level bureaucrats were found to be essential in migrating to the mandatory online system. Street-level bureaucrats interact with citizens continuously and were informed about the procedural changes in order to be able to answer questions and manage complaints. In some cases, the local authorities designed initiatives involving the street-level bureaucrats so that they could tell end users about the changes. Thus, we conclude that:

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*P4. Because of their day-to-day contact with citizens, street-level bureaucrats play a leading role in supporting the process of migration towards a mandatory digital channel. They spread information about the new service delivery channels so that citizens are aware of the changes, as well as addressing the users' concerns and problems.*

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## **5 Discussion**

A comprehensive analysis of all four cases suggests that two categories of complementary channels come into play when delivering a public service exclusively through a digital channel, and they can be direct or indirect (displayed in the x-axes in Figure 1). The direct complementary channels are those controlled directly by staff at the local authority delivering the service. The indirect complementary channels are controlled by third parties.

[FIGURE 1 TO BE ADDED APPROXIMATELY HERE]

One or other complementary channel is used depending on (y-axes in Figure 1):

- *channel management interventions* (assistance), when the channel is media richer than the digital one (Daft & Lengel, 1986) and is used to deliver the service (Pieterse, 2010) or to assist users (Androutsopoulou, Karacapilidis, Loukis, & Charalabidis, 2019);
- *behavioural interventions* (dissemination), when the channel is used to spread word of the change in system and contribute towards making the digital channel palatable to users (Faulkner et al., 2019).

As reported in Figure 1, four complementary channels emerging from the four cases can be positioned in the matrix:

- Public service counters/bureaux become places where users are helped to complete the online procedure. These places are sometimes used to spread news about the changes, showing users how to access the digital channel correctly and how to complete the procedures independently when required.
- Remote support desks offer assistance in simple matters. Cases C and D demonstrate that new technologies can leverage on the remote communication channel and introduce other channels that are more responsive, such as live chat lines or WhatsApp chats.
- Intermediaries deliver the service and assist users with limited digital skills and/or restricted access to the internet (for example, public libraries).
- Street-level bureaucrats play a central role in disseminating the changes, giving information to citizens and therefore supporting the local authority in turning the digital channel into the default channel for everyone.

Service delivery in mandatory setting emerges as an interesting and promising field in the characterisation of MCM studies.

Firstly, the study confirms the usefulness and limits of MRT. It highlights the need to embrace greater complexity. While, on the one hand, it is true that channels differ for their richness, on the other hand, this richness is strongly dependent on the type of end users and, therefore, public organisations should question how a specific category of users perceive the richness of a channel.

Secondly, a clear distinction should always be made between channels used to deliver a service and channels used to provide assistance, although both are affected by digitisation, confirming previous studies (Lindgren et al., 2019). On the one hand, the public sector can consider whether to digitalise their service delivery channels entirely, making concessions only for certain minorities. On the other hand, if only digital channels are available, then user support channels will become more important, as public bodies must ensure assistance when users lack the proper bureaucratic competence or when technical glitches emerge (Androutsopoulou et al., 2019). In this case traditional channels cannot be fully replaced by digital channels and telephone support must, on the contrary, be strengthened. The importance of the telephone is coherent with the results of previous studies (Pieterse & Ebbers, 2020). Digital channels can, in turn, increase the variety and the richness of communication channels, by introducing, for instance, systems of instant messaging, like in Cases C and D.

Thirdly, the way a service is delivered must be completely redesigned. The public sector must rethink the function of public service counters/bureaux, and actors able to support the new strategy must be included within the strategy itself. Intermediation - and re-intermediation when intermediation is re-established after a pause - helps to keep the service fully digital,



while, at the same time, offering a richer channel for users who need it. Street-level bureaucrats play a pivotal role in supporting users during the process of migrating towards the new channel, especially in the case of a mandatory system, where no physical service desk/office is open to the public.

Lastly, the stream of CC literature must certainly be taken into consideration, not to influence citizenship behaviour and ensure migration towards a digital channel (Ebbbers, Jansen, Pieterse, et al., 2016) that is mandatory by default, but rather to make sure that the new service delivery system is accepted.

Moreover, the evidence collected by analysing the mandatory strategy offers some insights that go beyond the specific strategy under investigation and can enrich MCM literature, as well as being applicable to those that are non-mandatory. As stated by Wirtz and Langer (2017), a completely multichannel strategy - i.e. the delivery of all services through all available channels - would appear no longer to be a practicable solution nowadays, due to its high costs and the risk of decreasing effectiveness. Therefore, public sector bodies must (i) identify and activate only a few channels for each service, to balance efficiency and effectiveness and (ii) nudge citizens' behaviour as the means for driving change towards the use of digital channels.

The local authorities being analysed set in place management interventions to compel people to use the online service if they had the means and resources to do so. At the same time, they provided face-to-face communication channels whenever it made sense (Daft & Lengel, 1986), because of the perceived complexity or ambiguity of the tasks. *Behavioural interventions* (Faulkner et al., 2019; Teo, 2010; Thaler & Sunstein, 2008) were taken into consideration to guide the users towards the new strategy.

This evidence highlighted new factors that must be combined with those listed by Pieterse (2010). Figure 2 provides a revised model for *channel management interventions*, proposing a model that is more complex and complete. Looking at Figure 2, if the channel band is on top of the task band, then that channel can be used for the task; otherwise not.

[FIGURE 2 TO BE ADDED APPROXIMATELY HERE]

Personal characteristics (like education, age and income), environmental aspects (like a person's place of residence), bureaucratic competences and digital skills change the perceived complexity and ambiguity of a service (Ebbers, Jansen, Pieterse, et al., 2016; Van De Wijngaert et al., 2011). Firstly, users should be divided into several categories, where each category consists of users who, whether through personal features or environmental aspects, view the service's complexity and ambiguity in a similar way.

Secondly, public services must be divided into different sub-tasks, with channel management interventions being put into action for each task. Every task differs in its perceived complexity and ambiguity and requires a communication channel with a different level of richness (Daft & Lengel, 1986).

Figure 3 represents this model applied to the mandatory digital channel in one particular non-educational school service. The figure shows an overall service delivery strategy that includes evidence from all the case studies. However, understanding the users' characteristics, skills and behaviour is a necessary precondition for defining the user categories that can be applied in each specific context (for example, in Case C, there are no specific problems linked to foreign minorities using the system).

[FIGURE 3 TO BE ADDED APPROXIMATELY HERE]

Finally, suitable channels must be selected along with the actions that influence citizens' behaviour. Table 5 presents a summary of the main properties of a service delivery strategy.

[TABLE 5 TO BE ADDED APPROXIMATELY HERE]

## **6 Conclusions**

This paper explores a mandatory strategy for delivering a public service digitally, presented as a feasible solution within the MCM options available to a public sector body. Moreover, it offers actionable knowledge to public sector managers required to design a strategy that includes actions to change user behaviour, as well as making a mix of channels available, based on how users perceive the complexity and ambiguity of a task within a service.

We claim that there is the need to present this strategy as feasible, and to carry out further studies to explore the strategy from different perspectives, in different countries or for a different set of services. For instance, further analysis should explore the legitimacy of this choice from a theoretical viewpoint or take into consideration the citizens' perspective.

Moreover, the article gives room for further studies into the role of intermediaries and street-level bureaucrats, which we found play a pivotal role in the delivery process and are still under-investigated in MCM and CC streams of literature. Finally, we are aware that the migration process was not investigated exhaustively in the study, thus research should be

carried out in greater detail, including into aspect of organisational and cross-organisational change.

Lastly, we offer some insights that go beyond the specific strategy being investigated, meaning that it can be generalised for non-mandatory strategies. We have proposed a new model for defining proper channel management interventions and have gained useful insights into how they should be combined with behavioural interventions. We are aware that these insights have emerged from the analysis of a single strategy focused on Italian non-educational school services, therefore further studies should be conducted to validate this framework and ensure its reliability.

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## Figure Captions

Figure 1. A matrix for classifying complementary service delivery channels

Figure 2. Channel management interventions model

Figure 3. Channel management interventions model applied to a mandatory digital channel

Table 1. CC and MCM key concepts and related research questions

CC key concepts	MCM related interventions	Mandatory setting related questions
<ul style="list-style-type: none"> <li>• Citizens prefer richer channels for complex and ambiguous tasks</li> <li>• Less rich channels are often used only for simple tasks such as searching for information</li> <li>• New digital technologies are increasing the richness of digital channels</li> <li>• Different users have different bureaucratic competences and digital skills that influence the perceived ambiguity and complexity of a task</li> </ul>	<ul style="list-style-type: none"> <li>• Channel management interventions</li> </ul>	<ul style="list-style-type: none"> <li>• How to eliminate the richer and often preferred channel?</li> <li>• How to support weaker users i.e. users with low bureaucratic competences or digital skills?</li> <li>• How can intermediaries contribute towards the service delivery process?</li> </ul>
<ul style="list-style-type: none"> <li>• Citizens make choices based also on habits and prefer the solutions requiring the least cognitive effort</li> </ul>	<ul style="list-style-type: none"> <li>• Behavioural interventions or nudges</li> </ul>	<ul style="list-style-type: none"> <li>• How can changes to the process be communicated to end users and how can they become convinced to accept the new solutions?</li> <li>• How can street-level bureaucrats support the change?</li> </ul>

Table 2. Summary of cases

	Case A	Case B	Case C	Case D
Geographic location	North-East	North-West	North-West	North-East
Inhabitants	Around 30,000	Around 300,000	Around 3,000	Around 30,000
Surface (km <sup>2</sup> )	Around 170	Around 100	Around 30	Around 10
Main sponsor	IT manager	School Services division manager	Mayor	IT manager
Focus of the mandatory digital channel	<ul style="list-style-type: none"> <li>• Enrolment to local authority schools and pre-schools</li> <li>• Registering to before and after school clubs and activities</li> </ul>	Enrolment to local authority schools and pre-schools	<ul style="list-style-type: none"> <li>• Registering and paying for school lunches</li> <li>• Registering to before and after school clubs and activities</li> </ul>	<ul style="list-style-type: none"> <li>• Enrolment to local authority schools and pre-schools</li> <li>• Registering and paying for school bus transport</li> <li>• Registering and paying for school lunches</li> </ul>
Frequency of the requests	Once a year	Once a year	Several times a year	Several times a year

Table 3. Sources of information

	Interviews	Project documents	Other sources
Case A	<ul style="list-style-type: none"> <li>• 2 interviews with IT manager</li> </ul>	<ul style="list-style-type: none"> <li>• Project plan</li> <li>• Citizen newsletters</li> <li>• Online information sheets</li> <li>• Platform analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Informal conversations with sponsors</li> <li>• Municipal strategic plan</li> <li>• Municipal political programme</li> </ul>
Case B	<ul style="list-style-type: none"> <li>• 1 interview with School Services division manager</li> <li>• 2 interviews with IT manager</li> </ul>	<ul style="list-style-type: none"> <li>• Project plan</li> <li>• Project presented at conference</li> <li>• Online information sheets</li> <li>• Platform analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Informal conversations with sponsors</li> <li>• Municipal strategic plan</li> <li>• Municipal political programme</li> <li>• On-site visits by School Services division</li> <li>• Project presented at conference</li> </ul>
Case C	<ul style="list-style-type: none"> <li>• 1 interview with the mayor</li> <li>• 2 interviews with in-house IT manager</li> <li>• 1 interview with in-house IT employee</li> </ul>	<ul style="list-style-type: none"> <li>• Project plan</li> <li>• Project presented to citizens</li> <li>• Project presented at conference</li> <li>• Online information sheets</li> <li>• Platform analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Informal conversations with sponsors</li> <li>• Municipal strategic plan</li> <li>• On-site visits by School Services division</li> <li>• Project presented at conference</li> </ul>
Case D	<ul style="list-style-type: none"> <li>• 1 interview with School Services division manager</li> <li>• 2 interviews with IT manager</li> </ul>	<ul style="list-style-type: none"> <li>• Project plan</li> <li>• Citizen newsletters</li> <li>• Online information sheets</li> <li>• Platform analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Informal conversations with sponsors</li> <li>• Municipal strategic plan</li> <li>• Municipal political programme</li> <li>• On-site visits by School Services division</li> <li>• Project presented at conference</li> </ul>

Table 4. Main evidence from the four cases

MCM concepts	Issues	Strategic choices	Examples
Channel strategies – service delivery channels	<ul style="list-style-type: none"> <li>• Assistance for weaker users</li> <li>• Assistance for complex tasks</li> <li>• Management of exceptions not mapped a priori</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory digital channel for ‘traditional users’</li> <li>• Customised face-to-face channel for weaker users and those with exceptional needs</li> <li>• Re-intermediation for complex tasks</li> <li>• Re-intermediation to support weaker users</li> </ul>	<ul style="list-style-type: none"> <li>• Immigration office as a service delivery channel for foreign users</li> <li>• Library as a place providing assistance for self service delivery</li> </ul>
Channel strategies – communication channels	<ul style="list-style-type: none"> <li>• Support for technical problems</li> <li>• Support for users with low bureaucratic competences</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen remote support by e-mail and telephone</li> <li>• Introduction of new digital communication channels</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction of online chat lines</li> <li>• Quick replies to e-mail and phone requests</li> </ul>
Channel integration	<ul style="list-style-type: none"> <li>• Single channel to receive completed forms</li> </ul>	<ul style="list-style-type: none"> <li>• Face-to-face delivery channel exclusively for online self-service support</li> </ul>	<ul style="list-style-type: none"> <li>• Digital procedures only, with assistance if needed</li> </ul>
Channel migration	<ul style="list-style-type: none"> <li>• Dissemination of changes to system</li> <li>• External actors’ awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Street-level bureaucrats ensure user awareness and acceptance</li> <li>• Training for intermediaries</li> <li>• Street-level bureaucrats involved from the beginning</li> </ul>	<ul style="list-style-type: none"> <li>• School staff and teachers inform users about changes</li> </ul>



Table 5. Characteristics of service delivery strategy

	Service delivery strategy	
	Channel management interventions	Behavioural interventions
Goals	Selecting proper mix of channels for users, based on the perceived complexity and ambiguity of a task within a service	<ul style="list-style-type: none"> <li>• Ensuing user awareness and acceptance of a channel management intervention</li> <li>• Guiding users towards the default channel(s) that are available for each category</li> <li>• Answering users' basic questions and complaints</li> </ul>
Expected impacts	Efficiency in providing the service	Increase users' perceived quality of public services
Role of technologies	Digital service delivery	Online remote support
Actors involved	<ul style="list-style-type: none"> <li>• Staff at remote support public service counters/bureaux</li> <li>• Staff in the School Services division</li> <li>• Intermediaries</li> </ul>	<ul style="list-style-type: none"> <li>• Staff at public service counters/bureaux</li> <li>• Back-office staff</li> <li>• Street-level bureaucrats</li> </ul>

Figure 1

Role	Assistance	Remote support Public service counters / bureaux	Intermediaries
	Dissemination	Public service counters / bureaux	Street level bureaucracy
		Direct	Indirect
Type of complementary channel			

Figure 2

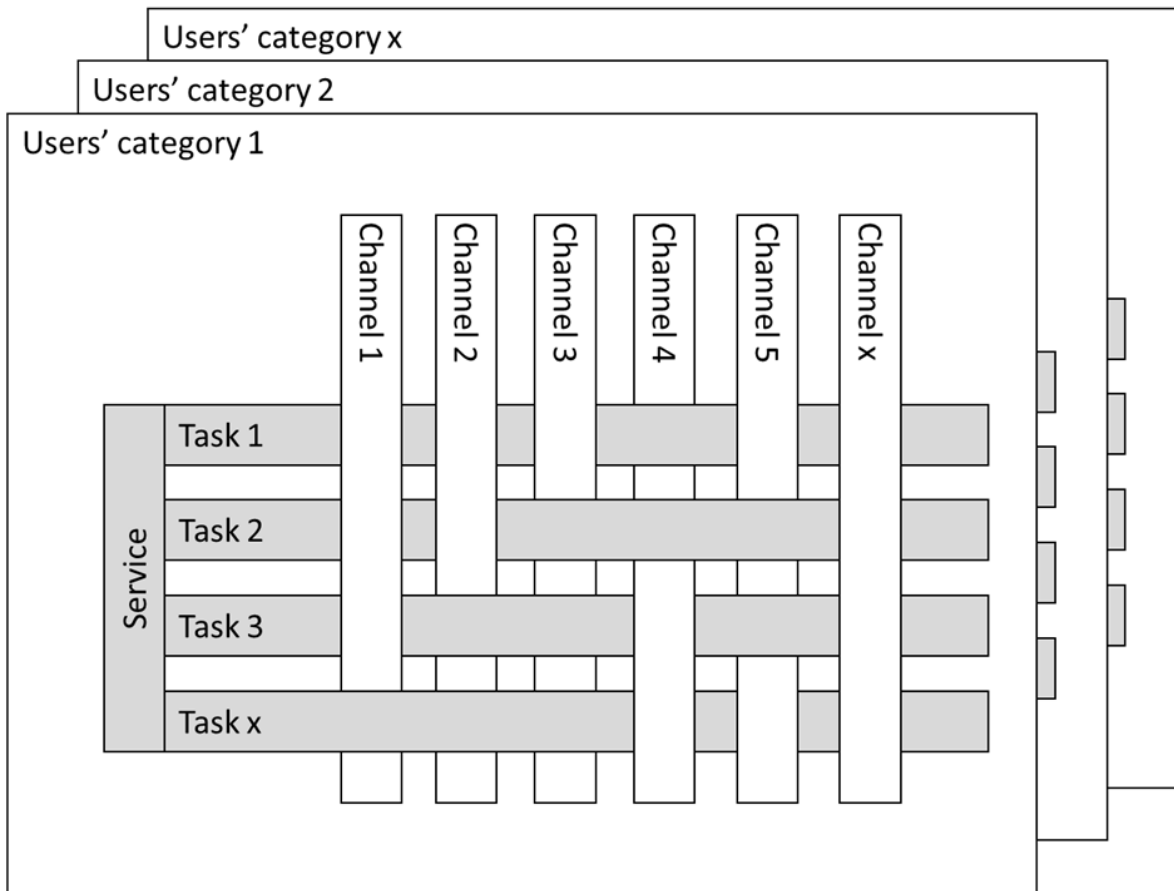


Figure 3

