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From Bureaucracy to Citizen-Centricity:
How the Citizen-Journey Should Inform the Digital Transformation of Public Services

Deepak Saxena, Indian Institute of Technology, Jodhpur, India*
https://orcid.org/0000-0002-9331-3799
Laurent Muzellec, Trinity College Dublin, Ireland
Joe McDonagh, Trinity College Dublin, Ireland

ABSTRACT

Organisations, including public service organisations, are increasingly adopting a digital transformation strategy, and deploying digital capabilities to enhance customer experience. However, digital initiatives in public services often focus more on the technology with relatively less regard to the citizen for whom the services are designed. To address this lacuna, this study contextualises the digital transformation of public services by focusing on the citizen. This study is based on data collected in the conduct of two projects involving public services within an EU member state. Based on the analysis of the citizen-journey in availing of public services, five common pain-points are identified – information inconsistencies, intricate website navigation, bureaucratic jargon, disconnected multichannel touchpoints, and a lack of real-time online support. To alleviate the pain-points, the authors offer five insights based on academic insights and international benchmarking.

KEYWORDS

Citizen Centricity, Citizen Journey, Customer Journey, Digital Transformation, e-Governance, e-Government, m-Governance, Pain Points, Public Services, Smart Governance

INTRODUCTION

Digital transformation is the process of using digital technologies to renew organizational processes, culture, and customer experiences (Kane, Palmer, Phillips, Kiron, and Buckley, 2015; Vial, 2019). However, it is not about the technology alone (Andriole, 2017; Furr and Shipilov 2019; Tabrizi, Lam, Girard, and Irvin, 2019). Along with technology deployment, leading corporations use marketing techniques such as consumer journey mapping to design positive customer experiences (Becker and Jaakkola, 2020; Lemon and Verhoef, 2016). As user experience is driven by the degree of effort that is required to access a product or service, simplifying the consumer journey and reducing the number of

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*Corresponding Author

touchpoints has become a top priority for many digital and non-digital companies (Maechler, Neher, and Park, 2016; Rawson, Duncan, and Jones, 2013). Digital masters excel in this domain. Amazon's one-click ordering feature for example erases several touchpoints and epitomizes corporate concerns to make the consumer's journey as short and frictionless as possible.

Such digital transformation also concerns governments' services. A survey conducted with over 1200 government officials from around 70 countries (Eggers and Bellman, 2015) notes that around 76 percent of respondents think that digital technologies have the potential to disrupt the public sector. In practice however, public services seem to be lagging, much to the frustration of citizens (Castelnovo and Sorrentino, 2018; Carvalho and Brito, 2012; Munro, 2020). One of the possible reasons for such users' frustrations may be due to approaching digital transformation as a technological process with relatively less regard for the citizen for whom services are designed (Curtis, 2019; Janowski, 2015).

The Covid-19 pandemic has accelerated the digitalization of public services (Agostino, Arnaboldi, and Lema, 2020). Application of digital technology is part of the solution to fundamentally transforming the relationship between the public service and the citizen (King and Cotterill, 2007; Eggers and Bellman, 2015; Nili, Barros, and Tate 2019). However, digital solutions need to be paired with a fundamental cultural and organizational shift from a bureaucratic orientation to a citizen-centric focus (Claver, Llopis, Gascó, Molina, and Conca 1999; Curtis, 2019; Mergel, Kattel, Lember, and McBride, 2018). As Colin MacDonald, Chair of OECD e-Leaders notes, "If governments are to stay relevant, we need to be willing to fundamentally rethink how we serve our citizens" (MacDonald, 2017).

A citizen-centric approach towards public services would improve citizen satisfaction and support the digital transformation of services. Yet very few studies address the digital transformation challenge from the citizen perspective. A key issue with such studies is that they largely confine themselves to the public administration perspective and hence, sometimes fail to offer actionable and relevant solutions. In this regard, public services may draw from a similar perspective from services marketing – customer journey. The concept of customer journey and pain points has long been applied in the marketing domain but less so in the governance of public services. By drawing both from the public administration literature as well as the literature on services marketing, this study offers a holistic analysis and corresponding solutions. Thus, it addresses a gap in the literature by holistically considering the citizen journey and its pain points in accessing government's digital services. Moreover, unlike other studies that focus on select services at a single instance, this study analyses a number of public services. The point of departure of the study is an advisory project, which was conducted over a two-year period for the government of an EU member state. The initial brief was to map the citizen journey while accessing government services at key moments of their lifetime (e.g., getting a first job, getting married, getting a driving license etc.). The extensive data collected as part of this project forms the basis for this study.

The research question for this study is: *What are the most common issues encountered by citizens when availing e-government services and how can governments erase those pain points?* The next section briefly discusses past transformation initiatives and the role of citizen-centricity in digitization of the public service. This is followed by a description of the research context and methodology adopted for this study. Thereafter, key insights for citizen-centric digital transformation of public services are offered, using examples from all over the world. The final section notes the impact of the Covid-19 pandemic on the digital transformation of public services.

THEORETICAL BACKGROUND

Transformation *of* Public Service

Transformation of public services is not a new idea. Even before the digital revolution, the new public management (NPM) movement, widely popular in the 1980-90s (Dunleavy and Hood, 1994;

Hood and Dixon, 2015), focused on bringing insights from the private sector to the public sector. This was done with the expectation that bringing successful practices from the private sector would transform the public service. A major strand of the NPM movement focused on the implementation of managerial solutions such as total quality management or business process reengineering, often with information technology implementations to transform public services. Arguably, a key focus of the NPM movement was towards improving the efficiency of public spending (Mandl, Dierx, and Ilzkovitz 2008). However, the overall evidence on the efficacy of NPM initiatives is mixed at best, both for technical (Weerakkody, Janssen, and Dwivedi 2011) and managerial (Alonso, Clifton, and Díaz-Fuentes, 2015; Hood and Dixon, 2015) initiatives.

The NPM movement was followed by what is often called e-Government, referring to the use of information and commination technology for government data processing and for the delivery of public services (Janowski, 2015). The expectation was that technology would transform the relationship between the citizen and government by opening digital channels for interaction. Despite some celebrated success stories, the impact of e-Government initiatives has been limited, or in some cases even negative. For instance, scholars report e-Government projects from India, which after initial success, stopped working either due to a lack of take-up by citizens (Dé and Ratan, 2009), or due to the apathy of staff (Kumar and Best 2006). Similarly, Lin and Myres (2015) report an e-Government project from Taiwan focusing on the education and development of aboriginals. While the project was considered a success by the government, the authors report the story of alienation of aboriginals who did not have a significant say or interest in the project.

A key reason that NPM and e-Government initiatives find it difficult to achieve intended objectives is that they often do not focus on the target customer of the public service (i.e., citizen) when designing the service. Instead, most public agencies tend to follow their own existing processes and what suits them best (Dudley, Lin, Mancini, and Ng, 2015), often leaving the citizens with a cumbersome experience. This is counter-productive since the experience remains a key mechanism determining public satisfaction with government services (Correa-Ospina, Saxena and Díaz Pinzón, 2021). In other words, instead of striving for digital transformation, they limit themselves to IT-enabled organizational transformation (Wessel, Baiyere, Ologeanu-Taddei, Cha, and Jensen, 2020). However, this is not without reason. Scholars (Agostino et al., 2020; Bertot and Jaeger, 2008; Castelnovo and Sorrentino, 2018) note that there is a fundamental contradiction between offering efficient public service (i.e., public agencies requiring least effort and resources in providing the service) and providing citizen-centric services (i.e., offering services in a way that may not be optimal for the public agency, but offers superior service quality to the citizen).

Incorporating Citizen-Centricity in Public Services

A key reason that governments fail to provide a citizen-centric service is that this requires continuous understanding of and responding to citizen needs (King and Cotterill, 2007), thereby making it a time-consuming and costly exercise. The personal experience of the citizen weighs heavily in the evaluation of public services, resulting in positive word of mouth (Carvalho and Brito 2012; Correa-Ospina et al., 2021), promoting further use of the service. However, if public services are not used by citizens, there is no point in the service being efficient.

Therefore, for digital transformation to succeed, it needs to go beyond technology (Andriole, 2017; Furr and Shipilov 2019; Tabrizi et al. 2019) and embrace collaboration and citizen experience in the design of public services. Used in this manner, citizen-centricity coupled with digital technology may help in the co-creation, co-production, and co-management (Blomkamp, 2018; Lember, Brandsen, and Tõnurist, 2019; Osborne, Nasi, and Powell, 2021) of public services. Customer centricity relies on the ability to establish a dialogue with customers to develop customer intimacy (Lamberti, 2013). This collaborative dialogue co-creates citizen experiences that are valuable for both government and the citizen (Martin and Webb, 2009).

To incorporate citizen's experience in the design of public service, the analysis of the citizen-journey is sometimes suggested (Dudley et al. 2015; Scholta, Halsbenning, Distel, and Becker, 2020). The consumer or citizen-journey refers to the steps that a service user needs to undergo when availing of a service (Becker and Jaakkola, 2020; Lemon and Verhoef, 2016). For traditional products and services, the journey comprises three stages: pre-purchase, purchase, and post-purchase (Puccinelli, Goodstein, Grewal, Price, Raghubir, and Stewart, 2009). Touch points along the journey are key interactional moments between the service provider (e.g., the firm or the government) and the customer. The quality of those interactions directly affects the overall user experience (Maechler et al., 2016; Rawson et al., 2013). These interactions are termed 'moment of truth' in which users form or change an impression about that brand, product, or service (Lecinski, 2011, Muzellec and O'Raghallaigh, 2018) based on the quality of the interaction. The number of touchpoints as well as the quality of interaction (i.e., presence of pain-points along the journey) affects the overall experience and satisfaction of consumers (Maechler et al., 2016; Rawson et al., 2013). Analysing the customer journey offers an opportunity to "determine whether and how new approaches and technologies may be able to remove friction or pain-points" (Lemon and Verhoef, 2016, p 16).

The analysis of the citizen-journey and pain-points may act as a useful guide in designing or adapting the service towards citizen-centricity. Hence, contextualizing citizens' motivations and describing citizen's journey are the starting point of our study towards a citizen-centric public service. A map of the citizen-journey and associated pain-points is then used to improve the service in terms of easing pain-points and avoiding unnecessary steps in the service process. The next section outlines the context of our study and how the research was conducted.

RESEARCH DESIGN

This study is an in-depth exploration of citizen journeys and associated interactions with government services. It is based on data collected during two advisory projects with the public service system in an EU member state. The remit of the projects was to conduct a life-event process review for selected public services. It was decided to follow a case study approach in which each live event was treated as a case within a multiple case design (Yin, 2017).

Consistent with the marketing concept of customer centricity, we focused on primary need in the form of key life event for citizens. The life-event refers to the occasion in the citizen's life when they need to use public services, such as registering to vote, applying for a driving license, or registering their marriage. The stipulated focus of the review was to identify areas for improvement to current digital services as well as to promote innovation in public services. The projects were conducted across two years (2018 and 2019) to review diverse public services. Table 1 notes the life events covered in the study.

Table 1. Life events covered in the study

Life events reviewed in 2018	Life events reviewed in 2019
Registering as a voter	Entering university education
Getting a social security number	Becoming a citizen
Registering as a taxpayer	Getting your first job
Getting a driving license	Registering for unemployment payments
Registering a marriage	Engaging with health services
Filing for divorce	Managing maternity
Starting a business	Making a small claim

A preliminary step was to identify the government services associated with the specified citizen life event. This allowed us to contextualize the issue, select the appropriate respondents who had recently experienced a specific life event with the specified service. Albeit participants were selected using non-probability sampling (or opportunity sampling), there was an attempt to recruit participants of diverse demographic background. This was the most effective and efficient way to find respondents who had gone through a specific life event recently. Despite its limitations, the technique is suitable due the focal point of our investigation, which is not so much the citizen per se but the interactions between citizens and government services.

Our research process then included two phases: data collection and data interpretation.

Data Collection

For each case, data collection comprised three steps. The first step included interviews focused on capturing a typical citizen-journey (Becker and Jaakkola, 2020; Dudley et al., 2015; Lemon and Verhoef, 2016) when availing a public service. For each service, between six and twenty-three respondents were interviewed (see Table 2) using semi-structured interviews.

For each case, citizens were first asked about the steps they took in searching and availing of the service. The initial phase of the interviews involved asking them to recall how they accessed the government service. As expected, citizen journey almost always started with a search on Google. Hence, citizens had to recall the keywords that they searched for, as well as the websites that they visited when searching for information. Respondents were asked to specify each individual step (digital or not) they had to undergo while availing the service. This was followed by asking if they faced any difficulty during the process. Respondents were also asked to comment on website' design and content of the government service website. Finally, respondents were given the opportunity to suggest improvements to remove the difficulties they encountered.

The second steps of the data collection phase consisted of a search engine results page audit based on citizen keywords collected during the interview. For this purpose, the keywords suggested by the citizens were entered in the Google search engine and the results were analysed to see if the official websites providing the service featured among the prominent results. This allowed us to understand

Table 2. Number of Interviews for each life event

Life event	#Interviews
Registering as a voter	23
Getting a social security number	18
Engaging with health services	17
Immigration registration	15
Starting a business	12
Becoming a citizen	9
Making a small claim	9
Getting a driving license	8
Getting your first job	8
Registering for unemployment benefits	8
Registering as a taxpayer	7
Registering a marriage	7
Managing maternity	7
Entering university education	6

what happens when a citizen first collects information on the service and whether they are being directed to the appropriate service. This stage is sometimes termed as the Zero Moment of Truth or ZMOT (Lecinski, 2011). ZMOT occurs when the user starts searching about a product or service (Moran, Muzellec, and Nolan, 2014) which in our case was a specific public service. Once the website of the public service was located, a web audit using tools such as Hotspot Website Grader provided additional information on overall performance, mobile responsiveness, and security. The final step included monitoring user sentiment via social media listening and app reviews for the relevant service. Social listening involves searching for service specific mentions and hashtags on social media such as Facebook, Instagram, and Twitter. App reviews on Google Play and Apple's App Store were also analysed quantitatively (i.e., average ratings) and qualitatively (i.e., comments). This stage helped us in triangulating the data gathered during the interviews. For instance, the Apps were almost always rated poor for services for which we found more pain points.

Data Interpretation: Citizen Journey Mapping

Data interpretation was conducted in two stages. – within-case and a cross-case analysis. The first stage was service specific in which citizen journeys were mapped for each life event under consideration. The interviews allowed the researchers to map several citizen journeys for each service. The researchers interpreted the data to create one, sometimes two typical journeys (depending upon who the intended recipient is) for each service. Each template included key touchpoints before, during and after usage of the government services. The journey included an explanation of what the user was trying to achieve and the webpage, app, or physical services they engaged with. A citizen emotional curve along those touchpoints helped to identify the pain (or neutral, or delight) experienced by the citizen during his/her journey. At the qualitative level, the importance of the pain point was judged from the delay it introduced in citizen journey and based upon how the citizen narrated the specific pain point. This resulted in a number of pain points for each service. In the second stage, pain points that were common across the services were identified to support internal generalization based on a cross-case analysis. Whilst some pain-points were service specific, we were able to identify five common pain-points that are discussed in the following section.

FINDINGS: COMMON PAIN-POINTS IN ACCESSING PUBLIC SERVICES

Based on our study, we found five common pain-points in accessing public services. They are consistent irrespective of the specific service being offered, thereby reflecting a contextual influence (Castelnovo and Sorrentino, 2018; Janowski, 2015; Lember et al., 2019) on public sector organizations. Most pain-points are primarily associated with service design rather than with digital technology. Hence to develop a citizen-centric public service, it is essential to assess the pain-points from the citizen perspective without a technological bias (Andriole, 2017; Curtis, 2019; Carvalho and Brito 2012; Furr and Shipilov 2019; Tabrizi et al., 2019). Once this initial assessment is made, specific digital technologies can then be reviewed as possible solutions. The pain-points are discussed in the general order of occurrence throughout a citizen-journey.

Information Inconsistencies

When citizens wish to avail of a specific service, their first initiative is to collect the relevant information to locate the service and learn how to avail it. As noted earlier, this moment is called the Zero Moment of Truth and usually occurs on a search engine such as Google. Our findings suggest that citizens find it difficult to locate the correct website due to a multiplicity of websites offering similar information. In most cases, departmental websites appear lower in the search results than the general information websites. This clearly points to poor search engine optimization – SEO (Serrano-Cinca and Muñoz-Soro, 2019) for most of the public services. Traditionally, a website that ranks first on a search engine result page will attract the most clicks. Consequently, many users

find it difficult to differentiate between government and non-government sources. Information is available, but sometimes inconsistent due to the multiplicity of sources. As one respondent notes for the social security number – "The information is available online, but it is not clear". Similarly, for citizenship applications, participants noted that "website doesn't offer a very clear picture of the complete process" and the "information is scattered everywhere". Another respondent concludes – "Finding government information online is always a challenge, not just for voting". Thus, information inconsistencies confound the element of choice (King and Cotterill, 2007; Lent and Arend, 2004) for the citizen in availing of public services.

Intricate Website Navigation

Even when citizens locate the official website, they find it difficult to navigate. This is the most common pain-point across all the investigated public services. In most cases, the main information pages are text-heavy and have a series of external links that take users to another website. Consequently, users need to cut through the text and need to understand the precise process of availing of public services by collating information from multiple webpages. Regarding the social security number, one respondent comments – "the entire process can be reduced to one website, instead of hopping from one to another in trying to determine what needs to be done". Interestingly, even though the actual process might be simpler, the users might find it difficult to understand its precise requirements due to the way it is presented. For instance, it was observed for the social security number that "the application process, once you had all the correct documents, was simple, but I found knowing exactly what type of documents they would take was a bit of a challenge". Another user notes for the voter registration process – "It is just about fit for purpose but there is a lot of room for improvement. It is not easy to find out how to register, and there are a lot of steps to register. It can be off putting if you are not particularly motivated, which would especially keep young people out of the system". This reflects the observations (Carvalho and Brito 2012; Mergel et al., 2018) that if the citizen-journey is too cumbersome, citizens may prefer to visit physical offices to interact with frontline workers. Interestingly, although public services exhibit similarity in terms of pain-points, the website structure is inconsistent across services, a common pain-point noted by Bertot and Jaeger (2008).

Bureaucratic Service Design

Even when citizens locate the correct set of information, they still face problems due to the use of bureaucratic service design. While those providing the public service know the precise meaning of bureaucratic terminology, those availing the service for the first time may not understand if both the information and the process are not intuitive. The problem was most acute with the Department of Revenue website that uses the terminology of Form-X where X is a number, to denote various taxation processes. As the following quote suggests, this was not due to the linguistic capability of the users but rather due to a lack of clarity in general – "So difficult, unclear instructions on website and then had to physically go into the building. Hard to get the time off work to do that, considering it was a brand-new job… And I am a [native] speaker, must be even harder for others". Interestingly, the revenue department is among the early technology adopters in the country. Yet, technological capabilities are not fully utilized due to a relative lack of understanding of bureaucratic service design. Similar feelings were expressed regarding the bureaucratic processes followed for some public services. For instance, one participant recalls on the small claims procedure – "It is very daunting... if you are not someone who's familiar with the court system – it throws you back a bit". This reflects the observation (Curtis, 2019; Dudley et al., 2015; Mergel et al., 2018) that online services are often a replication of offline processes, without a serious concern for the citizen.

Disconnected Multichannel (Digital and Non-Digital) Touchpoints

A related and crucial pain-point for some government services is the existence of incoherent multichannel touchpoints during a single customer journey, mostly due to the decentralized nature of

the public service. At times, this also implies the involvement of another public agency or department. In many cases, it is the involvement of the postal department in communicating the result of the application process. This introduces unnecessary delays in availing of the process. For instance, one user notes for the social security number – "Why do I need to wait for two weeks for the appointment and then a week for the letter to be sent, when I want and need to work now". Respondents suggest that an e-mail would work as easily and would be quicker. The findings suggest that digital channels are still not considered by the government as a key information medium omitting its capacity to directly deliver the service fully or partially. As one user notes for the driving license process – "I would have preferred to do the whole experience online. Obviously, I know I can't do my full [driving] test online; but the other bits, I don't see why I must go to get my photo taken, I can upload a picture of myself". Another user observes for the voter registration process – "It would be great if you could do everything on your phone… It would be much easier if everything was digital". The observations align with the findings (Carvalho and Brito 2012; Reddick, Chatfield, and Ojo 2017) that that public agencies are still using digital channels only as a marketing device and not to engage with the citizen in a collaborative manner.

Lack of Real-time Online Support

An unintended consequence of the involvement of multiple agencies is that there is no or very little online support during the service period. The most complex process in this regard is that of voter registration. There are multiple processes for voter registration in the country, ranging from individual application to institutional (university-based) registration. The process involves the university (if there is a voter registration drive in the university), police, city council, and the postal services. Due to a lack of common interface, users are unsure at what stage their application is. One respondent, who was registered for voting via their university, recounts – "[The university] just said once the form was signed off and given to the [police], they had no control over where it went… they just said that they assumed it was being sent to the relevant offices in the City Council, but they couldn't tell me, and they couldn't assure me that it was sent where it was meant to be sent". As another example, one student applying for higher education reports – "I find it annoying to have to search through the website whenever I have a question or I'm confused, it would be better if I could ask one of those virtual assistants and they could give me the answer". A relative lack of online support was noted during and after the application process for other services including social security number, marriage registration, citizenship application and starting a business.

To Summarize: A Complex and Painful Journey

A traditional customer journey in the business context can be summarized in the following manner. The pre-purchase phase includes a stimulus (need) and the ZMOT (search for information, mainly via a Search engine); the second phase is the purchase (First Moment of Truth) and the experience of the service (Second Moment of Truth). The last phase, the post purchase and/or post experience, is concerned with sharing the experience via online means, i.e., ratings and ratings on the concerned website itself (e.g., amazon or booking.com) or via third-party websites (e.g., Facebook or TripAdvisor). This simplified process has been previously described at length (see Moran et al., 2014 for a detailed example).

However, in our study on the citizen-journey when using public services, we uncover a much more complex scenario. For example, the journey for a citizen following a job offer results in a decision tree (see Figure 1) with numerous possible paths with a minimum of eight touchpoints with multiple agencies. The situation may not be as complex for all public services. Yet, the pattern that emerges from our study is that the citizen-journey is complex and involves multiple, and sometimes unnecessary, steps. Moreover, each step may be associated with multiple pain-points such as inconsistent information, lack of support, bureaucratic processes, and intricate website navigation.

The following section outlines solutions for removing these pain-points based on academic insights and international benchmarking.

FIVE KEY INSIGHTS FOR CITIZEN-CENTRIC PUBLIC SERVICES

Digital transformation of a public service may be truly citizen-centric when it considers the citizen-journey and strives for removing the pain-points. Drawing from our advisory experience, analysis of international best practices, and recent research, we offer five key insights and recommendations for a citizen-centric digital transformation of public services. It may be noted that the recommendations and the pain points do not have a one-to-one relationship and a particular recommendation may influence multiple aspects in providing a citizen-centric public service. Table 3 captures the recommendation and relevant pain points.

Citizen-Centric Service Design

Although many public services claim to provide citizen-centric services, the claim is often vacuous since the citizen is not a participant in the service-design process (Lember et al., 2019). Moreover, public services agencies tend to follow their own business process, regardless of citizens' needs and expectations (Bertot and Jaeger 2008). The shift toward a citizen-centric philosophy requires a cultural change from the public service being a bureaucracy maintaining rulebooks to one that works towards the availability of high-quality public services based on user-cantered design (Claver et al., 1999; Curtis 2019; Mergel et al., 2018). At the core of the citizen-centric philosophy is a clear understanding of citizen needs and the ambition to make their journey frictionless. This would

Figure 1. Citizen-journey to work in the country

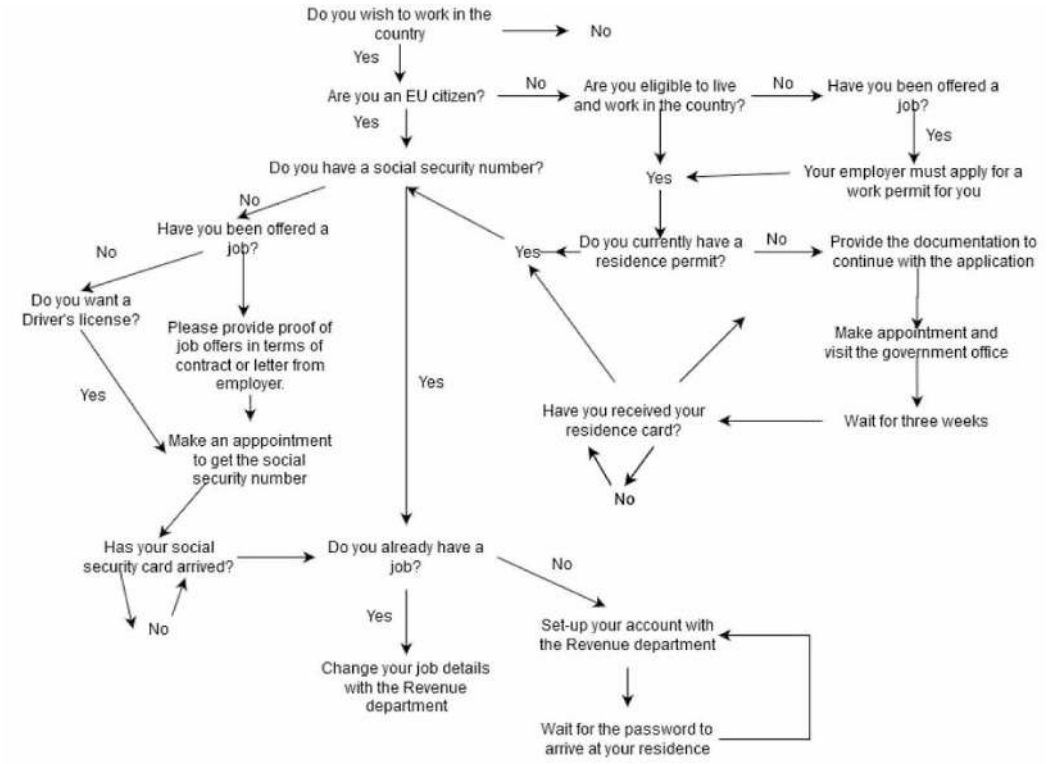

Table 3. Key recommendations for a citizen-centric public service

Recommendation	Pain points eased
Citizen-centric service design	Bureaucratic service design, Intricate website navigation
SEO and chatbots	Information inconsistencies, Lack of real-time online support
Holistic touchpoint architecture	Disconnected multiple touchpoints, Intricate website navigation
Apps for governance	Disconnected multiple touchpoints, Intricate website navigation, Bureaucratic service design
Social media management	Lack of real-time online support

involve a collaborative service design (Lember et al., 2019) and introducing the element of choice (King and Cotterill, 2007) in availing of a public service. For service design, choice may be defined as delegated decision-making whereby choices are made by service users during the service, instead of fixed choice made earlier by the service (Lent and Arend, 2004). Once a citizen-centric service design is undertaken, it would remove the pain points associated with the bureaucratic service design, and by extension intricate website navigation.

The online voting system of Estonia truly reflects citizen-orientation in terms of simplicity and choice. Etonian online voting system allows voters to cast their ballots over internet from anywhere in the world. The voters can log onto the system during a designated pre-voting period to cast their votes using their national id. While the underlying procedural and technical infrastructure takes care of anonymity and security (Nurse et al., 2017), it remains a very simple process for the citizen. They can cast their votes any number of times (including an offline one, should they wish) with the latest vote cancelling earlier votes. The success of online voting can be gauged from the fact that the online voting percentage in Estonian elections increased from less than 2 percent in 2005 (when it was first introduced) to more than 30 percent in 2015 (Vassil et al., 2016). The benefits of citizen-centricity are manifold. It not only eases the customer journey; it also results in a reduction in administrative efforts. For instance, Estonian authorities report that the online voting system saves around 11,000 working days per election (e-estonia.com, n.d.).

Search Engine Optimization and Chatbots to Manage Citizen Interaction

As noted earlier, customers often start their journey by searching for relevant information, termed as the Zero Moment of Truth (Lecinski, 2011; Moran et al., 2014). For a governance initiative to be successful, the customer should be able to experience the difference of any digital transformation effort at this stage (Correa-Ospina et al., 2021). In our study, we find that the information on accessing government services is distributed across different websites and requires hopping through websites for a proper understanding. This necessitates an effective SEO strategy by public services providers (Serrano-Cinca and Muñoz-Soro, 2019). In this regard, public agencies need to be mindful of how citizens seek information on a topic (Bertot and Jaeger 2008) in determining SEO keywords, for instance including similar keywords used in other countries (e.g., social security number, national insurance number, or public service number) and in multiple languages (e.g., numéro d'inscription au repertoire, burgerservicenummer, Sozialversicherungsausweis). An effective SEO will cut through the information inconsistencies by leading the citizen directly to the required touchpoint, for instance, on the departmental website. Once on the website (first moment of truth), ideally the citizen should be able to navigate intuitively based on the user interface and website design. For the public service websites however, the information is often presented in a very dull manner, with heavy use of bureaucratic jargon. Though it is acknowledged that government agencies need to be accurate due to their legal and institutional framework, there is no harm in providing information in an accessible

format. Moreover, public service agencies should strive to standardize their website design (Bertot and Jaeger 2008) so that citizens expectations are effectively managed across services.

In this regard, there exists a huge potential of conversational artificial intelligent applications (Androutsopoulou et al., 2019; Nili et al., 2019), commonly known as chatbots or virtual assistants. Chatbots make use of natural language processing and machine learning algorithms for conducting text-based conversation on common queries. For instance, the Department of Human Services in Australia introduced two virtual assistants, named *Sam* and *Oliver*, in 2017 to assist citizens by answering questions on the departmental website and on student claims respectively. Within a year, Sam and Oliver answered more than two million questions (Cameron, 2018). Such virtual assistants not only assist the citizens, but also assist the employees of a public service in discharging their duty. For instance, in the same department *Roxy* assists the employees in recommending and processing online claims related to the student, carer and age pension.

The use of chatbots is a perfect example of how digital technology can save huge efforts both for citizens and public service employees. In the beginning, these chatbots might need intervention from the employees during the learning stage, they can provide excellent lack of real-time online support once they are fully developed and deployed. They would also help public agencies in meeting citizen expectation that are much higher due to ubiquitous access to digital technology (Vial, 2019).

Holistic Touchpoint Architecture

Most respondents expressed a preference for a single login id to access all public services, without needing to supply the same data to different government agencies (sometimes, even to the same agency) at different points of contact. This could be provided by an integrated and holistic touchpoint architecture to access public services (Carvalho and Brito 2012; Maechler et al., 2016). Furthermore, public service agencies may draw from a single citizen account (King and Cotterill 2007; Wilson, Jackson, and Ferguson, 2016) to share data and to provide seamless service experience (Correa-Ospina et al., 2021) across public agencies. This would ease the pain-points related to multiple touchpoints and intricate website navigation since the citizen would need to provide their information once irrespective of which public service they use.

The NemID system from Denmark is an excellent example of providing such holistic touchpoint architecture via a single id. NemID follows a two-factor authentication scheme consisting of a user-id, a password, and a code card containing one-time passwords (codes). NemID system acts as single touchpoint to avail of public services provided by the government, and in some cases, private organizations (e.g., for banking or payments). As another example, Singapore citizens can use their Singapore Personal Access (SingPass) details to avail of over 60 government services. Most of these services, including passport application, can be fully managed online without the citizens personally needing to go to the concerned department. Of course, security might be a concern (Nurse et al., 2017) for such systems. To ensure the security and privacy, both NemID and SingPass use two-factor authentication where, apart from the user id and the password, one-time passwords are also included in the system.

At the infrastructure level, however, the idea of holistic touchpoint architecture goes beyond the use of a single id and requires government agencies to standardize their data formats and share data across agencies. More crucially, it requires government to use diverse technology solutions towards an overarching goal of digital transformation, rather than different departments trying to solve their problems using a specific technology in an idiosyncratic way (Kane et al. 2015; Wessel et al., 2020). Such joining up of government (King and Cotterill, 2007; Wilson et al., 2016) goes a long mile towards facilitating a citizen-centric public service.

Apps for Governance

The number of smartphone subscriptions (6.8 billion) are manifold the number of active landline subscription (930 million) worldwide (Statista, 2020). With their increased processing power,

smartphones have become a preferred connecting device for users. Smartphones provide an opportunity for facilitating a 'ubiquitous moment of truth' (Muzellec and O'Raghallaigh, 2018) where a user can move from the zero moment of truth (search) to the third moment of truth (share) in a matter of few taps. With such capabilities, it is no wonder that most respondents in our study expressed a distinct preference for a mobile app rather than a website. They were also categorical in asserting that the app should be designed and optimized for smaller screens and should not merely be the same website available on smaller devices. This is in line with the observation (Agostino et al., 2020; Curtis 2019) that those changes would be appreciated most by the citizens that provide direct benefits to them, as opposed to the services that provide efficiencies to the government. Since app designs are considered more intuitive by customers (Morrison et al., 2018; Tupikovskaja-Omovie et al. 2015), it is expected that apps would make the public service more citizen-centric.

To illustrate, Malta is a leader in m-government space with more than thirty public services available on mobile apps. Moreover, to facilitate access to the apps, the Maltese government has created a one-stop directory app, called *maltapps*, to act as a platform to access all official apps. Since smartphones are usually equipped with geolocation capabilities, the use of such apps opens further avenues for optimizing government services using location information. For instance, using the *snap send solve* app, Australian and New Zealand citizens can take pictures (say, of a broken playground equipment or a litter) and send it to council via the app mentioning the nature of the complaint. To simplify the process, no signup is required, and the reports are sent directly to the appropriate council based on the geolocation data. Evidence suggests that such apps not only ease public service availability, but they also result in benefits such as positive perception of overall service quality, organizational innovativeness, and subjective firm knowledge (Schmitz, Bartsch, and Meyer, 2016).

Social Media Management

Most of our participants expressed an affinity for social media. It is reflective of around 3.8 billion active social media users worldwide (Wearesocial, 2020). While public agencies across the world are active on social media websites such as Facebook or Twitter, research suggests that these channels are mostly used as a marketing device for one-way communication from the government to the citizen (Reddick et al., 2017; Zavattaro and Sementelli, 2014) with no significant input from the citizen to government. Social media can be effectively used for boosting citizen engagement (e.g., surveys on key proposals) and building public trust via two-way communication (Agostino, Arena, Catalano, and Erbacci, 2017). The always online and ubiquitous nature of social media makes it an effective tool for providing online support not only to citizens using the service, but also to encourage those who are contemplating it.

Moreover, social media can play a greater role in policy formulation by incorporating citizen voice for possible service improvements and collaborative service design (Reddick et al., 2017; Munro, 2020; Saxena, 2021). Beyond citizen engagement, social media analytics has huge potential to assist in the policy- and decision-making process in public agencies. Analytical techniques such as sentiment analysis may be conducted on social media reactions on major policy proposals. Though public agencies have yet to formally adopt this approach, scholars have already conducted sentiment analysis on key policy decisions (Georgiadou, Angelopoulos, and Drake, 2020) and citizen involvement with local government (Zavattaro, French, and Mohanty, 2015). In the future, sentiment analysis may routinely be used to assess citizen's reaction on possible policy proposals and proposed changes in citizen-journeys.

CONCLUSION

Digital technologies provide the underlying impetus and infrastructure for the transformation of public services (Eggers and Bellman 2015; Nili et al., 2019; Vial, 2019). Yet, to be successful, digital transformation needs to start with the citizen in mind (Claver et al., 1999; Curtis 2019; Mergel et

al., 2018). This requires a fundamental reorientation from a bureaucratic mentality to one that is citizen centric. A key contribution of this study is in utilizing the service marketing concepts of customer-journey and pain points in the arena of public administration. Based on the analysis of citizen-journeys in availing of public services in an EU member state, five common pain-points are identified – information inconsistencies, intricate website navigation, bureaucratic service design, disconnected multichannel touchpoints, a lack of real-time online support. Moreover, by noticing the existence of the common pain points based on the study of a number of public services over a couple of years, this study offers a higher level of internal generalization. Drawing from the domain of services marketing and digital marketing, the study suggests that these pain-points may be significantly improved by a citizen-centric design, search engine optimization, use of chatbots, holistic touchpoint architecture, providing smartphone apps for availing of public services, and by utilizing social media for engaging with citizens. By highlighting that these pain points are common across public services, this study underscores the need of a deep cultural change that is required beyond individual public agencies and specific technological solutions. Citizen-centricity can be imbibed when public services put themselves in the shoes of the citizens, understand the pain points along the citizen-journey, and introduce innovations that ease those pain points.

A couple of limitations of this study are to be noted. First, the number of interviews differ across services. This was due to the nature of specific life events which may not be common to all citizens (e.g., small claims) as well as due to the sensitivities surrounding certain life events (e.g., filing a divorce). Nevertheless, existence of common pain points serves as a triangulation device. Second, the findings are based on public services offered by a single EU member state from the Western society. Hence, external generalizability of the findings may be limited in other contexts, for instance, in Asia or in developing countries. However, the nature of our recommendations is such that it should improve citizen-centricity for any public service in general.

The findings from our study assume greater significance in the post-Covid world due to increased restrictions on movement. The Covid-19 crisis has been a catalyst for change and has highlighted issues that need to be urgently addressed (Agostino et al., 2020). Digital transformation of public services was an operational imperative earlier; it has become a strategic necessity now. For many public services, the option of providing services via physical offices has been significantly constrained at least for now. Social distancing means that citizens need to avoid physical interactions and use online channels. In this case, there is a need for flexible service design that accommodates the needs of diverse citizenry (for instance, via a website as well as an app) as well as improving accessibility. Since many employees are working from home, telephone-based support for the public needs to be supplemented with chatbots, with increasing use of the latter. Citizens may be increasingly motivated to use digital public services in the post-Covid world. Public service systems will do well by embodying a citizen-centric focus.

By highlighting that these pain points are common across public services, this study underscores the need of a deep cultural change that is required beyond technological solutions. Citizen-centricity can be imbibed when public services put themselves in the shoes of the citizens, understand the pain points along the citizen-journey, and introduce innovations that ease those pain points. In so doing, a key implication for public service organizations is to think beyond bureaucratic process and taking a holistic perspective. This would involve bringing in insights from other relevant domains, such as service marketing and/or digital marketing. At the practical level, this may reflect in conducting training and refresher courses for public service employees as well as conducting some workshops with the citizens for co-creation of public services. This in turn, would also help public service employees in upgrading their skills corresponding to citizens' expectations in this modern day and age.

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Deepak Saxena in an Assistant Professor at the School of Management and Entrepreneurship at Indian Institute of Technology Jodhpur. Prior to this, he worked as a Research Fellow at Trinity College Dublin and as an Assistant Lecturer at Dublin Institute of Technology. He has published with the journals such as Australasian Journal of Information Systems, Journal of Information Science, Irish Journal of Management, Electronic Journal of Business Research Methods, and Electronic Journal of Information Systems Evaluations.

Laurent Muzellec is the founder and director of Trinity Centre for Digital Business. He is also the founder and director of the Master in Digital Marketing Strategy. Laurent's research interests pertain to the field of electronic Word of Mouth, digital business model, corporate brand management and fictional brands. His articles have appeared in several international publications including Industrial Marketing Management, Marketing Theory, the Journal of Advertising Research and the European Journal of Marketing.

Joe McDonagh is Associate Professor of Business at Trinity Business School. His research, teaching, and advisory work focus on the process of leading large-scale strategic, organisational, and technological change programmes in civil and public service organisations, especially change that is enabled by the deployment of modern ICT systems and platforms. Working within a collaborative research paradigm, and embracing the scholar-in-residence as a model of such inquiry, his research encourages the adoption of research- and evidence-based approaches to development and change in civil and public service organisations.