



Digital Maturity of Prisons: A Global Survey

DigiMac™

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Rationale

Our prisons are at the beginning of digital transformation, with some prisons more ‘advanced’ digitally speaking than others. This research project does not seek to offer a ranking of prison services’ digital capabilities, but instead we review how services are getting on with digitization, how they are adopting new technologies, what their approaches are to this, and how technology is or is not important to help them reach their objectives.

This is a valuable study as it will:

- Help to understand the current efforts of digitization within prison settings.
- Gauge correctional priorities with respect to digitization and help to understand how important technology is as a driver for change.
- Help to understand the complexity of digitization by exploring the cultural, organizational, and technical dimensions of it.
- Help to understand digital sophistication and challenges in implementing digital infrastructure.
- Identify the qualities of digitization in the context of prisons.

The aim of this project is to develop a digital maturity model for prisons that can be used to measure the degree of maturity in the digital transformation and outline a pathway by which prison services could move to progress towards increased digital maturity—where organizations review and anticipate a new digital reality. As such, it should help agencies build their own digital strategies and self-assessment tools. We must stress that the design of the digital maturity tool has emerged as a result of careful consideration of human needs and harm reduction. Digital maturity encompasses the thinking process around exploring and adopting digital technologies where appropriate, as well as the decision making around defining the demarcation of its use and where it is not appropriate to transform analogue, human processes into digital ones. That is, we do not define digital maturity as going digital at all cost, but as a

goal-driven and human-centered process that utilizes digital tools to improve conditions for correctional residents and staff alike.

Digital Transformation

Digital transformation, in general, means the application and use of modern technologies in the organization's business processes to achieve its goals and increase efficiency (Aslanova & Kulinchikina, 2020). The focus on the objective, specifically the process to achieve certain improvements and obtain better results is crucial in this definition. Kane (2017) warns that a common misleading conception is that it is basically about the implementation and use of cutting-edge technologies. It is not hard to find examples of organizations where the use of a new digital platform or system has not actually improved things and delivered the intended transformative impact. A better understanding of digital transformation is adopting business processes and practices to help the organization effectively deliver its services and achieve its objectives in an increasingly digital world.

While adapting to digital technology is considered standard practice in many settings, the penal landscape presents distinctive challenges for transformation. The penal system is also fraught with moral and ethical dilemmas, and many argue that digital transformation could exacerbate penal problems. We understand this view and we take these concerns seriously. We start from the view that digital transformation is an opportunity to review how penal practice is experienced and that the adoption of technologies should lead toward only meeting the aims of rehabilitation and desistance.

This study endeavors to understand how digital transformation happens in correctional settings. We know from other settings that introducing digital technology creates change to its people and practices. We also know that digital technology can make things worse and create more problems and unintended consequences, or even create a situation where digital technology remains switched off because it doesn't meet the needs of the end users. There is

much we still do not know about digital technology in prison settings, largely because digitization is still in its infancy in this context. Based on this, it is important to evidence its conception and birth.

Prisons are responding, reacting or adapting to the changing digital world. Transformation is beginning and there will be no end point to it. With constantly evolving innovations in the digital technology sector, it will be an ongoing story. By understanding and interrogating prison service practices we are able to create insights and recommendations to support reform-informed transformation. Due to the continuous character and the complexity of how organizational culture reacts and adjusts to digital technologies over time, we use the term digital maturity, rather than digital transformation, to analyze and describe this concept in the prison setting.

Digital Maturity Perspectives

Digital maturity is a broad term and there are several theoretical perspectives. Most definitions allude to the capacity, capability, willingness, and human drivers of organizations to introduce, embed, and sustain digital solutions. The notion of digital maturity has gained traction in organizational studies to provide a holistic understanding for transformation. In preparing for this study, we reviewed these perspectives and models. Some models are based on fundamental empirical knowledge, while in other maturity models, the importance of the defined digitization factors is more difficult to understand. Our main observation is that existing models for digital maturity do not reflect the context of the prison and we would need to develop our own model for inquiry to attribute relevance and credibility to this study.

Our review also found that the concept of digital maturity has not achieved a consensus among scholars. This means that there are no standard mechanisms for measuring digital maturity. In a systematic literature review on digital transformation maturity, Teichert (2019) analyzed 24 studies including 22 models with a special focus on **organizational culture** and to what extent

this aspect is represented in the different models. For example, several models (Buvat et al., 2017; Goran et al., 2016; Solis, 2017) stress that organizational culture is important. This is particularly interesting in the context of prisons, as organizational culture is an important feature to how prisons are managed by their senior leaders (Bennett, 2016). Prison scholars have observed the prison as a 'moral' landscape, which is shaped by wider societal practices and discourses (Liebling & Arnold 2004). In this vein, we believe that organizational culture is of deep significance to understanding the readiness of correctional organizations to adapt to digital technologies. Teichert's (2019) review also suggests that existing models give an incomplete picture of digital maturity, that cultural attributes reflecting a digital culture are not integrated systematically, and that digital maturity models *specific to the domain of public services are clearly under-represented*. This is certainly the case for correctional services, emphasizing the necessity to adapt and develop models specific to this domain. Valdez-de-Leon (2016) argues that many digital maturity models are too generic and do not acknowledge organizational culture nuances. Therefore, it is difficult to apply them to particular industries. In fact, Teichert (2019) argues that it is a prerequisite to acknowledge these nuances and can create bottlenecks for digital transformation, if not adapted properly.

Aslanova and Kulinchikina (2020) assessed varying perspectives on digital maturity. Some definitions emphasize **integration** as a key facet to digital maturity. Westerman et al. (2014) explain that integration is about uniting "organizational operations and human capital into digital processes and vice versa: digital processes uniting into organizational operations and human capital" (p. 443). In their extended research, they define digital maturity as organizations combining digital activity with strong leadership to turn technology into to transformation (ibid.). In a revised study, Bonnet and Westerman (2021) talk about digital 'mastery' as an approach, which includes digital capability and leadership capability. This interaction between the ambition to change and the capabilities to make that change happen is an important dynamic facilitating digital transformation. Leaders open to change are crucial here alongside the capability to transform organizations. Other digital maturity models elaborate further on this integration processes, focusing on the transformational journey to

integrate business strategy (the overall focus for the business), the business model (how to configure the business to enable to overall business strategy), and the operating model (what are the capabilities needed to execute against our business strategy and business model) (Anderson & Ellerby, 2018).

Another important theme is that of **adaption** (see Aslanova & Kulincina, 2020; Kane, 2017; Westerman, 2021). As the recent global pandemic has highlighted, organizations have had to change to respond to safe service delivery—such as moving services online. Understanding how organizations systematically prepare to adapt consistently to ongoing digital change is of significant value. Digital maturity is a good indicator of whether an organization has the ability to adapt and thrive or decline in the rapidly evolving digital landscape (Grossman, 2018). For example, organizations who were able to adapt and change quickly during the early weeks and months of the pandemic were those who moved from disconnected technology pilots to a more systematic and embedded approach to strategy and execution (Bonnet & Westerman, 2021). The enabling features of this adaption in the context of correctional facilities is fundamental to our study.

In many respects digital maturity is about **readiness** and preparedness to change and respond rather than an outcome. Often the terms digital maturity and ‘digital transformation’ are mistakenly used interchangeably, but in our exploration and design we argue for differentiation. Transformation is the outcome, and maturity is the **organizational process and capability to support transformation**. Our review also identified that many commentators allude to the idea that digital maturity is a completed process and could be seen as the final stage of digital transformation. This is amplified the COVID 19 pandemic, in which digital change has become more visible (Westerman, 2021). This is a limited view, as human needs, organizational demands, and technology constantly change and evolve, and the concept of adaptation is therefore always in demand. Our review concluded that there is an established evidence base that digital maturity is an *ongoing process of integration an adaptation*. Integration means that entities integrate digital activity within their business strategy, business

model, and operating model. Adaption means that entities have to be ready and build the capabilities to adapt to a constantly changing world.

e-government dimensions for digital maturity

Digital maturity models are mainly used by consulting firms, universities, and companies to measure the level of maturity with respect to the digital transformation process within an organization (Ochoa, 2016). In commercial companies, this transformation takes place as new or traditional technologies are used to change their products and services and how efficient they are in selling, producing, and delivering them. Bonnet and Westerman (2021) detected three key areas the most successful enterprises were digitally transforming: customer experience, operational processes, and business models. Those types of areas within an organization are also referred to in literature as 'business dimensions' (Anderson & Ellerby, 2018), dimensions (Teichert, 2019), components or characteristics (Aslanovo & Kulinckina, 2020), or domains, and are used to understand and measure the differences between organizations' readiness to transform digitally. For consistency, we use the term dimensions as it refers to the different areas of focus from which we examine this maturity in a broad sense and from a holistic perspective. We will articulate the dimensions we have selected later on in the report- in essence they will include customer experience, processes and practice as well as business needs and vision.

To understand how this readiness evolves in governmental organizations, such as prisons, it is important to explore the concept of e-government and how those dimensions are addressed from a governmental perspective. Here, we also see the three dimensions—customer experience, operational processes, and business models—, but in somewhat different forms. Using technology in governments has traditionally been the major focus of improving of data and also information sharing between governmental bodies, which also could be referred to as the government operational models. Investments in government IT have traditionally targeted efficiency gains focused on internal processes, such as improving better data integration, centralizing document repositories, and gathering information and intelligence.

The customer relationship dimension, however, is also an area that is receiving more attention in this sphere. Like many organizations in the private sector, forward-thinking government agencies are realizing that their ability to execute their mission can be linked to their ability to deliver an effective customer experience to businesses, citizens, and their own employees. Where long-term strategies and governmental business models are mainly residing at the policy making level, we see also a movement towards the adoption of digital transformation strategies and technology-driven change. In its recommendation on Digital Government Strategies, the OECD (2014) explains the value of digital technologies for more open, participatory, and innovative governments. They embed a digital maturity approach in this document by describing that “[t]he challenge is not to introduce digital technologies into public administrations; it is to integrate their use into public sector modernisation efforts” (OECD, 2014, p. 2). Their recommendations specifically promote the development of strategies, secure leadership, and political commitment to the digital agenda.

Digital Maturity Dimensions

Digital maturity models are structuring different perspectives and underlying questions or capabilities relevant to the understanding of digital maturity in comprehensive categories which we will refer to as dimensions. In what follows we outline the key dimensions we have selected for our initial survey in relation to digital maturity development and application in prisons:

- Customer-centric
- Organization
- Digital culture
- Technological capabilities
- Metrics and evaluation

Customer-centric

Andersen and Henriksen (2006) shifted further away from traditional e-government models by taking a customer centric approach rather than technological capacity as a starting point to shape their maturity model. They state that modern e-government maturity models need to

capture this future use of IT applications with the external users such as citizens, businesses, and other governmental agencies in mind when performing the core activities in government. We have argued before that technological innovation and real transformational change in prisons should take place within a broad ecosystem in which incarcerated people and prison staff should play a significant role (Knight & Van De Steene, 2017). Today, citizens are familiar with searching and finding all the information they need online or using legacy media, they have the ability to stay informed, to be able to decide when, where and how to do things, to communicate fast and in real-time, to learn continuously—all of which can be achieved through the use of digital systems and the internet. As the consumerization of digital technology has enabled many opportunities for improved communication, participation, and consumer or citizen-centric service delivery outside, this model is especially pertinent to those serving time in prison (Van De Steene & Knight, 2017). Therefore, we have adopted in our model this dimension as a primary area.

Organization

The capability to shape digital technologies either to serve incarcerated people directly (i.e., extend and enhance the delivery of services to them) or indirectly (i.e., use technology to improve the entire environment where incarcerated people live) depends on how the organization has embedded this ambition in their strategy and translated this into its internal structure and processes.

This brings us by the organizational dimension of digital maturity. The Forrester digital maturity model describes this dimension as the alignment of an organization to support digital strategy, governance, and execution (Gill & Van Boskirk, 2016). Digital strategies aren't limited to technological issues such as using mobile devices or migrating to the cloud. Instead, they chart how the organization can and should do things differently as society is changing. It puts a digital lens on business strategy (Kane, 2017). Effective digital strategy depends on the organizational capabilities and how it's structured and positioned to realize this change. Some models make a further distinction between strategy at the one hand and operations at the other.

The strategic aspects focus on how the business transforms or operates (Anderson & Ellerby, 2018), which can be compared with the strategy dimension that Aslanova and Kulichkina (2020) analyzed in their research on Digital Maturity and also with the e-Government-strategy from Valdez-de-Leon (2016). Others—mainly from a commercial business perspective—refer to this as the capabilities to adapt and transform old business models into new ones (Westerman et al., 2014) and, as we mentioned above, it is strongly dependent on the dynamic capabilities to adapt and integrate. The ‘execution’ part, how they are structured and internally organized to support this transformation, is also referred in an operations dimension: it is all about executing and evolving processes and tasks by utilizing digital technologies to drive strategic management and enhance business efficiency and effectiveness (Anderson & Ellerby, 2018). This definition shows a grey area between strategy and operations, which we also find in the work of Valdez-de-Leon (2016) in the context of government where a distinction is made between the e-government strategy and governance in a similar way to how we’ve described the combination of processes related to integration and adaptation. The observation that strategic and operational aspects are difficult to distinguish depending on how your organization is positioned and what type of business you are in motivates us to keep both together within a broader organizational dimension: how the organization is structured internally and how it is positioned in the broader governmental structure and society in such a way that it creates the necessary dynamic to transform digitally.

As mentioned above, digital transformation is a combination of processes related to integration and adaptation, which happens in a broader societal ecosystem. This organizational dimension also analyzes the position of the organization in this environment and the way new ideas and strategies are pushed or supported from the outside as well as internally absorbed and translated into change. Any model that tries to unravel this complex context needs to acknowledge the influence of and impact on all beneficiaries internally, such as employees, but also the external affected parties, including all affected parties in the justice domain and society as well as citizens (victims, the general public, etc.). Moving a correctional organization in a

more digital direction in a complex government and judicial system depends strongly on its leadership. The most important component of achieving a higher level of digital maturity in this dimension is the readiness of the management for changes in the organizational culture, restructuring of business processes, and improving management skills (Aslanova & Kulichkina, 2020).

Digital Culture

Openness and readiness to change is not only a matter of how you are organized, but also how people are equipped and supported to drive that change. There is an important cultural dimension to organizational readiness that refers to an organization's approach to digitally driven change, innovation, and how it empowers employees with digital technology.

Organizational culture is of deep significance to understanding the readiness of correctional organizations to adapt to digital technologies. The Boston Consulting Group (n.d., n.p.) sees the capability to “change the way of working” as an important enabler for accelerating the digital transformation journey. Organizational cultures shift with the transition from how people can collaborate across functions and silos, how they are motivated to take initiative and share ideas, how they are supported with training and incentives. This dimension is strongly focused on people and some models refer to it also as such: a successful implementation of the strategy implies the readiness of the staff and their awareness of upcoming changes. Engagement, motivation, and participation of people in strategic changes within an organization is the key to success (Aslanova & Kulichkina, 2020). Others put additional focus on the governance of that culture: how organizations empower employees with digital technology and also what the company's approach is to digitally driven innovation (Gill & Van Boskirk, 2016). In TM Forum's (2021) digital maturity model, this cultural dimension contains—besides the employee enablement aspect—an additional aspect of cultural leadership and governance.

A particularly interesting aspect of managing this culture in the context of prisons is that overcoming the aversion to risk is perhaps the most important characteristic of digitally maturing cultures (Kane, 2017). Prisons are traditionally known as and are arguably organized to be communication-poor environments where any form of communication and access to

technology is still seen as a risk or threat. This context creates a particularity related to the cultural dimension, where motivations and drivers towards digital change will be strongly depending on what the organization's attitude is toward security and risks and how ready they are for changes that would need a cultural change in these areas.

In the different digital maturity models and assessment tools we analyzed, there is considerable overlap between the organization and the culture dimensions. Transformation involves both structural and cultural change¹ within government. However, we found that the cultural dimension is worth analyzing separately, as it enables us to capture more prison-specific particularities where the organization dimension is more transversal.

Technological Capabilities

The readiness of organisations to anticipate technological changes and adopt technologies into their strategy and operations significantly depends on the availability and accessibility of those technologies. This dimension includes a variety of aspects, such as material resources, access to funds to acquire and implement technologies, and also the knowledge and skills to create and sustain technological performance. Investments in technology are often difficult to get in correctional environments where shortage of both human and financial resources are common and governmental budgets models are rigid and limited and subject to public scrutiny.

The technological capability underpins the success of a digital strategy (Das et al., 2017). Das et al. (2017) found that countries that do better at e-Government are the ones that invest most in it. Their research also found that the investment and availability of IT technologies and infrastructure is fundamental—without the means to run digital services, governance and human capital are obsolete. Organizations can be open minded to digital progress to foster a strong digital culture. However, this also requires the skills and resources to transform ideas into useful and scalable solutions. This is particularly pertinent to prison settings, as they present infrastructural challenges for things like connectivity and security protocols. Coupled

¹ Accenture (2002), "eGovernment leadership: realizing the vision", available at: www.accenture.com/xdoc/en/industries/government/eGov_April2002_3.pdf

with risk averse organizational cultures, prisons often struggle to move past small scale projects and ideas. The limited investment in both technology itself and the skills to drive the project forward leaves many of our prisons digitally poor. Technological capability matures as leaders define their funding model and they can then generate momentum from experiments to drive growth. To ensure that organizations have the skills and resources needed to scale those initiatives, they need to determine in advance where funding will come from (Kane et al., 2017).

Whilst investment in skills and technology is important, the effect of it and impact on the digital readiness of an organization depends on how this investment is used: what kind of skills and technology are used and how this relates to or fits the whole organization's strategy. We've referred earlier to how Enterprise Architecture can be helpful for developing a needs-based approach to digitization (Knight & Van De Steene, 2017). This approach assists the evolution of technological capability by directly addressing the complexity of needs of an organization and its people and achieve a common understanding that can be documented through a digital strategy. Schwer et al. (2018) analysed the relation between Enterprise Architecture and digital maturity, based on Archimate 3.0, a well know enterprise architecture model. They found that none of the 15 digital maturity models they analyzed address all aspects of the enterprise architecture model. In particular, technological readiness is missing from their framework. Instead, the focus is on choosing the best technologies based to fit the business requirements and implement them using common standards and approaches.

Schwer et al. (2018) also found that within the scope of this digital maturity model, there needs to be focus on the analysis of technological knowledge and resources as such (quantitative). In addition, there also must be a review and understanding of what kind of technologies are used and how they are used to achieve certain business objectives (qualitative). Technology is not new to prisons and many resources are spent across jurisdictions to implement and maintain digital services. However, this does not necessarily mean technology is used to successfully achieve the organization's business strategy; and in the case of prisons this could mean enhanced rehabilitation and better resettlement and not just improved administrative

efficiency or better security measures. The assessment of technological capability can be enhanced by close monitoring and evaluation (Schwer et al., 2018). This highlights another important dimension of the journey towards digital maturity—metrics and evaluation.

Metrics & Evaluation

This dimension highlights how decision making is guided by data and how evaluation can propel digital transformation trajectories. Data helps to evaluate the organization's strategic and operational ability to rigorously use data and information assets to maximize business value. (TM Forum, 2021).

Evaluation and the use of data does not routinely appear in the majority of the digital maturity models we have analyzed. Teichert (2019) identified that this was observable in dimensions such as 'Customer Insight & Experience' and also 'Compliance & Security'. However, these areas were largely focused on the success of digital projects rather than deploying data to motivate decision making. It is therefore important to establish the distinction between process success (using data to evaluate the direct outcomes of using technology) and further using generated data for decision-making and planning (generating more insight to support the organization's strategic future). In the TM Forum (2021) digital maturity model, the data dimension was recently added to evaluate an organization's ability both strategically and operationally to ethically and effectively use data and information assets to maximize business value. They make a further important distinction between 'data governance,' 'data engineering,' and 'data value realisation,' which is a valuable way of addressing different elements of using data for corrections: where data engineering stands for the design and implementation of architectures and data models to support the data within the different systems, data governance is necessary to define policies and procedures for maintaining data security, compliance, and also privacy aspects related to the use and ownership of data.

Data value realization can be understood through the use of data to create processes and solutions to identify the value and effectiveness of technology. In the context of corrections, we

can elaborate further on this by exploring the organization's readiness to make strategic decisions, implement evidence-based practices and enable continuous improvement of practice based on specific insights from data analysis. For example, Gill and Van Boskirk's (2016) digital maturity model uses both customer and business data to measure success and inform strategy as a separate dimension which they call the insight dimension.

Methodology

Development of DigiMaC™

Based on this extensive review of the digital maturity literature we have developed a penal digital maturity tool. This is informed by key dimensions of digital maturity and also shaped by the landscape of the prison such as security, human rights and deprivation. The five dimensions the tool explores are:

- Incarcerated people Centric
- Organization
- Culture
- Technological Capabilities
- Evaluation

Using this bespoke digital maturity model (DigiMaC™), we surveyed prison services across the world. The value of undertaking a global survey is important for sharing best practice and highlighting digital inequalities. Commitments for digital equality are wide reaching and of benefit to all societies in social and economic terms. The value of our research is that we were able to identify three broad stages of digital readiness (*leaders, progressors and preparers*).

The study comprised of a global electronic survey to senior leaders responsible for digital implementation and management. Of those that responded, four case studies were identified, which involved semi-structured interviews with those responsible for digital technology in the jurisdiction's prison service. The cases were selected based on their digital maturity scores. A range was selected to demonstrate variation in prison's capacity and capability to deliver digital services.

Recruitment and Sample

Fifty ($N=50$) correctional services were invited to take part in the survey. Recruitment was supported through organizations like the International Corrections and Prison Association (ICPA), EuroPris, the Corrections Technology Association (CTA), and Council of Europe to invite their members. The target sample were those responsible for digital implementation and management, often known as Chief Information Officers (CIO). A total of 22 facilities located in Europe (13), North America (5), Australia (2), Africa (1), and Asia (1) completed and submitted the questionnaire (44% response rate). Out of these facilities, 12 provided open-ended responses, and four were selected for in-depth interviews. We were not able to obtain responses from any facilities in South America.

Reaching the ‘right’ participant to take part in the research was a challenge. Despite our efforts to launch and invite participants it is likely many CIOs across the globe were not reached by this recruitment process. Another barrier we faced in this global study is language. Although the survey was commissioned in three languages—English, French, and Spanish—it is likely that some prison services would have been able to respond, had we been able to provide the survey measure in additional languages, such as Portuguese, Mandarin, or Hindi. In addition, the COVID-19 pandemic interrupted data gathering and progress of this study, as correctional facilities across the globe clamored to keep their residents and staff safe and simply did not have additional time to spend on a lengthy survey related to their digital maturity. Nonetheless, the diversity of facilities and jurisdictions that responded gives us confidence that our model and results from this pilot study are comprehensive and allow us to refine our model.

Survey Data Collection and Measures—DigiMac™

Based on our review of literature on digital maturity in organizational settings, we consolidated the key themes outlined at the beginning of this report to inform the design of the DigiMac™ survey tool. This bespoke tool was designed to capture the distinctive context of the prison, which existing models were unable to address. We asked respondents to answer 61 4-point Likert-scale questions (completely agree, somewhat agree, somewhat disagree, completely

disagree, don't know) and five open-ended questions across five domains: 1) incarcerated people & offender-oriented approaches, 2) culture, 3) organization, 4) technological capabilities, and 5) using insights and evaluations.

Incarcerated people & offender-oriented approaches:

The section on approaches that include or exclude currently incarcerated people included 7 Likert-scale questions and one open-ended question. Among others, Likert-scale questions included "We include incarcerated peoples in developing digital services" and "We acknowledge that digital skills are important for resettlement." The open-ended question asked: "Please describe your incarcerated people and offender-orientated initiatives ... (optional)."

Culture:

Cultural digital dimensions across correctional settings were measured with 12 Likert-scale questions and one open-ended question. Items included statements such as "There is a strong belief that our organization needs to change and that technology can help with this" and "We invest in targeted digital education and training at all levels of our organization." The open-ended question asked respondents to comment on their organization's vision and was optional.

Organization:

We used 11 Likert-scale questions and one open-ended question to assess organizational structures and functions. These included "We dedicate appropriate financial resources to digital strategy and implementation" and "Our organizational model encourages cross-functional collaboration." The final question in this section was open-ended and optional and asked respondents to comment on organizational functions.

Technological capabilities:

The largest number of Likert-scale items (21) assessed the technological capabilities of correctional settings using questions such as "Our administrative staff have easy access to computers," "Our incarcerated peoples have easy access to digital services in educational and work areas," and "Our prisons have broadband connectivity (private or public)." The optional,

open-ended question in this section asked “Please comment on your technological capabilities and competences ... (optional).”

Using insights and evaluations:

The final section of the questionnaire asked 10 Likert-scale questions and one open-ended question about how correctional organizations use feedback, insights, and evaluations to improve their digital maturity. Questions included “We have clear and quantifiable goals for measuring the success of our digital strategy” and “Offender user feedback actively steers our digital strategy.” The final open-ended question asked respondents to describe how they have used insights and evaluations and was optional.

Data Collection and Measures—Qualitative Interviews

In addition to the surveys, we contacted four of the facilities who completed the questionnaire to conduct follow-up in-depth interviews to further examine the five dimensions of our digital maturity across corrections tool. The CIOs of these respective jurisdictions and facilities were first contacted by email to ask for their consent to participate in these interviews. We then arranged a meeting via video conferencing to conduct the qualitative interviews. In each interview, one of the researchers would lead the questions, whereas a second team member would attend, take notes, and ask additional follow-up and probing questions. Interviews lasted on average 60 minutes and were audio-recorded and transcribed for analysis. We used a semi-structured interview guide that revolved around the following five themes: (1) *innovation drivers and motivations*, (2) *cross functional teams and working practices*, (3) *hierarchies and taking risks*, (4) *ethical guardrails and values*, and (5) *investment and resources*. These themes were developed based on our initial findings from the survey instrument and the qualitative comments that we received from several of the facilities and jurisdictions. These themes are different to the dimensions outlined in the literature review and thus are distinctive to the data we collected from the surveys. They are a product of our thematic analysis. They aim to provide a more in-depth and targeted addition to the five thematic areas that were examined in the quantitative section.

Data Handling

Questionnaire Analysis

All Likert-scale questions were coded as completely agree=3, somewhat agree=2, somewhat disagree=1, completely disagree=0, don't know=missing. To make the data manageable, we created five aggregated variables of digital maturity across the five dimensions outlined above by summing up the items for each dimension. The according sum of the values was then divided by the number of items in each dimension to achieve a single digital maturity score within that dimension, with the value 1 designating low, 2 medium, and 3 high digital maturity. For example, the insights and evaluations dimension contained 10 items. The highest sum a respondent could have was 30 if they strongly agreed with all statements, whereas the lowest was 0 if they strongly disagreed with all statements. A sum of 0-10 (either strongly or somewhat disagreed with all 10 items) was recoded into 1 = low digital maturity, a sum of 11-20 (a mix of agreement and disagreement) was recoded into 2 = medium digital maturity, and a sum of 21-30 (agreed strongly or somewhat with all 10 items) was recoded into 3 = high digital maturity. This approach was repeated for all five dimensions and allowed us to gain an insight into which dimensions of correctional organizations were highly digitally mature and which ones had room for improvement.

In addition, we created a single digital maturity score as a sum of all five dimensions. Organizations that had high digital maturity across at least four of the five dimensions were categorized as having high digital maturity (N=5). Those who had high digital maturity in two dimensions and medium or low digital maturity in the other three, as well as facilities with medium maturity in at most dimensions paired with a mix of high and low digital maturity in up to two dimensions were categorized as having medium digital maturity (N=12) and facilities with medium digital maturity in up to four dimensions and low digital maturity in up to two dimensions were categorized as having medium to low digital maturity (N=5). We had no participating facilities who displayed low digital maturity across more than two dimensions.

Case Study Analysis

A total of four jurisdictions were invited to take part in the second phase of this research. Interviews were carried out via video call. The interviews were audio recorded and transcribed. A thematic analysis was undertaken which was informed by themes in the DigiMaC™ scale. We also requested to see policy documents, but this proved difficult to analyze uniformly across this part of the sample. Using a thematic analysis, the interviews revealed five major themes (1) *innovation drivers and motivations*, (2) *cross functional teams and working practices*, (3) *hierarchies and taking risks*, (4) *ethical guardrails and values* and (5) *investment and resources*. Within these themes a number of sub-themes were also identified. A pen portrait of the four case studies is presented to provide a summary of their digital experiences at the time of interview.

Findings

Questionnaire findings

The table below presents our results across the 22 facilities and the five digital maturity dimensions, as well as the broader categorization of high, medium, and medium-low digital maturity.

Table 1. Digital maturity across facilities

Facility/Country	Incarcerated			Technol.	
	people	Culture	Organization	Capability	Evaluation
Europe	High	High	High	High	High
North America	High	High	High	High	High
North America	High	High	High	High	High
Asia	High	High	High	High	High
Australia	High	High	High	High	Medium
Europe	High	High	Medium	Medium	Medium
Europe	High	High	Medium	Medium	Medium
Europe	High	High	Medium	Medium	Medium
Europe	High	High	Medium	Medium	Medium
Europe	High	High	Medium	Medium	Medium
North America	High	High	Medium	Medium	Low
Europe	Medium	High	Medium	Medium	Medium
Europe	High	Medium	Medium	Medium	Low
Europe	High	Medium	Medium	Medium	Low
North America	Medium	Medium	Medium	Medium	Medium
Europe	Medium	Medium	Medium	Medium	Medium
Europe	Medium	Medium	Medium	Medium	Medium
Australia	Medium	Medium	Medium	Medium	Low

North America	Medium	Medium	Medium	Medium	Low
Europe	Medium	Medium	Medium	Medium	Low
Europe	Medium	Medium	Low	Medium	Low
Africa	Medium	Medium	Medium	Low	Low

Only five facilities in Asia (1), Europe (1), North America (2), and Australia (1) responded that they had high digital maturity across most of the five dimensions, whereas a majority of countries, especially European countries, reported medium digital maturity. Higher scores were more generally apparent in the involvement of incarcerated people in digital access and digital skills training as well as organizational culture, whereas the lower scores appeared to cluster around the use of insights and evaluations to improve digital maturity. In addition, two facilities in Europe (1) and Africa (1) had low scores in organizational structures and processes and technological capabilities, respectively. These results give us a general impression of digital maturity across several national contexts, with the majority of facilities recognizing that there is room for improvement across the various digital maturity dimensions.

Case Study Findings: Perceptions of Digital Maturity

This section presents the findings of the four jurisdictions selected as case studies. There are five themes that reflect the focus of the interviews: (1) *innovation drivers and motivations*, (2) *cross functional teams and working practices*, (3) *hierarchies and taking risks*, (4) *ethical guardrails and values*, and (5) *investment and resources*. Within each category, we found several themes that will be reflected on in the according sections.

In order to contextualize the cases a short pen-portrait of each jurisdiction will be described here. Four cases were selected based on their responses to the survey to reflect a range based on their digital maturity score (low-medium-high).

Case 1- High Digital Maturity (Europe)

This jurisdiction develops their own digital strategy that is influenced by cross government agendas. In terms of developing and shaping their digital provision within correctional facilities they take an informed approach, that is, glean ideas, best practice and formal contracts within the local and global justice sector as well as partnering with private companies. There is a significant push from senior government officials to drive a digital service. Delivery is ensured through close co-working, regular consultation with end users and a commitment to meet the needs of all affected parties. There are tight budget constraints, which bring about increased governance and auditing from higher administration. This service is highly responsive to data protection and privacy, emphasizing the need for security. However, this service does indicate they have a commitment to rehabilitation and fair treatment.

Case 2- High Digital Maturity (Asia)

This jurisdiction is digitally driven by a national digital strategy that all public services are expected to deliver on, including corrections. As a consequence, the prison services are answerable to tight governance dictated by their national strategy. In overcoming technical skills shortages and difficult procurement exercises, their justice sector has set up a sister company in order to cross work, collaborate, attract, and retain the right expertise and deliver digital strategy objectives. This coordinated approach assists in the design of features to enhance data sharing across agencies—much like a smart model. Security and rehabilitation are perceived as important facets of corrections in equal measure. Their biggest challenge is change management practices in order to be able to deliver quickly. Budget constraints are small and those responsible for digital change are able to invest in solutions at a fast pace. End users such as incarcerated people are not expected to pay for digital services provided. Feedback loops are part of the design and development process. strict legislation ensures that technology must not create harm to users.

Case 3- Medium Digital Maturity (Europe)

This jurisdiction is digitally informed by broader citizen centric policies, where by all citizens are digitally enabled. Unlike Case 2, their ICT division is small and largely works independently of

wider government digital departments. However, cross working is evident and the prison services seek to collaborate and formally partner with both government departments and private companies. Their solutions are procured and look to draw from skills outside of their own department and the government. A significant driver is the delivery of solutions that result in normalcy for end users. These values are shared across the justice sector. They deliver digital services that are mindful of security with a strong commitment to rehabilitation and successful re-entry. Feedback from users is important to this service and they use pilots to test solutions carefully.

Case 4- Medium to Low Digital Maturity (North America)

This jurisdiction takes a strategic approach to their delivery, and this is reinforced by a digital push from government. They are outward looking and are committed to sharing good practice and their own projects across national and international communities. Procurement for this jurisdiction can be a challenge and can slow down the pace in which solutions can be introduced. Despite this they work with outside technology companies and cross working across government does take place. Plans to eradicate siloed working are important and digital leaders are committed to normalizing digital. Risk taking can be difficult in this jurisdiction, as the government is cautious and sensitive to organizational reputation. Budget constraints can be challenging to evolve progress and the need for more cross-department work would be welcomed. This jurisdiction is significantly committed to reducing harm, and equality and fairness is designed in to all solutions. Data sharing is a significant achievement for this jurisdiction given the size and scale of the country and the diversity of regions.

(1) Innovation Drivers and Motivations

The Push

In all four cases, there is a significant 'push' from the respective central governments to digitize correctional facilities. The *intensity* of this push, however, does vary across the cases. Some cases are more established with policy and legislation firmly rooted in digital progress. For

example, Case 2 explained that their national government commitment outlined in a detailed national strategy, was one of the major driving forces for them *'to go on the digitization journey'*. They also see technology as a key lever to optimize their scarce labor resources so that their staff can take on complex work. In comparison, Case 4 explained that they *'have got a significant push on digital right now'* and as a result, central government had just *'modernized'* their policies. For Case 3, the prison service is sensitive to end user needs and their digital journey is based on *'citizen centric'* principles. In the case of incarcerated people, they highlighted the issues of *'when inmates go free and he can't use public services,'* which in this case are all accessible in digital form by default. Digitizing the prison is therefore an important feature of resettlement. Case 1 and 2 both explained the importance of cross justice working whereby the responsibility to digitize is adopted by each service. All of the cases talked about COVID-19 as a significant driver more recently and the expectation to meet basic digital needs such as communication and safe data sharing accelerated. Case 2 explained how this provided leverage to accelerate some of their pilot projects. None of the cases talked about efficiency as a driver for digitization.

(2) Working practices

Management approaches:

Digitizing whole services is complex and across the selected cases the size and scale of the prison estate varied. In addition, it is evident that management approaches also varied and in turn these are influenced by culture, finance, and penal politics. For example, Case 1 talked about having sole responsibility to drive the digital enterprise within the prison service. However, through central government, all CIOs were expected to collaborate and work across sectors. In contrast, Case 4 explained that the *'notion of transformation or modernization I think permeates the organization but it's one off and siloed'*. Case 4 wanted to *'try to champion a more enterprise approach'* whereby the organization adopts a more holistic approach to digitization.

Partnerships:

All cases highlighted the importance and value of relationships with partners—both inside and outside the organization. Brokering these relationships was critical for transformation and achieving adoption. All cases reported how change management was crucial for digital change but can be hard to achieve.

The degrees and intensity of relationships *inside* the organization varied across the agencies—perhaps explained by the nature of how the government and justice departments were set up. In some cases, lines of reporting are rigid and those responsible for digital transformation are sometimes placed within senior or strategic management structures. Those that have senior management responsibilities and are placed on cross functional committees and boards scored higher on the digital maturity scale. It is evident that whole organizational oversight is a critical feature for digital growth. For example, Case 2 has developed a whole organization oversight known as an enterprise approach. However, Case 4 has not did not adopt a whole organization oversight. It is evident that, according to the case interviews that strategic oversight is significant for Case 1 and 2 and more challenging for Case 4.

Partnerships *outside* their organization are evident in every case. Case 2 identified challenges with partnership working, particularly around procurement of products and services. Their investment in a 'sister' company to their justice departments allows them to attract the right skills with competitive salaries as well as develop solutions quickly, reduce administrative labor, and cross-functional working. Moreover, their partnerships extend beyond this with co-producing work with universities for independent evaluation and knowledge exchange. However, unlike Case 1, Case 2 talked about the challenges of procurement which they felt creates significant delay of progress. Case 4 is also outward looking and there are several formal partnerships and contractual arrangements with ICT companies. Like Case 2, they are open to sharing best practice and supporting global justice departments, such as sharing MOUs. As Case 2 highlighted, the advent of technology has forged wider relationships by '*bring organizations*' together. As they go on to explain the digital transformation process encourages them to be

'having conversations about virtual program delivery- well let's make sure we have a view on health....so we have visibility and common themes'. Partnerships inside organizations can be strengthened as a result of the process of digitization. One common theme of external partnerships is assistance and expertise on data sharing. Case 3 explained that most of the ICT capability was compromised because there were not *'not enough special skills'*. Case 3 elaborated that contractual arrangements were readily in place to support this approach to digital transformation and that *'buying the technology from private companies'* was normalized in their agency. Case 1 explained that justice departments *'didn't trust the system'* for many years and were not necessarily open to external collaboration. However, COVID-19 was *'a game-changer'*, according to Case 1, whereby attitudes and acceptability of transformation was driven by business needs. In addition, Case 2 highlighted that with labour constraints and raising public expectations, this would mean that services were under pressure to deliver more with less. Case 1 welcomed how challenges and problems were trigger points in digital innovation and that digital was perceived to be part of service solutions and remedies.

Beneficiary engagement and feedback

All cases talked about feedback mechanisms, but these remained relatively light touch and were not overly formalized. Rather, feedback from beneficiaries and affected parties appeared to be informal conversations, where little of this was recorded or systematically analyzed. Case 2 appeared to have the most extended feedback mechanism across the cases. In particular, they were interested in *'their whole journey'* and this was important for development of digital solutions. However, they didn't have a specific framework or methodology to capturing beneficiary or user feedback. Case 3, however, was keen to pilot projects and saw that feedback was part of the trialing process. Cases 2 and 4 also used external evaluations to help them to review progress and effectiveness of solutions. Case 2 explained they had used their own digital maturity tool across all government departments. Case 4 emphasized the need and urgency of *'listening to colleagues'*.

Planning

Strategies are fundamental work to all cases. Cases 1 and 2 highlighted how their strategic plans were across either justice or government departments and they highlighted how digital architecture was closely aligned to governance and business needs and aims. For Case 1, cross sector CIO meetings were an integral part of their practice. As a result, government priorities, including digital, were adopted quickly and consistently across all government sectors. Case 2 explained that this high level of planning meant that key deliverables were transparent and that the digital lead would be accountable if the key deliverables are not met. Case 4 talked about the emphasis on *'business outcomes'* rather than on technology, they felt this encouraged more detailed planning and closer working relationships. They also talked about the importance of planning solutions that looked at whole journeys of incarcerated people and that solutions were not siloed, allowing for *'through the gate'* support. This strategic planning was closely related to the aforementioned push of central governments to digitize across various sectors.

Cross-functional teams

It becomes evident across the cases that those that score high on all digital maturity measures work seamlessly across teams, departments, and centrally. For example, in Case 2, the responsibility is shared across all the departments. Furthermore, this is supported by shared resources. They explained that they *'get all the pinpoints to digitize and to review using the service journey to do a business process reengineering for the whole organization'*. In Case 1, high level strategic meetings are essential to driving the digital journey. Whereas Case 4 had to get strategic managers' *'buy in'*. For example, *'first time that hand helds had been used by officers to do their job. It's the first time that we had WI-FI in our institutions'* and thus were able to demonstrate effective outcomes. The aspiration for an enterprise approach was described by some of our interviewees. Case 4 went on to explain there was a need *'to be a business partner not a service provider'* and that discretion was sometimes needed at very local levels dependent on need. They noted that *'as people become more tech savvy...regions are going to become more independent in how they consume technology and where they consume technology'*.

(3) Tensions: Responding to Change

In this context tensions about the deployment of technology can in some cases prevent digital maturity. Case 2 explained that there is *'one vision and mission'* and that they had overcome the tensions between security and rehabilitation. This was less resolved in the other cases. Case 3 explained how values can be shared operationally but tensions can still be evident, and Case 4 explained how the current context of change directly impacts on both development and adoption. Moreover, personal values can impact on priorities for these digital leaders.

Hierarchies and risk taking

It is evident in some cases that the freedom to make decisions is easier than in others. For example, Case 2 explained *'we try fast and fail fast'* and that *'if you fail, we just abandon the whole project'*. This approach allows Case 2 to *'start small and we scale it up accordingly'*. In essence, they are prepared to take risks and not frightened of failure. The business structures outlined by Case 2 provide opportunities to work with autonomy. Their digital culture is shaped by qualities of risk taking and flexible hierarchies. This is less evident in Cases 3 and 4, where hierarchies are less flexible. This can be explained by tight approval mechanisms that are largely influenced by budget, which can constrain the ability to pilot and develop their digital offer. Case 1 outlined how *'pro-tech leaders'* make it easier to digitally mature. This can be operationalized by for example what occurs in Case 3, where they pilot projects very regularly. The cases also respond differently to regulation. Case 2 designs in regulation and therefore it is normalized. This provides room for reviews of what they call *'archaic'* regulations that do not align with the digital world. In Case 1, consultation within the organization is a way of responding to tight regulation and managing.

Measuring Performance

Enhancing performance is complex and meeting the needs of the business can sometimes be nebulous, especially in respect to criminal justice landscapes. Case 2, for example does not measure the performance of technology or the service directly—to them, the needs of users is

important and so are the outcomes and returns of investment. Like Case 1, they aspire to assess their contribution based on their national agendas, such as rehabilitation, preparedness for release from prison, and safety. The route to achieving these things are not exclusive to digital. Case 4, for example sees the need for a *'focus on talent management'* with a view to ramping up specialist roles, which the digital journey needs to procure to mature. However, policy can change measurement priorities and this can have a significant impact on the direction of travel. Case 4 explained how these policy changes can consume time to plan and map digital development in their jurisdiction. However as in Case 1, their jurisdiction measures effort collectively not just by departments. This collective approach allows greater flexibility especially when piloting new innovations.

(4) Establish ethical guardrails and values to keep pace with innovation

Protocols and thresholds

In all four case, legislation is a significant driver for building in confidence and safety measures. Privacy was mentioned by all the cases, as well as the need to protect and store data robustly. How these are administered, however, varies across the jurisdictions and there are nuances about how much and what kinds of privacy are maintained. Case 2 was very clear that technology should *'not create unfair treatment'* and the risks of deploying solutions like AI were deemed to be treated with caution. They explained that they will never use AI position as *'a single factor'*. Case 4 also added that technology should be enabling and not drive exclusion, it should be inclusive, such as meeting the needs of different languages and disabilities. They also explained the risks of designing bias into the technology needed to be eliminated and that this is something they are acutely aware of. Case 1 explained how much of the legislation was already built into common law and collecting data was done very cautiously and driven by their cultural context of potential harm. Case 3's interpretation was driven by their wider social practices and the approach that the availability of digital should be normalized.

Meeting need

Further to concerns of privacy and accessibility legislation, all Cases were able to illustrate some methods of shaping services that met human needs. Case 3's normalization approach meant that services had to routinely make regular checks with users to ensure their pilot projects were fit for purpose. Case 2 explained that those responsible for delivery of digital came from the same place as practitioners and felt this was of significant value as they had experience of the context. Case 4 labored points about relationships and cross-functional working and believed that trust was significant to open these dialogues about the digital journey and what it can offer. However, they pointed out that digital was not a magic bullet and that they often find themselves managing expectations or the 'demand management' about the digital offer. (5)

Investment and resources

All cases described the budgetary constraints they must work within. Aside from Case 2, all of the other jurisdictions have to work within budget. Case 2 explained that as part of their national government's strategy, additional budget is allocated to support their digital transformation plans. However, Case 4 explained that a large proportion of budget is on staff labor and can often mean they have to work under capacity to deliver projects. Case 4 thought that under these circumstances it is difficult not to focus on projects that are considered to be high priority. In addition, their budgets were shared by other departments and hence there were obligations to meet other project deliverables. Case 1, however, perceived that budgetary investment was low, despite scoring high on digital maturity. Instead, Case 1 works within an infrastructure (cross-departmental) that is not determined solely by budget, which means innovation can take place.

Expertise

Cases 2 and 3 explained finding staff with specific digital skills and expertise was a challenge in their jurisdictions. Particularly, in Case 2 there was a national shortage of digital skills labor. The market forces then mean that these experts '*can command higher pay*'. As explained earlier, Case 2 overcame these challenges by setting up a sister company to both pool these resources

and skills and to remunerate workers at competitive rates for the digital industry. Case 3 also talked about the need to have digital workers who understood the penal context. They are committed to delivering services that meet the end users' needs and that this was an important '*skill*' they felt was important to the delivery of their transformation program.

Concluding Discussion

Our project has highlighted the need to adopt a holistic approach to understanding digital maturity within the context of our prisons. Many existing digital maturity models fall short of understanding the culture of an organization and its people and describe digital maturity as a series of stages. DigiMac™ has been designed to understand process, delivery, *and* consumption of digital services at the same time as understanding the nature and complexity of the prison landscape and its people. In contrast to wider society, prisons have not digitally matured at the same rate or equally in tandem—there is a ‘digital lag’ (Knight, 2016). As a result, digital inequality is a reality for people in prison. Therefore, the stakes are high. Without digital opportunities, there are significant barriers to re-entry and rehabilitation (Reisdorf & Rikard, 2018; Reisdorf et al., 2022) and the journey of desistance becomes further compromised.

Analysis of both our quantitative data of 22 jurisdictions that took part in the pilot survey of the DigiMac™ tool and our qualitative follow-up interviews with four of these jurisdictions revealed five core themes of the digital maturity process: (1) *innovation drivers*, (2) *working practices*, (3) *risk taking*, (4) *ethical approaches*, and (5) *investment*. This study has identified three types of digital maturity within our sample. We are cautious to advocate overly simplistic typologies. However, this exercise in grouping and identifying patterns of activity and practice provides a helpful oversight on what dimensions jurisdictions are working on and what the gaps are in order to achieve a holistic human-centred approach. We believe readiness appropriately describes the mood of digital maturity during the evolutionary phases of prison digitization. It captures the capacity, capability, and culture of this endeavour.

Leaders in readiness

Jurisdictions in this group scored high in all five dimensions. They stated they had implemented and executed cross government strategies. Their activity is informed by experts including experts by experience and end users. Their agendas have a strong rehabilitative focus and there

is significant investment to mature their digital portfolio. However, their activity around evaluation appears to be weaker compared to the other dimensions.

Progressors in readiness

Jurisdictions in this group score high in two dimensions. They describe citizen-centric agendas and are driven by normalization. There is evidence of cross working practices but they experience barriers to working collaboratively or in partnership. There is investment, but this is routinely small scale. Periodically, they do attempt to gather evidence and evaluate progress.

Preparers in readiness

Jurisdictions in this group do not score high in any of the dimensions but do score medium in 3-4 dimensions. They adopt a strategic approach, but this is siloed and operates locally. They have a strong desire to secure partnerships and collaborate. They also operate in prison services who are nervous about digitization.

Targeted Work and Investment

The holistic approach to maturing a digital portfolio with prisons requires targeted work and investment. The table below outlines key areas that require focused attention by services to achieve prison specific digital maturity. We advocate a collaborative approach and we have evidenced that partnerships both within and outside prison services promote digital growth that leads to ethical outcomes. We are also clear that growth is not solely about digital—it is about centring human need and achieving healthy outcomes that are ethically grounded and reduce harm.

Dimensions	Targeted work & investment
Incarcerated people Centric	Engaging with beneficiaries Meeting needs

Organizations	Change management strategies Communication Cross working Beneficiary engagement and coproduction Policy alignment
Culture	Change management strategies Partnerships Risk taking
Technological capabilities	Needs based Accessibility and competency Sharing best practice and models
Evaluation	Building and gathering evidence Evidence informed decision making

Incarcerated peoples

We found that delivering digital services for incarcerated peoples to use and support their needs via digital services were most successful when a *needs-based* approach was embraced. For example, *engagement* techniques were described by those jurisdictions committed to centering incarcerated people needs. Equally, types of engagement varied across jurisdictions including feedback or consultation strategies. Outcomes included arrangements that met the daily needs of people in prison. For example, one jurisdiction said ‘*services provided to inmates are free*’. However, beneficiary feedback was not a routinized feature across jurisdictions.

Organizations

It is no surprise that across this research we have identified differences between jurisdictions. Those that score high on digital maturity have well developed cross-functional teams, established partnerships inside and outside the organization. Shared state visions including strategies, policies, and legislation to digitize society were significantly influential to those achieving high scores on digital maturity dimensions within the corrections space. Without this

'push' from central government, organizations achieved lower digital maturity scores in this study and found it more difficult to establish partnerships, work across departments and influence policy changes.

Culture

We found that the culture of correctional departments also influences digital maturity. As described above, organizations are greatly assisted by a pro-technology 'push'. This, in turn, allows agencies to plan their digital journey and engage beneficiaries in the digital experience. Many talked about the need for digital to be normalized and for most, this still remains an aspiration. The challenges seemed to point towards prisons adapting to change and that strategies or solutions to engage people in a digital world was something still to be overcome rather than mastered.

Technological capabilities

Sourcing expertise was identified as key to achieving enhanced digital readiness. For those scoring higher in digital maturity, accessing expertise seems to be a global challenge. Finding the right skills (especially ICT) and retaining them was challenging for some jurisdictions.

Evaluation

From all the dimensions, this was the lowest scoring feature in this study. The ability to embrace and build in evaluation methodologies was not routinized or an embedded part of business operations. This is best achieved when government wide agencies collectivize effort or performance management. When reviews were undertaken, jurisdictions were able to make quick decisions about their digital direction and work close to meeting the needs of beneficiaries.

Concluding Thoughts

Overall, this study highlights that digital readiness and adaption is a complex set of human interactions, relationships, and negotiations (Aslanova & Kulincina, 2020). The path to maturity

is never ending and the correctional context presents some distinctive obstacles that other government agencies do not have to respond to. The COVID-19 pandemic has acted as a catalyst for all things digital—shining a bright light on the pace of digitization in our prisons. This increased visibility of digital services (Westerman et al., 2021) has, on some levels, helped limit some of the depriving effects of imprisonment—for example, complimentary family contact (Knight, 2020). It is clear that prisons’ adaptation to change requires careful planning and management as well as the right kinds of skills and knowledge to foster digital change (Kane et al., 2017). Much of the literature that reviews and defines digital maturity talks about evidencing a digital culture. Here organizations demonstrate digital operational practice and human capital with holistic ease (Westerman et al., 2014). This holistic ease demands insights, partnerships, attentiveness to people’s needs, skills, and strong leadership. Of distinctive note is that those that scored highest in the dimensions were clear that their vision and strategies enhanced rehabilitative outcomes. The authors of this report, amongst other leaders in this field of digital corrections, are committed to this agenda. Moreover, the need to develop digital desistance is more necessary than just merely a digital culture. Our prisons demand that all things lead to recovery from harm, trauma, and dangerousness. The Digital Desistance Network (2023- forthcoming) define the path toward recovery of which digital is an important tool in their manifesto:

We need to be bold and drive the digital justice evolution in the direction of desistance. That everything leads to this. To empower users and staff agencies in the justice sector requires transformative and compassionate leaders with ethical reform at its beating heart.

Next steps—the DigiMac™ tool

This study has enabled the rigorous development of the DigiMac™ tool. It has been developed from a sound empirical evidence base. The tool will enable correction services to explore their own unique digital readiness and support corrections teams in making decisions, identifying priorities, and meeting the needs of beneficiaries.

The DigiMac™ tool is available for correction services and technology partners to use. Access to the tool is by request to the authors of this report. There is a host of support materials and, by further request, expert consultancy. We recognize that the digital evolution of our justice services is a constantly changing landscape and we are therefore interested in tracing impact of this tool. As researchers, we are keen to maintain relevance and continue to collect ongoing evidence. Partnering with us in this exciting journey will help to ensure investments are securing good and fair justice outcomes for all.

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