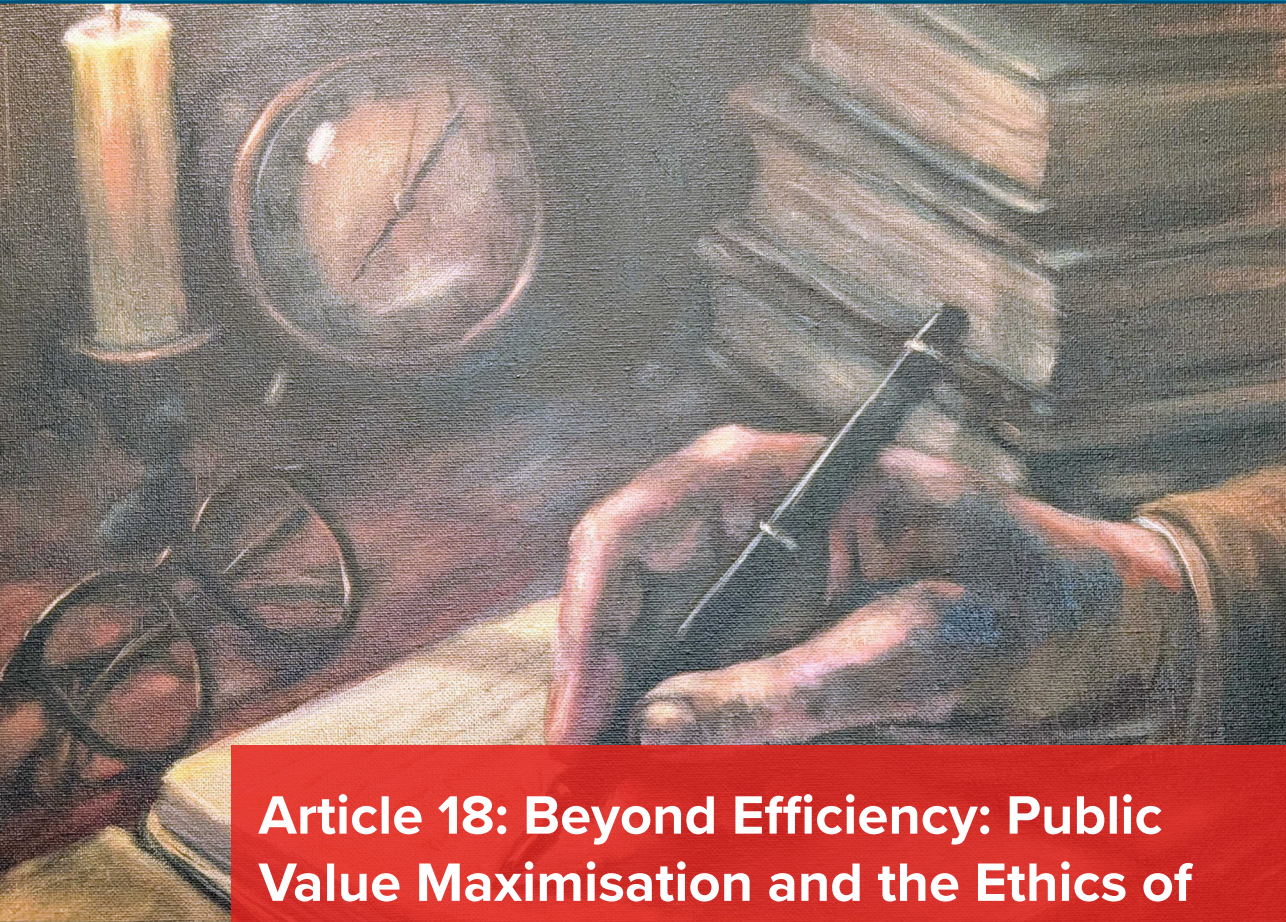


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BEYOND EFFICIENCY: PUBLIC VALUE MAXIMISATION AND THE ETHICS OF DIGITAL REHABILITATION

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Abstract

This article is a culmination of our scholarship and engagements that intersects with practitioners and policy makers from across the world. Our recent work with the United Nations' Interregional Crime and Justice Research Institute (UNICRI) culminated in a report focusing on digital rehabilitation (UNICRI, 2024). We evaluated current practice and policy that focused on the intersection of rehabilitation and digital. Fundamental to this were important rights-focused and ethical principles to ensure digital creates no harm and is a key tool to adapt, enhance, and transform rehabilitation and human flourishing. The goal of the report was to provide practical advice and guidance about the ethical principles that should guide the use of digital rehabilitation in prisons, and how to plan for the development, implementation, and continuing provision of digital re-sources to support rehabilitation.

The digitalization of justice-led rehabilitation has been incremental and has proceeded faster in some jurisdictions and in some rehabilitation domains than in others, but it is undeniable that digital technologies are becoming a viable core element in justice-led rehabilitation. What is being created here is a form of digital public infrastructure that is part of the wider process of the digitalization of government, sometimes referred to as the e-government (Homburg, 2018). In this article we want to reflect on some of the implications of this from a public value perspective, and propose a model to ensure digital reform maximises the public value in this sector.

Keywords: digital; rehabilitation, public value, ethics



Background

In this article, we examine digital transformation in penal settings through the broader lens of Public Value Maximization (PVM), a "*strategic management framework for public sector managers*" that argues public sector organisations should aim to create services, social outcomes, and benefits that together constitute "public value" (O'Flynn & Alford, 2009, p. 172). Ideas about public value provide a way to bridge the gap between the need for "efficient and procedurally correct services" and "*the engagement of citizens in developing public services and policy.*" Our focus here is on the civic value that derives from the digital public infrastructure that is being created in penal systems, and our goal is to set out some ideas that will support the public value creation process and inform the governance of emergent digital public infrastructure (DPI). Recently scholars have provided a conceptual framework that has helped us critically reflect on the digital rehabilitative enterprises (Muzzucato et al., 2024). This provides a justification for the need for ethically informed digital design and practice, especially in the context of rehabilitation. It also emphasises the importance of countering what many fear to be the ubiquitous harms of technology (Zuboff, 2015) that can arise within penal systems, such as the amplification of punishment and neglect of human rights. We therefore set out key guiding principles for practice and policy in light of expedient digital growth in our penal services.

Shaping the Digital Transformation in Penal systems

The digitalisation of justice-led rehabilitation represents more than a technical evolution; it is a reconfiguration of the power relations that structure penal life. As Ross et al. (2024) observe, digital reforms are not neutral instruments but socio-technical processes that both reflect and reshape institutional cultures, values, and hierarchies. What is being built under the banner of digital transformation is a new form of *digital public infrastructure*—one that carries the potential either to extend surveillance and bureaucratic control or to cultivate empowerment and reintegration. As Muzzucato et al. (2024) caution, when digitalisation is pursued primarily for efficiency—through cost-saving automation or data-driven monitoring—it risks hollowing out the very *public value* it seeks to deliver. Drawing on Zuboff's (2019) insights into instrumentarian power, digital systems in justice-led contexts can easily become architectures of behavioural control, embedding asymmetries of visibility and authority that constrain agency rather than expand it. Similarly, the phenomenon of *techno-drift* (Powell et al., 2018)—where technological capability begins to dictate organisational priorities—illustrates how the pursuit of innovation can displace human and ethical judgement. To counter this, the development of digital rehabilitation must be understood as a civic and relational endeavour; one that balances the operational needs of institutions and their people (Van de Steene & Knight 2017) with broader societal imperatives of fairness, inclusion, and legitimacy. Conceived in this way, digital rehabilitation becomes not a mechanism of containment but a foundation for digital citizenship and civic renewal within and beyond the prison walls. Otherwise, the rehabilitative value is quickly extinguished.

Challenges in Traditional Rehabilitation

Traditional rehabilitation approaches in prisons have often struggled to adapt to contemporary social and economic realities. Limited resources, inconsistent access to education and vocational training, restricted expert support, swelling caseloads, and the persistence of punitive cultures within institutions have undermined rehabilitative efforts. Moreover, the exclusion of justice-involved people from digital life not only entrenches inequality but also leaves them unprepared for the demands of a digitally mediated society, perpetuating cycles of marginalisation and reoffending. Reisdorf and

Rikard (2018) demonstrate that digital exclusion compounds existing social disadvantages, limiting the capacity of formerly incarcerated people to rebuild autonomy and engage in civic and economic life. Similarly, Seo (2023) highlights how digital literacy and mentoring initiatives for formerly incarcerated women foster agency, digital competence, and social reintegration. Gurusami (2019) extends this critique, arguing that the structural conditions of punishment—racialised surveillance, gendered control, and institutional disinvestment—shape how digital and rehabilitative tools are experienced and contested. Taken together, these studies highlight that digital inclusion is not a peripheral concern but a central pillar of contemporary rehabilitation, essential to ensuring that justice-led systems promote equity, agency, and social participation.

Strategic Opportunity for Reform

The convergence of digital transformation and rehabilitative imperatives creates a strategic opportunity for reform. The digital transformation of penal systems is creating a particular form of digital public infrastructure that directly affects users (justice involved people, justice practitioners) and indirectly affects the people who interact with them (service providers, family). There is a responsibility on penal systems to do this in a way that produces something of enduring value.

Digital rehabilitation in prisons and probation must be recognised not as a service add-on but as the creation of a *digital public infrastructure*. As Ross et al. (2024) argue, digital transformation in penal systems cannot succeed if it merely digitises existing bureaucratic routines; it must instead reconfigure institutional practices around societal outcomes and public value. By embedding public value goals—such as dignity, equity, and democratic participation—into the design of digital rehabilitation systems, services can move decisively beyond surveillance and control towards empowerment and reintegration. This requires confronting what Powell et al. (2018) describe as *techno-drift*: the gravitational pull for technology to dictate priorities and drive data-exploitation in the name of efficiency. To resist this drift, digital rehabilitation should be grounded in ethical and civic principles that ensure technology serves people, not vice versa. Eaves & Rao (2024) provide an evidenced model that grounds human focused attributes to DPI. Identifying the operational needs of institutions and their staff is essential (Van de Steene & Knight, 2017), but it is equally vital to recognise wider *societal needs* in the form of public value—supporting fairness, inclusion, and civic legitimacy. As Muzzacato et al. (2024) emphasise, digital systems in public service should be judged by their contribution to collective well-being. Establishing digital rehabilitation as public infrastructure means designing platforms, contracts, and governance frameworks that deliver transparency, interoperability, and accountability as democratic obligations, ensuring that justice technologies are not tools of containment but instruments of civic renewal.

From Surveillance to Empowerment: The Strategic Opportunity of Digital Rehabilitation

Digital transformation in prisons is not value-neutral. As Zuboff (2015) warns in her discussion of the *Big Other*, digital infrastructures can either empower or dominate. She asserts that "*Instrumentarian power replaces the engineering of souls with the engineering of behavior*" (p.20). If digital rehabilitation is designed primarily for control, it risks becoming another form of surveillance that entrenches inequality and disempowerment. Yet, if guided by public value principles, digital systems can instead nurture autonomy, inclusion, and accountability. This demands a deliberate design approach—one that resists the extractive tendencies of surveillance capitalism and instead reimagines penal settings as sites of ethical, future-oriented digital citizenship.



The UNICRI report (2024) reinforces this point by urging systems, in this case prisons, to adopt ethical principles—legality, privacy, normality, proportionality, equality, and agency—in all digital needs assessments. Embedding these principles ensures technology serves rehabilitation rather than undermines it. Muzzicato et al. (2024) frames digital infrastructures as tools for generating “common good outcomes” such as dignity, fairness, and democratic participation. Taken together, these perspectives reveal a clear strategic opportunity: to harness digital transformation not simply for efficiency or control, but to maximise public value and prepare justice involved people for meaningful participation in a digital society.

Digital rehabilitation matters because it directly addresses the digital exclusion that exacerbates cycles of reoffending and social marginalisation (Riesdorf & Rikard, 2018; Seo, 2023). Access to and use of digital tools is no longer a privilege but a precondition for full participation in modern society. Without it, incarcerated individuals are released further behind, reinforcing structural inequalities and undermining rehabilitation efforts. Muzzicato et al’s (2024) “common good outcomes” help us to move to fair and decent rather than failing to extend cementing Zuboff’s (2015) idea of *instrumentarian* power, where technology is used only for control. Inaction therefore not only denies justice involved opportunities for growth and reintegration but also widens digital divides, leaving justice systems complicit in deepening inequality rather than pursuing the public value outcomes they are entrusted to deliver.

Public Value Functions

Mazzucato et al. (2024) define what is ‘public’ about digital public infrastructure. One key mechanism for framing this is *function*, as opposed to (technical) *attributes* that value efficiency and scalability over explicitly serving people. However, functional views of digital, celebrate outcomes that are ‘*directly associated with normative values, such as social value, economic value, capabilities, human rights and essential needs*’ (p11). This perspective is of direct value to the enterprise of penal reform because it centres outcomes of democratic merit. This framing can foster quality of life, healthy social relations and community, capabilities and also economic inclusion. In terms of value creation these functional qualities present a viable template for positioning digital in penal spaces as the right kind of trajectory for decision making, development and implementation. The process of public value maximisation is to be understood as an iterative and collaborative process. In doing so common good outcomes can drive public value such as dignity, equity, democracy, accountability and resilience.

Human Rights Focus

Digital rehabilitation must be grounded in a rights-based framework to prevent technology from becoming another instrument of punishment. Alignment with international standards such as the Nelson Mandela Rules are crucial to ensure imprisonment should not strip individuals of their fundamental rights. By embedding human rights into digital design, prison systems, for example can ensure that technology fosters opportunities for growth, inclusion, and dignity, rather than reducing rehabilitation to surveillance and control.

Public Value Focus

Muzzicato et al. (2024) remind us that “*the purpose of digital innovation is not efficiency alone, but the maximisation of public value.*” Applying this insight to penal settings means evaluating digital rehabilitation by the extent to which it generates common good outcomes. In practice, this means

asking whether digital systems contribute to reducing recidivism, strengthen trust, and prepare individuals for digital citizenship. Without a public value focus, technology risks being deployed narrowly for efficiency or coercion; with it, digital rehabilitation can instead become a shared societal investment that benefits both justice involved people and the communities to which they return.

Ethics and Accountability

Ethics and accountability are essential to counter the risks of opaque systems, behavioural prediction, and unchecked data collection that Zuboff (2015) identifies in her analysis of surveillance capitalism: resulting in (mal)adaptive behaviours. UNICRI (2024) emphasises that transparency, privacy, and proportionality are non-negotiable if digital tools are to serve legitimate rehabilitative goals. Embedding accountability requires independent audits, ethical review boards, and mechanisms for justice involved people to understand and challenge how digital systems shape their journeys. As Muzzucato et al (2024) insist legitimacy of *digital services* need to be transparent, participatory, and aligned with civic democratic values.

Table 1 summarises key public value functions as highlighted by Muzzucato et al., (2024) and their alignment to the design of digital rehabilitation. It provides a conceptual bridge between ethical principles and operational design, highlighting how justice digital infrastructures could embed common good outcomes.

Table 1: Common Good Outcome Design Principles

Common Good Outcome	Design Drivers
Dignity	Systems align with and ensure individual autonomy, respect, and worth.
Equity and Fairness	Systems directly challenge disparities and address systemic inequalities.
Democracy and Participation	Systems empower users with agency and voice.
Accountability and Transparency	Systems follow transparent methods for scrutiny and redress.
Resilience and Sustainability	Systems adapt, endure, and serve future generations.

How Public Value Maximisation Applies to Justice-led Digital Rehabilitation

Public Value Maximisation, as Muzzucato et al. (2024) argue, is about ensuring that *public sector digital infrastructures* (like prison systems) maximise benefits for society, not just efficiency for institutions. Building on the insights of Ross et al (2024), who show how the techno-social landscape of penal systems is shaped by institutional culture, values and technology design, a digital strategy for rehabilitation must go beyond plug-and-play platforms and instead engage intentionally with the human, organisational and cultural dimensions of change. Their research highlights how justice-led service delivery applications are not simply technical artefacts but are embedded within bureaucratic logics, power-relations and public perceptions. Therefore, to operationalise public value maximisation in prisons and probation we need to: co-design digital tools with justice-involved people and staff; specify ethical, inclusive and accessible user-experience criteria in contracts; ensure procurement frameworks require privacy, interoperability and transparency; and embed governance and evaluation



mechanisms that interrogate how digital rehabilitation contributes to societal outcomes (rather than just institutional efficiency). In effect, the digital strategy must treat technology as a socio-technical intervention whose success depends on aligning digital infrastructure, culture, workforce capacity and civic legitimacy. In the carceral context, especially for digital rehabilitation, it is advisable to consider the following:

Shift from Institutional Goals to Societal Goals

Traditional prison systems have often been dominated by narrow concerns with security and cost control. However, as Muzzucato et al. (2024) argue, the purpose of digital innovation in the public sector is not efficiency alone, but the maximisation of public value. In the context of prisons, this means asking how digital rehabilitation can serve wider societal goals such as safety, inclusion, dignity, equity, and democracy. The UNICRI report (2024) reinforces this by emphasising that rehabilitation must be guided by principles of proportionality and equality, ensuring that technological interventions foster healthy reintegration rather than simply extending institutional control.

User-Centred Design: Treating Justice Involved as Citizens-in-Transition

One such approach we would recommend is that trustworthy digital infrastructures must be participatory and directly aligned with foundational democratic values (Muzzucato et al., 2024). By involving justice involved individuals in the design of rehabilitation programs is not optional but central to public value creation. A central tenet of public value maximisation is that citizens should be regarded as co-creators of services. This implies that justice involved people must be treated not merely as people with convictions, but as citizens-in-transition who require tools to rebuild autonomy and agency. UNICRI (2024) stresses that that must guide digital rehabilitation, ensuring that individuals actively participate in their own rehabilitative journeys. Co-production, for instance, partnering with justice involved people in designing digital learning pathways or therapeutic interventions, reflects Muzzucato et al.'s (2024) call for participatory digital infrastructures that deliver dignity and fairness as common good outcomes.

Transparency, Accountability, and Trust

Muzzucato et al. (2024) also argue that legitimacy in digital infrastructures depends on transparency and participatory accountability. They also argue that transparency is not an add-on but a democratic obligation in digital systems, ensuring that power is exercised in accountable and contestable ways. For digital rehabilitation, this means establishing clear policies on data use, strong protections for privacy, and open and participatory mechanisms for oversight. Recent recommendations published by the Council of Europe set out important policy and practices guidance on the use of AI in prison and probation settings (CoE 2024). UNICRI (2024) echoes this by identifying privacy and normality as critical principles in the governance of prison technologies, to prevent the erosion of rights. Trust can only be built when justice involved people and the public alike can see how digital programs are evaluated, how success is measured, and how safeguards protect against exploitation or harm.

Reducing Inequality

One of the most pressing challenges in prisons is the risk of deepening digital inequalities. Public value maximisation, as Muzzucato et al. (2024) frames it, is concerned with reducing disparities and ensuring fairness in the provision of public services. They explicitly link equity to PVM stressing

that systems must “reduce disparities and address systemic inequalities.” In line with this, UNICRI (2024) highlights equality as a cornerstone principle for digital rehabilitation, warning that without deliberate effort, digital systems risk reproducing or worsening existing disadvantages. Ensuring equal access to devices, digital literacy training, and rehabilitative opportunities across all gender, age, and social groups is therefore critical to ensuring that digital rehabilitation delivers equitable outcomes.

Long-Term, Sustainable Outcomes

Public value frameworks emphasise sustainability: digital infrastructures should not only meet immediate needs but also build capacities that endure. For penal systems, this means digital rehabilitation should aim beyond short-term achievements, such as course completions, to focus on long-term outcomes that strengthen reintegration and even better, desistance. UNICRI (2024) spotlights the importance of agency and normality, which together suggest preparing justice involved people with transferable digital skills, access to telehealth and mental health supports, and pathways into digital employment and civic participation. In Muzzucato et al.’s (2024) terms, maximising public value requires ensuring that digital rehabilitation contributes to resilience and future-oriented societal benefits, not just institutional efficiency.

Implementing these recommendations requires embedding them into everyday practice across penal settings. Digital maturity assessments help staff understand where their organisation stands and where investment is needed; ethical frameworks ensure that digital tools support rehabilitation rather than control; and skills programmes equip both staff and people in their care to use technology confidently and safely. Piloting innovations and evaluating outcomes provides important evidence for what works (and what doesn’t), while building trust with justice involved individuals, staff, and communities ensures that digital rehabilitation is seen as legitimate and fair. Ultimately, this approach creates public value by reducing inequality, strengthening reintegration, and supporting safer societies. As Muzzucato et al. (2024) argue, digital infrastructures should be judged by the extent to which they produce common good outcomes such as the dignity to support their children, have fair access to education or employment, and understand accountability and responsibility. By adopting these practices, practitioners not only strengthen rehabilitation but also deliver public value by assisting to the enterprise of human flourishing and enhancing community safety.

Conclusion

Penal digital transformation offers an unprecedented opportunity to align technology with the principles of public value, but it also poses profound ethical and political challenges. If left unchecked, the logics of efficiency, surveillance, and data extraction risk reshaping rehabilitation into a system of digital containment rather than empowerment. To counter this, investment in ethically informed, evidence-based innovation is urgent. Services must adopt governance frameworks that resist *techno-drift*, challenge exploitative data practices, and foreground dignity, fairness, and civic participation. Our experience working with professionals and policymakers globally reinforces that digital reform succeeds only when it is grounded in public value creation, for people and what they need, and designed as part of a democratic digital public infrastructure. Penal services have the opportunity—and responsibility—to ensure that digital transformation enables human flourishing, reduces inequality, and strengthens communities. Ethical, participatory, and transparent digital rehabilitation is not just good practice—it is a public good.



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Dr Victoria Knight is an Associate Professor in Research within the Community and Criminal Justice Division at the Faculty of Health and Life Sciences, De Montfort University. Her research explores the evolving relationship between digital technology and penal settings, with a particular focus on how digital systems are developed, implemented, and experienced by people living and working in prisons. Victoria’s work examines key issues such as digital readiness in prisons, the role of technology in supporting rehabilitation and desistance, and the ethical challenges that



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