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**Prison tech: Imagining the prison as lagging behind *and* as a test bed for technology advancement**

**Abstract**

This article explores the ways in which prisons are imagined as sites of technology development. By attending to expos that showcase prison technologies and constitute “live theatres of technology” (Cornfeld, 2018), we carve out ambivalent sociotechnical imaginaries of technological backwardness that are combined with the idea of radical technological innovation to reform the justice system. In doing so, we highlight the prison as one site of technology development and actors at technology trade shows catering to the prison and security sector as platforms for technological mediators that range from corporate prison tech companies to educators as well as representatives of the criminal justice system. The expos emerge as sites where technological development is negotiated through performative sociotechnical imaginaries of prison tech.

**Keywords:** prisons, prison technologies, real-life labs, technology development, sociotechnical imaginaries

## **Prison tech: Imagining the prison as lagging behind *and* as a test bed for technology advancement**

Prisons are rarely connected to technological development. It is a rather a picture of absence of technologies that comes to mind when thinking of places of incarceration, especially digital media technologies seem evacuated from the prison space. However, quite the opposite is the case and there are a number of examples that illustrate the connections that prisons have with technological development and innovation. The prison of the 18<sup>th</sup> and 19<sup>th</sup> century not only gave birth to the idea of disciplinary power surveillance in the panopticon (Foucault, 1979/2012), but also specific technologies including the treadmill that is now standard in gyms around the world (Doan, 2015; Peters, 2018); ankle monitors that have been remediated as Fitbits (Bernard, 2017) and early approaches to gamify and gratify positive behavior that have been tested in the prison context (Hibbert, 1963). At the same time, correction facilities are increasingly implementing the latest digital technologies especially for administrative and surveillance purposes (Reisdorf & Jewkes, 2016).

Digital technologies are often identified as the quick fix for societal challenges, which has been critically addressed as technological solutionism (Morozov, 2014). Including ideas of the digital welfare state (Kaun, forthcoming), digital health (Lupton, 2013) and EduTech (Selwyn & Facer, 2013), the tech sector has gained unprecedented importance and influence in a growing number of societal areas. It hence becomes a crucial question of power: by whom, in what ways and for what ends technologies are developed? By engaging with technology expos that exhibit what we call “prison tech,” we carve out sociotechnical imaginaries emerging in and around prisons that present smart technologies as an apt solution to all kinds of challenges in the criminal justice system. Through the notion of sociotechnical imaginaries, this article engages with the discourses around specific technologies that are taking shape in and for prisons. These technological discourses shape the reality for

incarcerated people as well as social reality beyond the prison walls. The article defines prison tech as technologies that are imagined, used and developed in particular for the prison context but have the potential to transition into other use areas. The expos are here considered as platforms gathering technological mediators and their specific sociotechnical imaginaries about technology development that highlight the entanglement of technology and the prison complex.

The article highlights the discursive preconditions of what we call “a discourse of backwardness” that contributes to the emergence of prisons as environments for technological development that is imagined as so-called radical innovation.

Methodologically, the article develops earlier works on observations at technology fairs and trade shows as places where new technologies are negotiated (Cornfeld, 2018). In the analysis, we develop a typology of prison tech and present examples of specific technologies developed in and for the prison and highlight the ambivalence of sociotechnical imaginaries that drive technological change in the criminal justice system more broadly.

### **Technological Mediators for Prison Tech**

Prison tech that is considered here should be seen in the context of a longer history of technology for surveillance and control of marginalized populations that form a continuum of technologies ranging from predictive policing to state surveillance. In that context, Shoshana Magnet (2011) explores for example the failures of biometric technologies being firstly developed in the prison context to later be transferred into the welfare sector and regimes of border control. She shows how vulnerable groups become objects of body fetishism aiming to develop objective measures for the classification of people. Often these groups are coerced test subjects for new technologies that would provoke resistance in other use areas. In the context of developing biometric technologies in the prison she argues

prisoners' bodies are valuable commodities to biometric companies, providing the industry with a captive test population for assessing the efficacy of these new identification technologies. While the banking industry might be cautious about introducing biometric technology to their clients for fear of scaring off potential customers, prisons do not have the same restrictions. In this way biometric technologies are key to the intensification of particular forms of monitoring, as they provide a way for companies selling surveillance technologies to try out products that would be rejected by the general public. (Magnet 2011, 63)

In a similar way, Brian Jefferson (2020) highlights the ways in which the state has contributed to technological development through investing extensively in digitizing punishment and policing. Both Jefferson and Magnet show that the entanglement of technology and punishment or policing goes much further back than currently emerging forms of digital carceral technologies. They demonstrate in particular how these technologies are connected to forms of racialization. Simone Browne (2015) disentangles the connection between the historical formation of race and contemporary surveillance technologies. Ruha Benjamin (2019) turns this argument on its head in the edited volume *Captivating Technology* by gathering contributions that explore how the penal logic is dispersed into other institutions and social spheres through the export of technologies – both digital and analog – that have initially been developed for surveillance and punishment. The various contributions show how the “sticky web of carcerality extends even further, into the everyday lives of those who are purportedly free, wrapping around hospitals, schools, banks, social service agencies, humanitarian organizations, shopping malls, and the digital service economy” (Benjamin 2019, p. 2). While exploring the general dispersion of captivating technology in society, the authors focus on discriminatory design and hence argue that there is a paradox of techno-fixes that are supposedly developed and implemented to overcome

human bias, while being based on biased and discriminatory logics with different implications for poor and racialized people than majority groups.

Extending these earlier explorations of carceral and surveillance technologies, we focus on trade shows and technology expos as platforms for technological mediators of prison tech. These technological mediators, as we will show in the following, constitute actors of tech development that are often dispersed in different sectors but convene at tech expos, which consequently emerge as important sites of technological advancement while not being directly involved in the research and development process. Here we link to earlier studies of tech interlocutors that were for example explored by Joshua Greenberg (2008) focusing on neighborhood video rental stores that were constitutive of the VHS and film industry but rarely considered as such. Similarly, Christina Dunbar-Hester (2014) has explored low power radio activists as advocates for and developers of technology. Li Cornfeld (2020), exploring sex toys and the porn industry as areas of early testing and implementing of new technology, argues that “media and technology of sex on the technological vanguard, are born either out of an essential human desire for sexual expression or market logics that incentivize producers of illicit goods to engage new means of production and distribution” (p. 96). These studies show how diverse social groups contribute to technological development in diverse and often unexpected ways. Connecting to these earlier explorations of the long history of surveillance technologies controlling marginalized populations and unexpected technology mediators, we firstly map prison tech actors that gather at the expos and secondly identify dominant imaginaries of technological change and the criminal justice sector.

### **Sociotechnical Imaginaries of Prison Tech**

Expos for security, surveillance and prison technology emerge as sites for the maintenance of intersectorial relationships between different groups that are involved in the development of technology as Li Cornfeld (2020) has argued for the sex tech industry. Quoting geographers Harald Bathelt and Nina Schuldt (2008), she argues that tech expos ““provide a temporary microcosm of an industry’ by convening otherwise dispersed groups to exchange knowledge and collectively assess shared concerns through ‘presentation and interaction’” (Cornfeld 2020, p. 97).

Participants in the expos that we explore here are one, though not necessarily homogenous, group of social actors that are part of technological development in a broader sense. Not only do the expos gather relevant social actors for certain technologies but they also highlight the sense-making processes as part of technological development itself (Pinch & Bijker 1984). At the expos through their staged and performative character, certain aspects of the presented technologies are emphasized while others are hidden or made invisible. At the same time, tech buyers express their needs and specific problems that need technological solutions. Besides these processes of social co-construction of technology, the expos are also sites for future visions of technological change. Hence, what interests us here is how these technological mediators construct and imagine technological change focusing on prison tech. Here, we rely theoretically on Sheila Jasanoff’s (2015) notion of sociotechnical imaginaries that are “collectively held, institutionally stabilized and publicly performed visions of desirable futures (or of resistance against the undesirable), and they are also animated by shared understandings of forms of social life and social order attainable through and supportive of advances in science and technology” (p. 19). Sociotechnical imaginaries are, hence, more than merely individual ideas, they are durable, collective and performative, but at the same time they are never stable and therefore change over time. Sheila Jasanoff and others have emphasized the importance of sociotechnical imaginaries for the nation as a

project, but that they can also be situated in other collectives such as companies or social movements. The important aspect is that imaginaries that were potentially held by individuals at the beginning become collectively shared and stabilized in that way. Multiple imaginaries often exist side by side and their negotiation is characterized by unequal power relations and “it often falls to legislatures, courts, the media or other institutions of power to elevate some imagined futures above others” (Jasanoff, 2015, p. 4). Sociotechnical imaginaries seem to operate as top-down projects, but they also evolve in what Jasanoff (2005) has called civic epistemologies, namely the “ways in which elements of human subjectivity and agency get bound up with technoscientific advances through adjustments in identities, institutions, and discourses that accompany new representations of things” (Jasanoff, 2015, p. 14).

Sociotechnical imaginaries are future visions that sometimes materialize and are translated into concrete practices. Astrid Mager and Christian Katzenbach (2021) remind us that they are always also contested and under negotiation. This contested and conflictual nature of sociotechnical imaginaries is of interest here. The articulation of what technology means and does is always also translational work between different sectors as Michael Hockhull and Marisa Leavitt Cohen (2021) show. They argue that corporations active in the tech sector enact sociotechnical imaginaries of the digital future through producing hot air and the aura of technological cool at intersectorial conferences and trade shows with the aim of pushing digital technologies into, for example, the public sector. Similarly, we consider the discursive construction of prison tech at technology expos and conferences as performative and forms of meaning making that have consequences on how prisons are organized, but also on how technology is developed for other sectors. In the following we explore how prison tech is presented and imagined at correctional technology expos to provide a mapping of prison tech in action.



### **Approaching Prison Tech: Correctional Technology Expos and Conferences**

We draw on material gathered through participant observations at two security and prison technology trade shows as well as one conference including a smaller expo area that gathered correctional practitioners and trade representatives. We consider trade shows and expos as what Li Cornfeld (2018) calls “live theaters of technologies” where the latest technology innovations are presented and negotiated prior to their launch or relaunch. Anna Feigenbaum and Daniel Weissmann (2016), drawing on Mark Salter’s (2013) work on the aviation industry, argue that trade shows and expos constitute a performative space that often encompasses a greater willingness of company representatives to share information on industry development, their own technologies and commercial interests (see also Feigenbaum, 2011). Our experiences at the trade shows confirmed this finding. However, most of the representatives we talked to were sales personnel, not – in their own words – “technologists.” Hence, they often did not necessarily have deep knowledge of technical details but focused on the most salable traits of the technology presented. Of course, there are exceptions to this: One representative repeatedly underlined that he is *not* a salesperson but comes directly from the security tech industry. Hence, he has a specific expertise. We did not pursue follow-up interviews after attending the expos and trade shows, anticipating on the one hand difficulties that researchers have pointed out in earlier studies (Feigenbaum & Weissmann, 2016), but also doubting the added value. Instead, we extended the material of field notes from the participant observations and informal interviews with brochures and other advertising material collected at the events.

The events we observed reflect the transnational character of the correctional technologies field. Many companies we encountered operate on a global level or are currently expanding their operations internationally. Especially a meeting in Lisbon gathered internationally operating companies ranging from European based to Asian and American as

well as Australian and Israeli firms. At the same time, a number of smaller start-up companies catering not only to the corrections sector were present at all the events. The prison tech scene has to, however, navigate the specificities of national jurisdictions and even local regulations at particular institutions adjusting applications and products accordingly.

The first trade show we attended was the International Security Expo in London in November 2018. The event is free to attend and gathers security companies as well as government representatives, law enforcement, military, border control in a mix of exhibition and live demos as well as conference presentations for government-to-business and business-to-business exchanges. According to the organizers, the event gathered 200 plus expert speakers, 375 plus exhibitors and more than 1000 products on display and by their own account 12,576 international visitors registered in 2019. The second expo we attended was the 38<sup>th</sup> edition of the American Jail Association's Jail Expo in Louisville, Kentucky in 2019. Similarly to the London event, the expo and conference gathers practitioners, industry representatives and academics for a mix of a trade show and conference panels as well as hot spot discussion breakout sessions. In addition, the association offers tours of local jail and prison facilities mainly attended by prison officers visiting from other states. The third event we observed was the Technology in Corrections– Global Corrections Digital Technology Conference with a focus on digital transformations in Lisbon in 2019. The conference in its third edition was arranged by Europris and the International Corrections and Prisons Association and gathered 256 delegates from 52 countries. During the expos and conferences, we engaged in formal and informal conversations with company representatives, academics and practitioners from the corrections sector.

### **Technological Mediators of Prison Tech**

Prison tech are technologies that are taking shape in and for prisons. Prison technologies are developed in particular for the prison context but have the potential to transition into other use areas and the general consumer market. Based on the observations made at the trade shows, prison tech can be roughly categorized into three main categories a) surveillance technologies (including contraband detection and CCTV solutions) b) inmate communication (including tablets, email and telephony) and c) e-learning (including apps, platforms and online libraries). While surveillance technologies and inmate communication dominated in terms of variety and number of vendors, the number of e-learning solutions was smaller. The companies focusing on prison technologies can be distinguished further into prison tech insiders, prison tech specialists and tech generalists.

Prison tech insiders are companies with a narrow portfolio focusing on one specific tech solution that was often developed within one facility often by (former) correction officers to meet specific needs of the facility. An example of this type of prison technology company is Tech Friends Inc. Founded by a former correction officer, the company offers different technologies including telephone kiosks, debit calling and video visitation solutions. At the expo, the founder and owner of the company was showcasing inmate tablets with individualized and personalized applications. The tablet was custom-made and developed in-house in one specific facility first. When the developer retired as corrections officer, he started his own company and now employs a number of coders developing his software. Tech Friends Inc. offers a tablet with email access and video calls for inmates. Based on the data collected, the facilities are provided with automated content analysis of emails and messages exchanged through the tablet, pre-set search for words alerting officers automatically, network analysis of individual incarcerated persons including who they communicate with and receive money from outside of the facility, visualizations of network maps including information about how strong the links to other actors in the network are and what kind of

relationship they have to each other. The company is currently seeking to expand and aims to sell their product to an increasing number of facilities.

Prison tech specialists are larger companies dominating the correctional technology sector. They are aiming to maintain and/or further expand their markets. Two of the most prominent examples in the US-market are GTL communications and RFID Guardian (Kaun & Stiernstedt, 2020a). GTL communications is one of the larger vendors that has been dominating the US-American prison technology market for inmate communication. The company is increasingly integrating all three categories of prison tech – surveillance, inmate communication and e-learning – through the custom made tablet solutions they offer since 2015. The company has now more than 80,000 tablets across the USA in at least six states. GTL communication is charging incarcerated individuals 5 cents per minute for content access beyond the base provision. Extra services include access to family pictures (50 cents per attached photo and 1 dollar per video attachment), video calls (25 cents per minute), chat (25 cents per written message), radio and streaming as well as library resources. In comparison, incarcerated persons earn between 4 to 58 cents per hour depending on their assignment (Sawyer, 2017).

Tech generalists within the prison tech market are large international corporations that offer specialized solutions but have a broad portfolio beyond the corrections sector. One of the most prominent examples here is the software package Offender 360 by DXC technology that is a subsidiary of Microsoft. Offender 360 is built on Microsoft Dynamics 365 platform and is mainly used for jail administration including record and assessment management. Reports on all records, filter function, questionnaires, etc. can be administered through the platform. The platform also allows the calculation of risk scores dependent on assessment.

Many of the larger companies aim at an international market presence. Accordingly, they have to adjust to national jurisdictions while making this adjustment part of their selling

point. For example, the German Telio – prison tech all-rounder – describes itself as number one player in the European prison industry with a presence in 18 countries, while ensuring “full compliance with local laws and regulations. Cultural complexity is managed through local teams in each country” (Telio Brochure distributed at the expo in Lisbon). This is one illustration of the transnational character of prison tech that needs to adopt to specific national regulatory frameworks and distinct ways in which the criminal justice system is organized, while maintaining the core functionalities of their products.

Besides representatives from technology companies, the expos gather other actors of technological mediation in the prison sector. These other actors include representatives of the criminal justice system such as administrative officers, IT-officers and management. Furthermore, experts including academic and non-academic researchers and consultants are attending the expos.

<<<Figure 1 around here >>>

Based on Pinch and Bijker, we can model the technological mediators co-constructing prison tech as visualized in figure 2. While all actors are directly involved in the co-construction process including the production of sociotechnical imaginaries, incarcerated people become coerced or indirect participants; talked about and imagined as subjects of prison tech, they never participate in the expos or fairs.

<<<Figure 2 around here>>>

### **Sociotechnical imaginaries of prison tech**

After mapping different social groups involved in forming the prison tech industry, we now turn to the sociotechnical imaginaries that are produced at the expos and that are an important part of technological advancement. We have identified two major tropes in the material. Firstly, the imaginary of technological backwardness of prisons and secondly, discourses of so-called radical innovation namely that prisons and the criminal justice system will be radically transformed with the help of smart technology. Both tropes are connected with and depending on each other while also illustrating the ambivalent, slightly contradictory character of sociotechnical imaginaries of prison tech.

### *The Birth of Technological Backwardness*

The first trope of imagining technological change in the prison is the idea of backwardness. As Yvonne Jewkes and Bianca Reisdorf (2016) have shown, the prison is often described in terms of a technological disconnection from cutting-edge technology, creating an aura of being left behind. At the same time, the notion of being technologically left behind is a necessary precondition in order to allow for the discourse of radical innovation with and through technology to take hold. Accordingly, technological development needs the idea of backwardness to be overcome and to solve problems. In this context, prisons and the corrections sector more generally are often imagined as particularly lagging behind the technological development.

During one of the conference presentations that we observed, one practitioner within the corrections sector emphasized “in the prisons sector we are hopelessly behind. At least twenty years!” This mantra was repeated to us consistently by prison officials and sales personal representing specific applications and devices. For example, the president of the International Corrections and Prisons Association (ICPA) Peter van de Sande opened the

conference *Technologies in Correction* with the telling title “Digital Transformations” with a comparison:

Before the digital revolution we had to buy vinyl, we had to buy the whole album. Now, I carry all the music in the world around in my phone, just listening to what I want to here. This has made my life so much easier. In a similar way, corrections could be redone if digital transformations would be embraced more openly. Digital technologies can revolutionize corrections to make our lives better and easier, but there is a general reluctance to technology, because staff is suspicious and in fear to be replaced. But they will to the very contrary be actually freed from monotonous tasks and can finally focus on their real work including rehabilitation and client contact. Digital transformation will contribute new ways 'for exercising our business' and the corrections sector should be ready to be 'digitally transformed'. (Peter van de Sande, opening speech, *Technologies in Correction*, 2019, Lisbon)

There are different ways in which this digital transformation of the corrections sector is envisioned. During the same conference, an armchair discussion focused on the Chief Information Officer (CIO) perspective on digital transformations, including Simon Bonk of the Correctional Services Canada, Håkan Klarin of Kriminalvården Sweden, Teck En Loh Director General of the Singapore Prison Services and Russel Nichols of the California Department of Corrections. During the panel Håkan Klarin emphasized that cross-sectorial partnerships or what he called the triple helix of academia, market partners and the Prison and Probation Services are the way forward. He in particular stressed that opening up for private partnerships would speed up the digitalization process. The corrections sector is part of a larger digital ecosystem and should acknowledge this fact by developing new models for collaboration. He is imagining open-source sharing of digital solutions across borders taking

a Swedish application developed for clients on probation – the *utsiktsapp* (Kaun & Stiernstedt, 2020a) – as an example. An important part of the panel discussion was dedicated to the question of why innovation takes time within corrections in comparison to other sectors. In that context, the speakers identified three important aspects. Firstly, there is a specific culture in corrections that forestalls transformation. The conservatism towards technological change is but one example of this culture. Secondly and connectedly, the technological innovation envisioned by the CIO panel presupposes a complete change in the ways in which corrections are managed and this needs time. Large institutions are moving and changing slowly. Therefore, there is a strong need to constantly renegotiate the ideas and attitudes towards technological change. Thirdly, the corrections sector as a public endeavor competes for resources and the introduction of new technologies is cost intensive. Building a business case for public-private partnerships takes a very long time during which the tech industry has already moved on and potentially has lost interest in the collaboration. Nevertheless, Håkan Klarin argued that the corrections sector is the right field for tech. The argument goes: Technology can be an important tool to improve communities and provides possibilities for connection. In the USA, for example, the access to e-mail has changed the life for many incarcerated persons and their families in very positive ways, Russel Nichols suggested during the panel. The strong emphasis on technological backwardness of the corrections sector calls for innovative ways of partnering up with the industry as the arguments exchanged during the panel discussion show. It is the intricate link of the need to catch-up, while being in a vulnerable underdog position, that makes unorthodox collaborations between the private and public sector necessary and possible.

Despite or rather because of the established discourse of technological backwardness, the corrections sector provides a fertile ground to test technological solutions and further develop applications to be used in other commercial contexts already now. A sales and



marketing representative from an Australian company focusing on secure cloud solutions that we met during one of the conferences stressed that many companies that are active within the corrections sector dedicate only a small part of their operations to prison services. Often, companies explore collaborations with the corrections sector while having a broader portfolio and catering to other sectors. His company, for example, integrates AI detecting unusual behavior in existing CCTV systems. Their services are currently piloted in a number of Australian prisons but could also be used for surveillance of other critical infrastructure. He also emphasized that the corrections sector is otherwise a very important line because of privacy concerns that would hinder introduction of certain technologies in other areas. He uses the example of integrating AI-enabled CCTV analysis with monitoring of facial expressions and heartrate monitoring to detect stress and unusually behavior prior to violent behavior. He personally does not like the idea that his heart rate is monitored whenever he enters a shopping mall, for example. Yet he argues in prisons this technology might save lives. At the same time, he makes clear that the knowledge developed based on introducing certain applications in the corrections sector can lead to specific adaptations in other areas as well.

The same sales and marketing representative furthermore underlined that technological innovation in the prison context always builds on existing infrastructures. There are rarely moments of innovative disruption or changes in the whole infrastructure. Usually, older systems are upgraded with new technologies that are built on exiting systems and technologies. Disruptions on a larger scale are anticipated for new prison buildings where architecture is integrated with the latest technologies.

The discourse of technological backwardness serves here as a context and necessary pre-condition for the innovative work and sociotechnical imaginaries that we are interested in. Digital technologies and digital development are in that context of backwardness

imagined as a way to not only improve small parts of the administration and prison experience, but to radically reform how the corrections sector is organized.

### **Imaging Radical Innovation in the Prison**

As we have shown above there are specific sociotechnical imaginaries that are activated in the prison context. They serve not only the translational work of introducing technologies in contexts that are often considered as technology hostile, but also have very concrete performative consequences. In the following, we argue that sociotechnical imaginaries of prison tech prepare for considering prisons as test bed environments for radical innovation.

This is expressed in the plethora of best practice cases that are presented at the expos. Phillip Lowery, the National Director of State Government at Johnson Controls – one of the largest actors in the prison tech industry – opens the catalog of the 2019 edition of the American Jail Association expo with the statement that the future goal is to “[build] better jails through smart technology and training.” In the best practice example, he emphasizes smart technology to solve emerging challenges

“crumbling infrastructure, deferred maintenance, and rising utility bills are taking their toll on correctional budgets at the local, State, and Federal levels. And due to an every-increasing population, spending on jails and prisons continues to demand a larger share of tax dollars. With increasing needs and shrinking budgets, correctional leaders must look for smarter ways to improve facilities and ensure safety for offenders, officers, and the greater community” (catalog of the 38<sup>th</sup> edition of the American Jail Association expo 2019).

The prime solution to all these emerging challenges follows swiftly: “one solution [...] is the creation of ‘smart’ jails and prisons. A smart correction facility creates a

performance infrastructure that embraces emerging technologies to enable safer environments for correction officers and inmates.”

The technological solution to the crisis of the American criminal justice system is mirrored in other sales pitches by prison tech companies as well. UniLink, sporting the slogan “Excellence,” argues that “technology in prisons has the possibility to transform the prison service and prisoner outcomes as well as to drive efficiencies across the whole service and to the society on a much broader level” in one of their brochures that was distributed at the American Jail Association expo in Kentucky. At the same expo, one of the largest and most impressive booths promoting Offender 360 by DXC technology, a subsidiary of Microsoft, aims to “reform through performance” by offering software solutions for jail and prison administration, including record and assessment management. The software offers solutions to implement data driven decision-making in the prison facilities using real-time visualizations and analysis. With the help of systematizing data collection and analytics, the software promises to automate the detection of anomalies and trends in prison population behavior that allows staff to spend more time taking action on issues and problems within the detention facilities. To illustrate the potential of data analytics in prisons, a salesperson pitched the visitors a story of a facility that implemented data analytics thoroughly by including a systematic analysis of reports on incidents by locality. Very quickly the software was able to detect a pattern. A majority of incidents were happening in locations with televisions. Consequently, the administration removed all TV sets and the incidents went down almost immediately. The software was, at the time of the expo, only used by around 20 facilities in the USA. The fancy outlook of the booth, including some of the expos most popular merchandising and give-away bags, gave the impression that the company aims to grow quickly. The strategy made an impression on many of the delegates, who flocked to the

booth. One of the delegates from a small US-facility who joined one of the test shows broke out happily “Wow, so now I can finally fire my coder?”.

The imaginary of transforming prisons with help of smart technology is translated into initiatives to implement tech test beds for radical innovation. During the expo and conference Digital Transformations in Lisbon, the CIO of the Swedish Prison and Probation Services referred to the KRIM:Tech initiative illustrating the test bed and radical innovation imaginaries connected with prison tech. The program describes its aims in the following manner:

KRIM:Tech is long term. We test and we change. We work in teams and help each other, smart technology and the latest research. We get started and restart, develop and evaluate. KRIM:Tech is a big change for public authorities in Sweden. And the only way to contribute, the only way to be part of this change is that it becomes part of us.

The technology hub KRIM:Tech of the Swedish Prison and Probation Services was set up to radically innovate the organization primarily with the help of smart digital technology. Between 2018 and 2019 the hub received funding from Vinnova – the Swedish Innovation Agency to pilot test bed activities for digital and radical innovation (Vinnova, 2019), which illustrates that sociotechnical imaginaries are performative in very concrete ways.

## **Conclusion**

The tropes of sociotechnical imaginaries of prison tech discussed here illustrate the ways in which prisons emerge as milieus for punishment but also technological development. Rather than specific labor practices of guards and incarcerated persons or their experiences with prison tech and the ways in which incarcerated people develop forms of resistance, we

carve out imaginaries developed by technology mediators of prison tech that gather at expos and fairs to highlight how technological advancement is taking shape entangling material and discursive aspects.

Sociotechnical imaginaries of prison tech that are developed by the technological mediators at the expos are, as we have shown, also performative. Namely, the imaginaries discussed and negotiated at the expos are translated into concrete projects including test beds for radical innovation. Prisons provide, accordingly, one context for technological advancement next to a plethora of other high-stake environments such as the welfare, the health and the education sectors. These are high-stake environments since they concern especially vulnerable populations that are strongly affected by technological and organizational changes. At the same time, these high-stake environments are the foremost places for implementing new technological solutions, as, for example, Virginia Eubanks has argued for social benefit provision and child welfare (Eubanks, 2016). In this context, the article aims to demonstrate how technologies that are tested in prisons are irrevocably entangled with vulnerabilities produced in and by incarceration. Highlighting the entanglement of the ‘pain of imprisonment’ with technological development nuances positions that often one-sidedly underline the empowering features of technology. Instead, making the experiences of incarcerated people visible questions the assumption that all technological development is inherently moving us towards better societies. We hope to contribute to critical scholarship that imagines alternative futures for technological change that moves beyond the reliance on coercion and forced compliance instead.

Test bedding prisons includes the production of a sociotechnical imaginary of backwardness that is a precondition for radical innovation of not only parts of specific facilities, but the institutions for punishment as a whole. In that context, it is the broader ecology of *test bedding* prisons that needs further exploration. For example, more knowledge

is needed on the ways in which adjunct media infrastructure work within prisons (Kaun & Stiernstedt, 2020b) is entangled with a growing tech industry that is serving the corrections sector. In particular, more research is needed that explicitly focuses on the experiences of incarcerated persons that are in a coercive manner part of the technology advancement. Such studies should highlight forms of mundane resistance as well as forced compliance of tech development in prisons that might have something to say about technology development more generally and hence highlight hidden contributions and experiences that are linked to technologies that have gained importance for many contexts.

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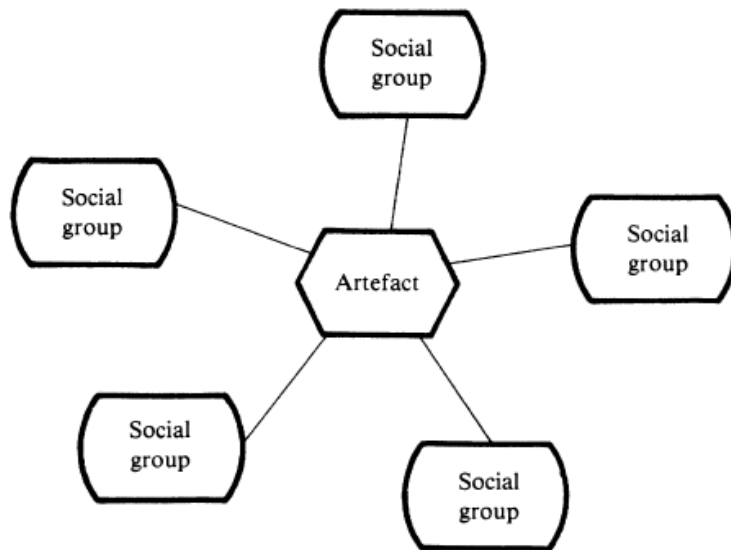


Figure 1: Pinch & Bijker (1984), relevant social groups involved in the process of social construction of artefacts.

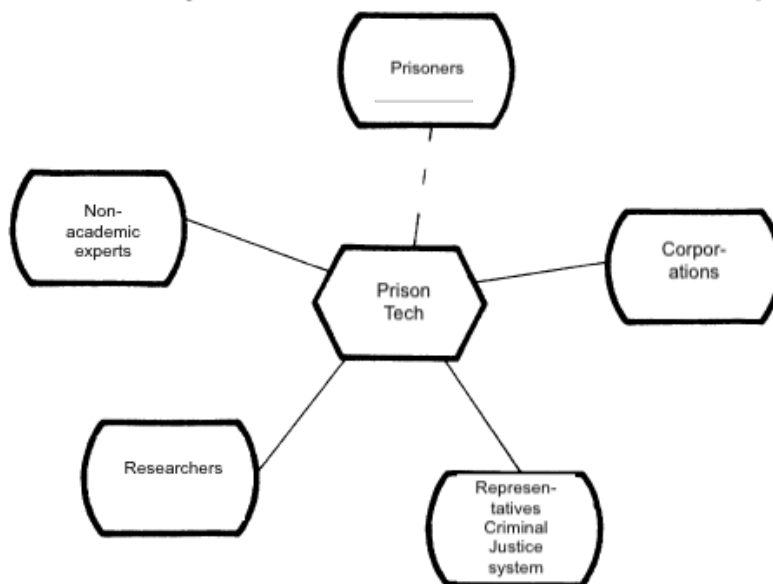


Figure 2: Adaptation of Pinch and Bijker’s model representing social groups involved in the production of Prison Tech represented at the observed expos.