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Wear your digital mask, fight this virus like it's the enemy: pandemic user-citizenship as platform-infrastructure entanglements

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ABSTRACT

This paper articulates the emergence of the user-citizen as a result of techno-solutionist approaches to pandemic management by tracing the rapid infrastructuralisation of surveillance in and through the platformisation of pandemic governance in Vietnam. Coinciding with Vietnam's rollout of chip-based national identification cards for citizens over the age of 14, the development of a one-stop 'super-app' solution that streamlines data flows across different domains of authority happened in a context where platforms were increasingly discussed alongside, and understood on the same terms as, infrastructure. By conducting situational analysis of publicly available policy documents and official government communication, the paper traces how pandemic platforms contract and expand in response to evolving pandemic management needs, and gives an account of the evolution of institutional dependency across different domains of authority and technology development. Using Vietnam as a case study, this paper contributes to ongoing theorisation at the intersection of platformisation and infrastructuralisation in pandemic social service provision. The paper is an invitation to examine the increasing entanglements of technology and citizenship performances around the world as they unfold throughout the course of the pandemic and beyond.

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Introduction

Much has been written about Vietnam's success story with managing the COVID-19 pandemic, attributing this success to an effective combination of testing, aggressive contact tracing, a mass multi-faceted public health campaign, the country's commitment to containment, and longstanding government engagement with public health as well as experience with past pandemics (Willoughby, 2021). Largely missing from this narrative about Vietnam's pandemic response is its rapid deployment of digital surveillance technologies, the role that these technologies might have played in the country's overall pandemic governance, and post-pandemic consequences of emergency technological infrastructures. This paper traces the rapid infrastructuralisation of surveillance in and

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through the platformisation of pandemic governance in Vietnam by conducting situational analysis of publicly available policy documents and public-facing government communication. In so doing, I contribute to ongoing theorisation about platform and infrastructure in the context of social service provision, where category collapse between the platform user and the citizen is met with the increasingly blurred boundaries between platform and infrastructure. This collapse means that automated surveillance becomes increasingly embedded in various domains of everyday practice while continually translating and asserting shifting expectations about health citizenship as user-citizenship. While this paper discusses Vietnam as a case study, the framework of user-citizenship that it articulates could be useful for theorising the intersection of platformisation and infrastructuralisation in the context of pandemic social service provision elsewhere, given the rapid adoption of digital technologies in pandemic management around the world. The paper is an invitation to examine the increasing entanglements of technology and citizenship performances as they unfold throughout the course of the pandemic and beyond.

From platform to infrastructure and back: the platformisation of infrastructures and the infrastructuralisation of platforms

In one of the most central discussions on platforms, Gillespie (2010) remarks on the computational, political, figurative, and infrastructural meanings of the platform concept. A platform is something to build upon and innovate from, a place from which to speak and be heard – both as an abstract and as a practical promise, and as facilitation of expression. Bogost and Montfort (2009) suggest a narrower focus on platforms by foregrounding their computational aspect, calling on the need to analyse the connection between technical specifics and culture, noting that ‘not only the user’s experience, but also interface, form and function, code, and platform, are fully embedded in culture’. Building on these discussions in the context of social media, Helmond (2015) coined the concept of platformisation to characterise the rise of platform as the dominant infrastructural and economic model of the social web, with a focus on critiquing social media platform expansion into other spaces online. In this conceptualisation, platforms take on infrastructural qualities through the programmability made possible by application programming interfaces (APIs) and decentralised data extraction. In a bid to cross-articulate platform studies with infrastructure studies, Plantin et al. (2018) elaborate on the twin process of the platformisation of infrastructure as a result of private enterprises offering lower cost, more dynamic, and more competitive alternatives to governmental or quasi-governmental monopoly infrastructures, and the infrastructuralisation of platforms, wherein technology corporations increasingly secure their positions as ‘modern-day equivalents of the railroad, telephone, and electric utility monopolies of the late 19th and the 20th centuries’ (p. 307).

Contending that platformisation is a process akin to industrialisation or electrification in that it is a multifaceted transformation of globalised societies, Poell et al. (2019) suggest that in addition to understanding platformisation in terms of institutions, data infrastructures, markets, and forms of governance, further analysis of the reorganisation of cultural practices and imaginations around platforms is much needed. This is particularly important given how political-cultural rules and norms widely diverge across the

globe, and how institutional changes are entangled with shifting cultural practices. Informed by these ongoing discussions in the literature, this paper employs a working definition of platformisation as the proliferation of platform across economic, political, and cultural domains as the dominant form with which the extraction of social data is facilitated. This proliferation, when considered in contexts where digital infrastructures are underdeveloped, should be discussed alongside the infrastructuralisation of platforms – a process wherein platforms assume infrastructural characteristics by means of substitution, cooption, and consolidation.

In Vietnam, where the internet penetration rate is at 70.29% in 2020 (World Bank, 2021), the development of national digital infrastructures is deeply entwined with the promise of economic growth and increasing efficiency in government (Samuel, 2021). In 2020, the Vietnamese government released the National Digital Transformation Program by 2025 (NDTP2025), setting out national goals for the digitisation of core public service infrastructures as well as the finance and banking sector (Government Portal, 2020). Remarkably, the government decision mentioned the word ‘platform’ (*nền tảng*) 34 times, emphasising the importance of building Vietnamese digital platforms as a top priority towards accelerating digital transformation (Government Portal, 2020). In the same document, ‘infrastructure’ (*hạ tầng*) was mentioned 30 times, largely in relation to the need to transition ‘from a computational infrastructure to a digital infrastructure that utilises cloud computing’, in order to ‘meet the country’s explosive demand for connectivity and data processing’.

Presumably, this demand is created by the country’s vision to

develop the infrastructure for the Internet of Things (IoT) ... [through] a roadmap for the implementation of sensor integration and digital technology into essential infrastructures such as transportation, energy, electricity, water, and urban infrastructure, [so that IoT could become] a constitutive part of the digital infrastructure.

This is a step change from the language used in the Digital Vietnamese Knowledge System Project launched in 2017, where ‘platform’ and ‘infrastructure’ were altogether mentioned ten times, each time referring to capacity building in the management, storage, indexing, and sharing of information and knowledge (Government Portal, 2017). Within the three years leading up to the COVID-19 pandemic, the language used in digital policies in Vietnam evolved from framing platforms as bounded technical objects, whose interrelations with their surrounding systems are contingent, to platforms as already embedded in wider ecologies of super-infrastructures. As we will see in the following sections, the COVID-19 pandemic created unique socio-political conditions for the acceleration of the digital transformation project in Vietnam, specifically in the form of building digital platforms as public service infrastructure.

Public health surveillance infrastructure and pandemic user-citizenship

Public health surveillance, which has since the turn of the century been understood as an essential function of a public health system especially in developing contexts (World Bank, 2001), relies on the ongoing development of standardised and streamlined data infrastructures (Nsubuga et al., 2006). Public health surveillance is designed and implemented on the principle that valid information should be provided in a timely

manner at the lowest possible cost – sometimes at the sacrifice of precision to improve timeliness and save resources that can be used for interventions (Lee et al., 2010). The utility of surveillance data therefore can be classified as immediate, annual, and archival, on the basis of the public health actions that can be taken (Nsubuga et al., 2006).

In the context of a disease outbreak, complex emergency surveillance requires ongoing development and revision of data sources, data collection instruments, analysis, and strategy; a dissemination plan for the report or results; and an assessment of the usefulness of the surveillance system. Surveillance needs are different in the preimpact, impact, and postimpact phases (Nsubuga et al., 2006). Digital contact tracing as a data collection instrument during the COVID-19 pandemic, for instance, is not equally embraced across different sovereign contexts. Within Europe, Sweden has so far avoided the adoption of a digital contact tracing app, while Slovenia has developed a legislative framework for the creation of an app that is mandatory to both citizens who test positive and those who want to travel, even inside the country (Algorithm Watch, 2020). Within the Asia-Pacific, China made full use of their existing digital surveillance infrastructure and deployed Alipay Health Code, a colour-based automated rating system that decides the health status and mobility rights of citizens (Liang, 2020). Australia's COVIDSafe app, on the other hand, has largely been replaced by a manual check-in system using QR scanning technology, in a context where the benefits of using COVIDSafe may not outweigh data privacy and security concerns of digital contact tracing (Garrett et al., 2021).

Pandemic citizenship varies across the world; the framing of state-citizenry contract oscillates between the public good of pandemic governance as state responsibility and the individual goal of infection-avoidance, which could obfuscate the complementarity of the two (Arshad-Ayaz & Naseem, 2021). The pandemic citizen has a duty to help 'flatten the curve' – a popular visualisation used to explain the benefits of public health measures that has become an iconic image at least in the English-speaking world – although failure to perform this duty could be a result of an individual's material conditions as much as it is out of a sense of entitlement. Where pandemic governance falls short, the public good of health management is transposed onto the pandemic citizen to slow down the spread of disease. In a range of contexts, such as Argentina, Chile, and Russia, apps are built to facilitate crowd-sourced state surveillance, allowing citizens to report on the suspicious behaviours of others (Dieter et al., 2021). In Bangladesh and India, governmental apps call on citizens to report 'possibly affected people' to 'free the country' as part of their 'citizen responsibility'; good citizenship in the form of daily health monitoring or symptom tracking to collect points is compensated with rewards or discounts in contexts such as Lithuania and Bangladesh (Dieter et al., 2021). The blurring distinctions between the figures of the app/platform user and the citizen in these circumstances could legitimise the production and distribution of apps to respond to the pandemic – a process that created this category collapse in the first place.

In what follows, I will articulate the emergence of the user-citizen throughout the course of the pandemic and beyond. There is a strong current in existing literature that attends to the empirical realities of pandemic living around the world to make sense of the dynamic state-citizenry contract. de Kloet et al. (2020), for example, articulate the notion of biopolitical nationalism to account for the sense of self-congratulatory reassurance and celebration that citizens in Hong Kong, Taiwan, and mainland China

experience as they comply with what the authorities have to say, whether in the form of advice or command – and argue that the virus is not only infecting, but also *affecting*. Asking us to rethink the politics of citizenship and inequality in the digital age beyond inclusion, Liu (2021) showed how the sociotechnical assemblage of Health Code in China is frequently challenged and destabilised by errors, breakdowns, and exclusions – all while citizens routinely game and bypass the algorithm’s surveillance. Kim et al. (2021) critiqued the ideological, relational, and material practices of the apps strategically deploying the category of ‘care’ to normalise pandemic technogovernance in South Korea and China, highlighting ongoing enactments of paternalistic care by the state towards its citizens by blurring the boundaries between care and control.

While there exist studies that examine how platformisation in pandemic social service provision during national emergencies grant extraordinary authority to ICT companies while routinising and instrumentalising public infrastructures with the capitalist logic of the telecom industry (Kim, 2022), little has been said about how these ongoing processes affect performances of citizenship. In articulating the concept of user-citizenship as emerging through and with platform-infrastructure entanglements, this paper contributes to the growing literature on technogovernance and the pandemic, particularly at the intersection of platformisation and infrastructuralisation in pandemic social service provision. User-citizenship as articulated in this article is distinct from existing concepts such as digital citizenship (Hintz et al., 2017) and biometric citizenship (Ajana, 2012). Digital citizenship as a normative agenda refers to the possibility of comprehensive self-determination by citizens in a datafied environment – made possible by secure infrastructure, enabling regulatory environment, adequate public knowledge, and informed use of the relevant platforms and applications (Hintz et al., 2017). Meanwhile, biometric citizenship as enabled by biometric identification techniques entails neoliberal and biological dimensions, where the neoliberal ethos of choice, freedom, active entrepreneurialism, and transnational mobility is coupled with rationalities and practices that deploy the body not only as a means of identification – but also as a way of sorting through different forms of life with regards to the market economy (Ajana, 2012). User-citizenship as emerging through and with platform-infrastructure entanglements is a descriptive concept; it serves as a tool with which to track changing state-citizenry relations as the state enacts and negotiates its control through technological mandates. In the section that follows, I will discuss the methods used in this paper to examine these entanglements in the context of Vietnam.

Methods

To trace the platformisation of pandemic governance in Vietnam, it is important to attend to the diverse actors that might be involved in the development, deployment, and maintenance of these platforms, as well as their potentially competing interests and bounded constraints in relation to each other. Additionally, the timing of these platforms as well as the claims they make on pandemic citizenship in response to different phases and challenges in pandemic management are also crucial to the mapping of the pandemic surveillance landscape. With these issues in mind, I devised a nested two-step data collection procedure to scope out relevant actors, the policy and government discourses that mobilised them, and their own positioning in developing pandemic

technologies. Firstly, I queried the Vietnamese government portal using SerpAPI, a real-time API to access Google search results. SerpAPI collects structured data from search engine result pages, returning bulk lists of result URLs, headlines, snippets, and timestamps. I then manually mapped out the different government ministries involved in pandemic management and their technology partners using the results from these bulk lists. This step informs the next set of queries. Secondly, also using SerpAPI, I queried the ministry and technology company websites I have mapped out in step one to gather further data on their positioning of pandemic governance. The returned URL lists from these queries are then scraped using a purpose-built webscraper. Table 1 summarises the corpus that these queries returned. The average length for news articles is 919 words and policy documents 5821 words. The query cut-off date is 1 December 2021.

Using situational analysis (SA), a method which foregrounds the situation of inquiry as the fundamental unit of analysis developed by Clarke et al. (2016), I analysed the corpus through a series of discourse mapping. SA strategies include three broad mapping activities through open coding, namely situational, social worlds/arenas, and positional mapping. The situational maps lay out all the major human, nonhuman, discursive, historical, symbolic, cultural, political, and other elements in the research situation of concern. The social worlds/arenas maps lay out the collective actors and the arenas of commitment within which these actors are engaged in ongoing discourses and negotiations. The positional maps lay out the major positions taken and not taken in the data through variation and difference, focus, and controversy found in the situation of concern (Clarke et al., 2016). These maps facilitate the articulation of the discourses mobilised from the corpus to represent the full range of discursive positions on key issues in the situation of concern, while allowing them to be disarticulated from their sites of production as they are decentred, making analytic complexities more visible (Clarke et al., 2016).

Table 1. Summary of corpus.

Actor	Strings entered and translation of keywords	Number of results (duplicates removed)	
		News articles	Policy documents
Vietnamese government	site:http://chinhphu.vn/ "covid*" OR "nền tảng" OR "hạ tầng" OR "ứng dụng" OR "app" translation: (covid-19, platform, infrastructure, app)	382	1799
Ministry of Health	site:https://moh.gov.vn/ "covid*" OR "nền tảng" OR "hạ tầng" OR "ứng dụng" OR "app"	345	213
Ministry of Information & Communication	site:https://mic.gov.vn/ "covid*" OR "nền tảng" OR "hạ tầng" OR "ứng dụng" OR "app"	250	4
Ministry of Public Security	site:http://bocongan.gov.vn/ "covid*" AND ("nền tảng" OR "hạ tầng" OR "ứng dụng" OR "app")	155	3
Bach Khoa Antivirus (Bkav)	site:https://www.bkav.com.vn/ "covid*" AND ("nền tảng" OR "hạ tầng" OR "ứng dụng" OR "app")	321	0
Vietnam Posts and Telecommunications Group (VNPT)	site:https://vnpt.com.vn/ "covid*" AND ("nền tảng" OR "hạ tầng" OR "ứng dụng" OR "app")	205	0
Viettel	site:https://vietteltelecom.vn/ "covid*" AND ("nền tảng" OR "hạ tầng" OR "ứng dụng" OR "app")	140	0
Total		1798	2019

In the sections that follow, I present a relational timeline of the pandemic technologies developed and deployed in Vietnam during the COVID-19 pandemic – a result of situational and relational mapping. Situational mapping through open coding of the dataset helped identify the overall number of apps developed during the pandemic situation, as well as the relevant actors involved in the development of these apps – this informed the second data collection step and helped build part of the overall timeline. Relational mapping through open coding of the dataset helped identify the relationships between actors in the overall timeline; in the case of this paper, I paid particular attention to collaborations and partnerships among governmental and non-governmental entities. To further understand the interests of these actors in relation to each other, I coded for their domains of expertise and power – which helped build a social worlds/arenas map of the pandemic technology development situation in Vietnam. Building on this map, I scoped out the ongoing tensions and negotiations among these actors in the platformisation of pandemic governance by identifying three important discursive and technological milestones in response to different phases of pandemic management, where technological deployment had to be recalibrated across the board. These discursive pivots operationalise responses to different challenges in pandemic governance as they assert shifting expectations about health citizenship through platform enclosure of user-citizenship performance.

Mapping the situation: a timeline of pandemic technologies in Vietnam

Within 23 months since the first case of COVID-19 was recorded in Vietnam in January 2020, there have been at least 21 pandemic apps developed and deployed across national, provincial, and local levels. Figure 1 provides a timeline of these apps and the domains of authority associated with their deployment. Figure 2 plots the collaboration of these

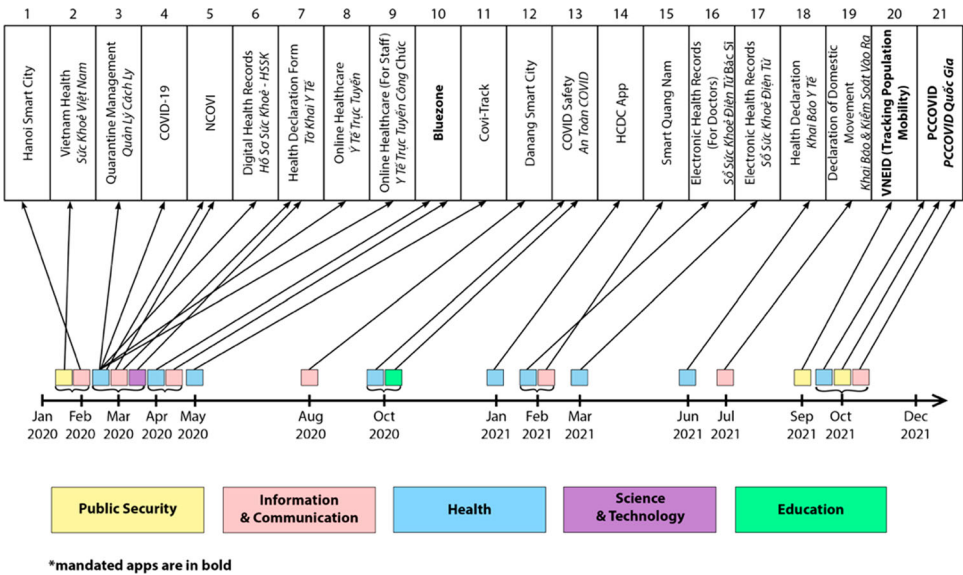


Figure 1. Timeline of COVID apps deployed in Vietnam, 2020–2021.

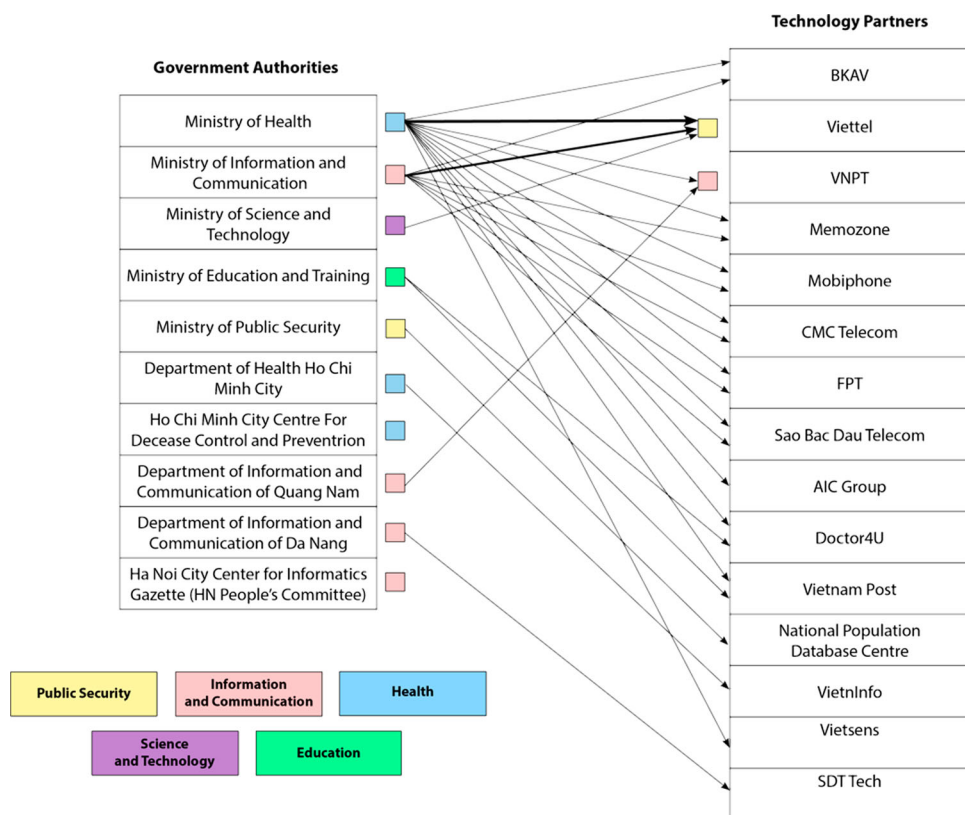


Figure 2. Map of collaboration across different authority domains and technology partners.

domains of authority and their technology partners, many of whom are state-owned and act as extensions of the state purview. The thickness of arrow denotes frequency of collaboration.

This proliferation appears to be in line with the NDTP2025 and its emphasis on building Vietnamese digital platforms as a stepping stone towards accelerating digital transformation. Understood as constituent parts of an open-ended digital infrastructure to be built alongside physical infrastructures, the apps that proliferated during the COVID-19 pandemic significantly overlapped with each other in terms of functionality and positioning. There are four main ways in which these apps are positioned: (i) as platforms to aid with contact tracing, (ii) as emergent infrastructure for digital health, (iii) as part of ‘smart city’ infrastructures, and (iv) as integrated population/public health control infrastructure. PCCOVID, a one-stop ‘super-app’ launched in September 2021, was tasked with streamlining data sharing across the Ministry of Health (MIH), Ministry of Public Security (MPS), and Ministry of Information and Communication (MIC). This will be discussed in detail in Milestone 3 below.

As demonstrated in Figure 2, the major technology players in the development of COVID-19 apps in Vietnam are Bkav, Viettel, and VNPT – who are involved in the development of nationally mandated apps such as Bluezone, VNEID, and PCCOVID. Bkav (Bach Khoa AntiVirus) is a security software and electronics company based in

Hanoi with over 70% of the Vietnamese antivirus software market (ICT Vietnam, 2021); Viettel (Army Telecommunication Industry Corporation in literal Vietnamese) is the largest multinational telecom in Vietnam, owned entirely by the Vietnamese government and operated by the Ministry of Defense. VNPT (Viet Nam Posts and Telecommunications Group), another state-owned telecom, has close ties with the MIC: the CEO of VNPT was appointed Deputy Minister of Information & Communication in 2021. As the paper unpacks the growing interdependencies between these governmental and non-governmental entities, it will articulate how the user-citizen emerges through and with the rapid platformisation of pandemic governance, as well as how the scope of pandemic user-citizenship changes across the three identified milestones below.

Milestone 1: user-citizens as individuated health subjects

The first milestone covers the period from February 2020 to August 2021, where there was an uncoordinated proliferation of pandemic management apps in Vietnam. During this period, there were as many as 19 apps developed through collaborations between governmental entities across different authority domains and their technology partners (see [Figures 1 and 2](#)). Among these apps, Bluezone – developed in April 2020 by the MIC and the MIH in partnership with Bkav, Vietnam’s largest anti-virus software company – was the most widely used with over 40 million downloads by July 2021, exceeding its own target of 30 million downloads. There were three main prongs with which Bluezone positioned itself as the nation’s most trusted contact tracing app: (i) that it would only use Bluetooth technology as a privacy-preserving standard, (ii) that it honours transparency by publishing its source code openly under the GPL 3.0 license, and (iii) that it is branded as the national ‘digital mask’. This section focuses on dissecting how each of these tenets conditioned performances of user-citizenship as individuated health subjects – as autonomous bodies whose embodiments are discrete and isolated from each other, and whose boundaries should be rendered as impermeable as possible with the help of technology.

The general case for the deployment of digital contact tracing is that, unlike manual contact tracing, digital contact tracing is scalable and could shorten delays in tracing and isolating contacts in controlling spreads. This proposition is variously executed across different contexts; countries such as South Korea and China used mobile phone and GPS data to find contacts who were proximate to the index-case (Park et al., 2020), while countries such as Australia and Singapore have implemented Bluetooth-based apps that have limited functionality, positioning digital contact tracing as a form of enhanced manual contact tracing (Vaithianathan et al., 2020). In the case of Bluezone, which uses Bluetooth technology, users’ contact history and social graph are uploaded to a central server without an expiry date (BBC, 2020). This directly contradicts the first of Bluezone’s four principles of operation, where the app claims to (i) uphold data privacy by only storing data on users’ phones without uploading them to a central server, (ii) not collect user location, (iii) ensure anonymity within the Bluezone community, and (iv) commit to transparency, by making it open source under the GPL 3.0 license (Bkav, 2021). [Figure 3](#), adapted from the official protocol illustration provided by Bkav, provides an explanation of how Bluezone works.

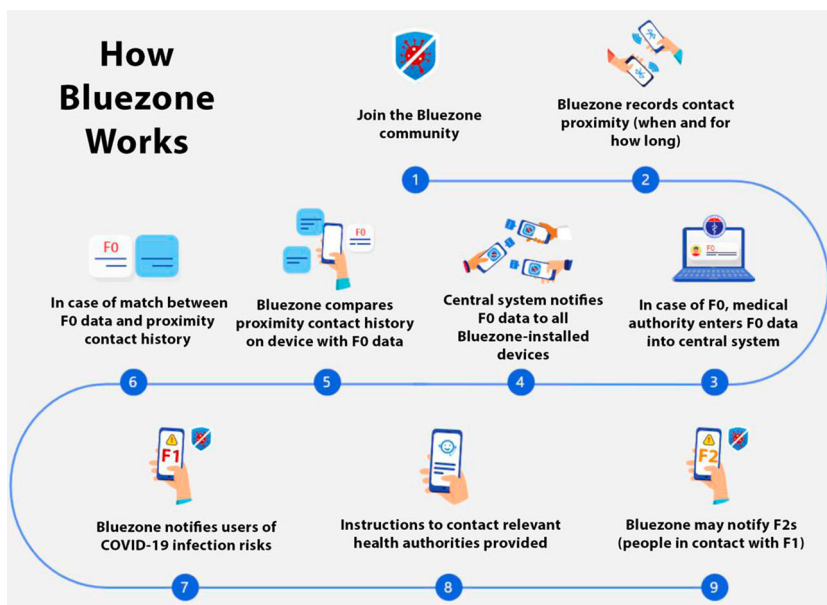


Figure 3. Bluezone protocol (adapted from Bkav, 2021).

As such, the trade-off between individual liberty and public health – the key debate in democratic societies concerning the deployment of pandemic technologies – was never properly articulated by the developers of Bluezone. Also not articulated is the issue of when Bluezone as an emergency technology should cease to operate once the need for digital contact tracing no longer is a priority. On the contrary, Bluezone consistently positioned itself as an ever-expanding platform by unilaterally adding and removing auxiliary functions such as reporting of suspicious immigration activities, COVID-19 update, lunar calendar, almanac, astrology, medical declaration, period and fertility tracking, QR-code check-in, and vaccination and testing information. Among this list of add-ons, period and fertility tracking are the most intrusive functions. The data collected through these functions are among the most sensitive data one can collect, and are generally treated with extra care through a separate data protection regime in countries that have data protection laws. These functions, however, were unceremoniously removed from the app in a subsequent update; it is unclear what led to this decision, although it demonstrates that Bluezone was making *ad hoc* decisions to offer extra functionalities well beyond its original intended scope.

Absence of public input into, and oversight over, what constitute transparency and privacy-preserving protocol means that these tenets can shift according to Bluezone's business imperatives. The user-citizen, in complying with governmental mandate to install and frequently check their contact with indexed cases, is also constantly nudged into sharing more and more data with Bluezone through gratuitously added functions. While culturally contextualised functions such as lunar calendar, almanac, and astrology nudge user-citizens to spend more time on the app, QR-code check-in, fertility tracking, and reporting of illegal immigration activities are functions that prompt user-citizens to actively contribute personal data beyond those required for contact tracing. Through

encouraging user-citizens to share their fertility tracking data on the app, Bluezone looked to extend its data extraction beyond the context of a health emergency to everyday aspects of healthcare, thereby personalising and encapsulating the health experience of its user-citizens within its platform. Through encouraging citizens to report on suspicious immigration activities – with the logic that the virus invades sovereign contexts through suspicious bodies of others – user-citizenship is also imbued with a nationalistic morality resonant with de Kloet et al. (2020)’s biopolitical nationalism. This nationalism is distilled into quantifiable, actionable tasks made available through platform functions; user-citizens as health subjects are individuated not only through data logs that identify them, but also through platform affordances that mediate surveillant behaviour of self and others. With the mandate of technology, user-citizens as tightly contained and controlled individuals are encouraged to not simply live alongside the bodies of others, but to also actively monitor and distinguish between the bodies that are foreign and alien against those that are local and familiar.

Bluezone was also branded by Bkav and widely reported by state media as the national ‘digital mask’; while this analogy might be convoluted (digital contact tracing does not help prevent infection the same way physical mask wearing does), the branding is an extension of Bkav’s core business in making anti-virus software. The conception of the computer virus is derived from and analogous to that of a biological virus injecting its contents into a body host that produces its replicants; in the same mechanism, a computer virus is a segment of machine code that copies its code into larger host programmes that, once activated, spread the virus further. A ‘digital mask’ on every smartphone to accompany physical masking on every face encapsulates the responsibilities of user-citizens as individuated health subjects; this imagery, however, obscures the collective nature of digital contact tracing as Bluezone experiments with ways to entrench its operation in everyday health citizenship.

To practice health citizenship during a pandemic is not only to temporarily give up data about contact proximity, but to also be vigilant of the undesirable/unauthorised nature of this proximity by reporting suspicious activities. It is in this sense that the state surveillance remit is partly transposed onto the user-citizen; the user-citizen, through this process, would also enhance platform capabilities by actively generating data that the platform would otherwise fail to automatically collect. Of service to both the government and the technology, the user-citizen puts on their ‘digital mask’ and is in turn assured that they are protecting themselves (by getting a notification if they come to close proximity with an indexed case) and their community (by virtue of joining the Bluezone community of users). The government – technology – user-citizen triad would fall apart without the Vietnamese health user-citizens acting in accordance with technological mandates as self-activating, individuated subjects. In the event that they fail to maintain these attributes so that they could act as an effective enabler of government and technology, they are at least as equally accountable as the technology and the government that co-deputised them.

Milestone 2: securitising user-citizenship

While notions of security were already present in the way user-citizens were encouraged to surveil foreign bodies with Bluezone, pandemic user-citizenship in Vietnam became

thoroughly securitised through the language of warfare with the development of the VNEID (Viet Nam Electronic Identification) app. Developed by the MPS's in-house technology unit, the National Population Database Centre (NPDC), VNEID provides users with unique QR codes containing all the information required to quickly pass police checkpoints between precincts during one of Vietnam's harshest lockdowns to manage the Delta variant outbreak. This technological pivot went hand in hand with Prime Minister (PM) Pham Minh Chinh's national address also in August 2021, where he called on each citizen to 'fight this pandemic like it's the enemy' (*chống dịch như chống giặc*), because 'each citizen is a soldier' (*mỗi người dân là một chiến sĩ*) and 'every family, government agency, unit, and locality is a fortress against this pandemic' (*mỗi gia đình, cơ quan, đơn vị, địa phương là một pháo đài chống dịch*) (COVID-19 Government Portal, 2021).

The development of VNEID was a result of evolving pandemic management needs, with mobility – rather than contact tracing – became the main focus of Vietnam's Delta variant strategy. From recording fewer than 1,500 cases and 35 deaths in 2020 to over 1.3 million cases and 26,000 deaths by the end of 2021 (Our World In Data, 2021), Vietnam was met with the pressure to recalibrate its pandemic response across the board during the Delta variant outbreak. In July 2021, Ho Chi Minh City and the wider South of Vietnam underwent a 24-hour-a-day 3-month lockdown under Directive 16; army troops were mobilised to deliver food to households and neighbourhoods as they manned barricades between precincts to ensure that the populace stay as immobile as it could. With manufacturing factories and other 'non-essential' businesses closed down for three months, the MPS anticipated the relocation of approximately 2.1 million low-income migrants in Southern Vietnam away from urban economic hubs ahead of easing of lockdown at the end of September 2021. This created a major logistical challenge for the management of population mobility at a time when the daily recorded case number for Vietnam was shy of 10,000, creating unprecedented pressure on Vietnam's underdeveloped healthcare system.

The development of VNEID is best understood against the background of Vietnam's Law on Citizen Identification (Law No. 59/2014/QH13), passed in 2014, which paved the way for the controversial rollout of chip-based ID cards, each consisting of a QR code on the front and a machine-readable zone on its back. People from 14 years of age can obtain an ID card, which is renewed when they turn 25, 40, and 60. By the end of October 2021, the MPS had issued 50 million chip-based ID cards (Hoang Lam, 2021). The national population database is defined in this same law as 'a collection of basic information about all Vietnamese citizens, which is standardised, digitalised, stored, and managed in an *information infrastructure* (emphasis added) to serve state management work and transactions among agencies, organisations, and individuals'. Here, the database is conceived as embedded in an enabling infrastructure, whose utility is to be mobilised for the broadly conceived 'state management work'. It is in this sense that it takes on the meaning of platform as something to build upon and innovate from; VNEID as interfacing with this database contributes to its ongoing expansion by requiring user-citizens to supply mobility and health data in real time.

The introduction of VNEID to an already busy landscape of pandemic apps was perceived by the general public as adding more chaos to an already strained situation (Tran Yen, 2021). The co-occurrence of VNEID and police checkpoints, coupled with the

militarised language of the PM, marked an important moment in Vietnam's pandemic management timeline wherein the user-citizen became securitised. By invoking the explicit language of national security (i.e., 'every citizen is a soldier'), the state constructed COVID-19 as an imminent existential threat to not just individual well-being – as we saw in milestone 1 – but also to the overall project of state 'securityness'. Recasted as health soldiers, intelligible and answerable to their superiors through a centralised app that keeps track of their movements, user-citizens found themselves interpellated as combatants in a national emergency against an amorphous enemy – where non-compliance could be deadly, and any mistake made could compromise the rigid structure of fortress Vietnam (i.e., 'every family, government agency, unit, and locality is a fortress against this pandemic'). The securitisation of health citizenship, therefore, is inseparable from the platformisation of mobility management through the development of VNEID – whose operation became infrastructuralised with its adoption of the global QR code system on Vietnam's chip-based ID cards.

Despite well-documented backlash against VNEID (Tran Yen, 2021), the MPS maintained that VNEID is the optimal way to ensure that migration out of urban centres could be done in a safe and orderly way, because the app is built to be interoperable with the national digital population database and the new digital citizen ID system. It is in this sense that there was a shift in positioning pandemic management apps such as VNEID not as a standalone technical sovereign that inserts itself into the everyday practices of citizenship, but rather as a gateway or interface through which citizens can have some interaction with the databases that contain information about them. In this discursive shift, the notion of the platform takes on explicit infrastructural qualities; platform architecture and governance require an economy of data interoperability, subverting the logic of proliferation that had driven the app-as-platform economy up until the MPS became involved in Vietnam's pandemic governance project.

Milestone 3: user-citizens as surveillant subjects

On 11 September 2021, after almost two weeks of public backlash over the deployment of VNEID, the PM announced at the National Steering Committee for COVID-19 Prevention and Control (NSC) that the MIC would develop one single mandatory super-platform for pandemic management. This super-platform would integrate all single-function apps that had proliferated up to that point, and would be interoperable with the national population database. The MIC has worked with different governmental and non-governmental collaborators since the beginning of the pandemic; it was also involved in the development of Bluezone alongside the MIH, making it a capable mediator in the power matrix behind Vietnam's pandemic platform landscape (see [Figures 1 and 2](#)).

When PCCOVID, the much anticipated 'super-platform' was introduced in October, it both underdelivered on the PM's mandates and overpromised on gratuitous functions such as activity log, rapid contact tracing, risk profiling maps, and mobility density. PCCOVID merged together Bluezone and NCOVI – two platforms launched by the MIC and the MIH in 2020 (see [Figures 1 and 2](#)) – rather than all 19 existing apps, and quietly enabled GPS tracking in its design. Existing Bluezone users are prompted to update to PCCOVID and, upon completion of update, prompted to consent to

allowing location tracking with GPS – a swift and major shift to abandon privacy-preserving measures that formed the basis of Bluezone’s rollout in 2020. PCCOVID also acts as the data collection interface for four different databases, managed by different ministries: the national population database (managed by the MPS), national database on insurance (managed by Vietnam Social Security), national database on vaccination and prevention of COVID-19 (managed by the MIH) and database on COVID-19 testing (Vietnam News Agency, 2021). This level of automated data sharing and streamlining across government ministries is unprecedented in Vietnam – so is the amount of personal data that user-citizens are required to carry and provide to their government with PCCOVID installed on their phones.

Far from the seamless, integrated experience that the ‘super-platform’ messaging promised, upon deployment PCCOVID was glitchy and slow to update user vaccination data. The app also generated unencrypted QR codes that rendered important user personal data such as ID number, full name, gender, date of birth, and phone number vulnerable. This critical oversight was left unaddressed for over a month; during this time, PCCOVID released a ‘hide my QR’ function to allow users to self-encode their personal QR codes, where parts of the user’s ID number, date of birth, and phone number would be replaced with an asterisk when the function is switched on. The good pandemic user-citizen, as it turns out, is expected to also be adept at knowing how, when, and to whom they should disclose their personal data. PCCOVID would later adopt the standardised QR code system printed on new chip-based ID cards – which were coincidentally being rolled out at around the same time.

With the development of PCCOVID, the user-citizen graduated from a securitised individuated health subject to a permanent surveillant subject. PCCOVID later adopted a colour code similar to the one implemented in China to decide in real time whether someone poses a contagion risk across different localities. Khanh Hoa province, a province in central Vietnam, became the first locality to customise their own rules on PCCOVID; this classification determines a person’s quarantine status, which is reported to and monitored by local police. Using PCCOVID, different localities may tweak parameters to reflect their pandemic policies, so that as user-citizens move around the country, their risk profile could be updated in real time. User-citizens as surveillant subjects are productive by design: functions such as rapid contact tracing, risk profiling maps, and mobility density only became possibilities as a result of GPS tracking, which provides more granular, accurate, and long-distance tracking compared to the limited, opt-in approach of Bluetooth technology. Active surveillance of self and others became less important if technology could be mobilised to capture movement and behaviour in ways that can be readily analysed, profiled, visualised, populated. Here, user-citizens became data-emitting and data-displaying assemblages, rendering themselves legible to the state and useful to the entangled web of private technology providers behind the increasingly platformised infrastructure that fuelled the progressively normalised practices and ideology of technogovernance – that is, governing through, with, and by technology.

Discussion

This paper has traced the evolution of user-citizenship practices and imaginations around pandemic platforms as they relate to institutional cross-ownership of data,

data infrastructures, and techno-legislative discourse. Within 23 months, the state imagination of pandemic platform in Vietnam evolved in a direction that rapidly infrastructuralises this technology: platform was first understood as a standalone technical object before it was briefly relegated to mere data collection interface for databases as platform-proper, to finally becoming platform-infrastructure that facilitates institutional interdependency. In this process, the pandemic user-citizen also evolved from siloed, individuated subjects to data subjects already captured by the techno-apparatus of pandemic governance. Platform as processual technology, in this sense, liquefies the figure of the pandemic user-citizen as it gives them new durability, solidity, and consistency: performing pandemic citizenship increasingly becomes synonymous with being tracked, recorded, and datafied so that the citizen becomes intelligible – that is, properly seen – by an emerging data infrastructure whose coming into existence promises better coordination among different domains of authority, more seamless governance, and from which other techno-governance advances could be made.

Latour (1990) remarked that ‘technology is society made durable’ – referring to the mutual stabilisation of human and technology in the socio-technical world, a process wherein heterogeneous aspects of a technology can become concealed from view once it stabilises. Infrastructural technologies, for example, only become visible to us at points of breakdown; it is through failures that infrastructures reveal themselves to us (Star & Ruhleder, 1996). That the notion of pandemic platform persists as a desirable state project despite ontological instabilities and cultural slippages signals conviction in a technological solutionism that views digital infrastructures as problem-solving infrastructures which, if not yielding immediate results, could still return positive outcomes in the future, once it has become stabilised. In the gap between what digital infrastructures promise and what they actually deliver lies ongoing negotiations of platformisation as a multidirectional process, wherein the proliferation of platform as infrastructure-building could come to a halt to make way for more concerted infrastructuralisation of these platforms – a process that sees imaginations around platform shift in tandem with reorganisations of power practice across state machinations. The platform as a discursive and material object has managed to occupy a central position in how digitalisation policy was written and implemented in Vietnam during the COVID-19 pandemic, perhaps precisely because of its discursive slippages. Platform acts as a conceptually elastic shorthand for undetermined and open-ended technological deployments which respond to the chaos of managing a global health crisis, while maintaining some vision of eventual stability as infrastructure.

Throughout the unfolding of platform-infrastructure entanglements in pandemic management, the user-citizen emerges and evolves alongside health surveillance needs, contested practices of power, and open-ended visions of what ‘platforms’ could achieve. The infrastructuralisation of pandemic platforms in Vietnam happened against the background of existing digitalisation policies, where digital platform is increasingly discussed on the same terms as digital infrastructure – which in turn is increasingly understood as already embedded in an aspirational ecology of super-infrastructures. The user-citizenship framework is particularly potent in examining the ways in which pandemic technologies call into being particular materialised bodies through their operative logic, the cultural imaginations around them, and the surveillance practices they facilitate. The framework also helps sharpen the focus of researchers of digital platform on the mutual

shaping of the government – technology – user-citizen triad – something currently missing in discussions about the platformisation of social service provision by way of public infrastructure.

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