

With in-depth  
Myanmar  
case studies

# Public interest infrastructure

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Digital alternatives in our data-driven world  
and journalism's role getting there

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and Emilie Lehmann-Jacobsen*

**IMS | Public interest infrastructure**  
Published in Denmark by IMS in 2023

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**Publisher**

IMS

**Design**

NR2154

**Cover Photo**

*Illustration by NR2154*

**ISBN**

978-87-92209-46-7

This report is supported by  
the Danish Ministry of Foreign Affairs' Tech  
for Democracy initiative

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**GOOD JOURNALISM | BETTER SOCIETIES**

# Public interest infrastructure

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Public interest infrastructure is a set of digital tools that intentionally serves the public interest and digital spaces that operate with norms and affordances designed around a set of public interest values. They are explicitly designed to inform members of the public about the issues that shape their lives in ways which serve the public's rather than any political, commercial or factional interest. Public interest infrastructures can be commercial, public service or community infrastructure.

Public interest infrastructure encourages and informs public debate and dialogue across society, it enables journalists and others to hold those in power to account. Therefore, public interest infrastructures are built to be inclusive, diverse and non-discriminatory as well as open, transparent, accountable and user centric, and they give users full control over their personal data, their content and interactions.<sup>1</sup>



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# Foreword

“[W]e hope you will join this emerging movement and that we can work together, across sectors, geographies and expertise, towards a brighter future for journalism and democracy.”

“In the digital space, this war has been eight years in the making.” So said a Ukrainian journalist and tech expert to a group of American tech companies, Danish diplomats, Ukrainian colleagues and government representatives a few days after the first Russian troops had invaded Ukraine.

The journalist was referring to the Russian disinformation campaigns seeding toxic and false narratives on social media in Ukraine, in the region and in the rest of the world since Russia annexed Crimea in 2014, now used to justify the current war.

Through history, information technology has been used to influence operations with deadly consequences. IMS was founded specifically in reaction to two defining catastrophic events of the 1990s: the wars in the Balkans and the Rwandan genocide. In both cases, shortwave radio played a crucial role in inciting violence and hatred, leading to rates of death and destruction many had hoped belonged to the past.

The response from coalitions of courageous independent media outlets and a broader, growing media development community was financial support to

independent media paired with capacity building, training in ethical journalistic practices and local structures for self-regulation. Essentially, ensuring that journalists have the skills, resources and understanding to fulfil the profession's democratic potential and counter deadly false narratives.

However, today, as a handful of American and Chinese companies own and govern dominant parts of our digital infrastructure – the search engines, social media platforms, app stores, undersea cables and more that define, enable and limit our digital realities, including the amount of attention spent consuming disinformation versus quality journalism – it is clear that even more needs to be done.

Seven days after Russia's invasion, IMS facilitated a virtual roundtable with Google, Meta, Microsoft, Twitter and local Ukrainian media partners, factcheckers and broader civil society, together with the Danish Tech Ambassador and the Tech for Democracy initiative (full disclosure: this report is funded by the latter), to explore new paths of collaboration in combating disinformation and amplifying local quality content. The roundtable is now in



PHOTO: ALEXEY FURMAN/GETTY IMAGES

its second year and, according to the Ukrainian participants, has led to real, positive change in the digital environment they operate in.

Yet it is clear that the geopolitical pressures on (US) tech companies are unique in the Ukrainian context. To maximise impact in all contexts, it is paramount that individual collaborations do not remove focus from the fact that the grounds of journalism are shaking on a global and digital scale. We see media businesses struggling and dying; online violence against journalist becoming the new favourite tactic of autocrats and malign actors; and disinformation successfully dissolving the facts and shared reality upon which democracy stands.

Digital infrastructures play an essential role in these challenges. But, as this report shows, marginalised communities and independent media in, for example, Myanmar face a different and much harder path than their Ukrainian colleagues when trying to engage the

international companies (or the local military junta) that own and control their digital infrastructure.

What the situations of Ukraine and Myanmar show is why we need a two-pronged approach to improving our digital infrastructures: one, to engage in timely and creative ways with dominant tech companies when new paths for innovative collaborations arise and concrete, measurable impact is realistic and achievable. Two (and this is where this report primarily is situated), to work to inspire, incentivise and scale proactive tech and journalistic solutions anchored in local communities.

We need to use the knowledge and methodologies – local ownership and anchoring, coalition building, multi-stakeholder collaboration – that have become the backbone of the media development field's work. We need to keep pushing for systemic solutions for the grave problems that independent media and marginalised communities face on the ground, and further unleash their tre-

mendous potential to create something better. We believe that their experiences on the frontlines of democracy and their ingenuity are essential to the development of future digital infrastructures that serve the public interest.

This work will continue to be an explorative process, and we by no means claim to have all the answers. Instead, we hope you will join this emerging movement and that we can work together, across sectors, geographies and expertise, towards a brighter future for journalism and democracy.

**Jesper Højberg**

EXECUTIVE DIRECTOR OF IMS

# Executive summary

This report examines why digital infrastructures are crucial to the work and survival of independent media, particularly in Majority World countries, and why the current infrastructures are a serious threat to press freedom, access to information and democracy. It also presents inspiration, examples and recommendations to what a broad range of actors can do to create alternative public interest infrastructure and explains why media is a crucial actor to include in these processes.

First, a timeline introduces the key shifts in media and information distribution throughout time.

The first chapter, *Digital infrastructure that serves the public interest*, outlines basic elements of what public interest infrastructure is and why the scale of our current problems in the digital space forces us to focus more on locally anchored alternatives. It is based on a range of interviews and public events over the past year and a half with leading journalists and tech experts, including IMS partners, from around the world.

Moving closer to the local context, *Online risks and social resilience in Myanmar* analyses the advantages and dangers of current digital infrastructures in Myanmar, particularly regarding social media and messaging tools. The analysis looks into how digital platforms have increased trust levels and direct communication, but also concludes that the price of these develop-

ments has been very high, and that the services posed a threat to the public's safety after the military coup on 1 February 2021.

Building on leading academic research, *Who controls the internet in Myanmar* presents a mapping and analysis of the ownership and control of Myanmar's digital infrastructure, from cell towers and undersea cables to apps, and its consequences for local media and the public. The researchers conclude that the military is in a prime position to turn the country into a digital dictatorship.

The last chapter, *How to get there: reimagine, build and scale in the public interest*, analyses and proposes what steps independent media, the media development community, global and local communities, governments and donors can take towards creating digital infrastructures that better serve the public interest locally and globally, while introducing solutions that excites us – like local, slow-moving social media platforms and a tool to measure the public interest value of an organisation's current and future tech procurements.

Finally, the report rounds off with a list of recommendations to catalyse the ambitious work towards the vision of public interest infrastructure. These reflect that we need to join, form and support coalitions with diverse skills and a shared vision at local, regional and global levels.







# Transformative media history

Throughout time, the introduction of new means of communication and sharing of information has altered practices and changed the course of history.

Societies have repeatedly had to adapt to new mediums and have in return influenced the further development and integration of them. New forms of

communication and transmitting messages have given humanity the abilities of recording events and sharing information across space and time constrict-

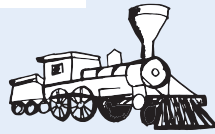
tions. However, these have also posed great challenges in periods of adaptation – and created needs for new regulative and legal frameworks at national levels.

## The printing press

With the introduction of the printing press in 1440, text could be mass produced and thereby distributed at a much faster rate. This technique further gave birth to printed media and the field of journalism.

**MEANS OF DISTRIBUTION**  
Physical transportation.

1440



## The radio

From the 1920s with the roll-out of radio, people were introduced to the concept of broadcasting – meaning a one-to-many means of communicating. Now people could listen in real time to the news or entertainment programmes. This contributed to the development of national cultures.

**MEANS OF DISTRIBUTION**  
Wires and radio waves – and later cables.

1920s



3000  
B.C.

## The written word

End of the oral era. With the invention of writing more than 5,000 years ago, it became possible to document events and cement stories and narratives.

**MEANS OF DISTRIBUTION**  
Physical transportation.

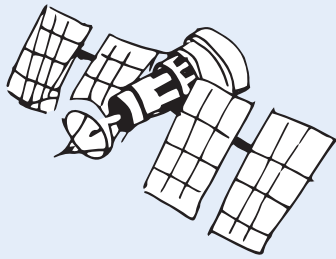


1844

## The telegraph

The invention of the telegraph in 1844 removed the necessity of physical transportation of information. Messages could be transmitted quickly over long distances. This revolutionised businesses and politics – at both national and global levels.

**MEANS OF DISTRIBUTION**  
Wires.



## Mobile technologies

The first handheld mobile phone was demonstrated in 1973, and the technology behind it gradually revolutionised telephone communication. It was no longer necessary to make a call by connecting via a fixed landline cable. People were now able to have conversations wherever they were.

**MEANS OF DISTRIBUTION**  
Radio waves, cell towers, satellites and cables.

1973

## Social media

In the late 1990s, the first social media emerged – forever altering the global information ecosystem. Social media facilitate the creation and sharing of information, ideas, interests and other forms of expression through virtual communities and networks. Intended as platforms for social engagement and user-generated content, social media have also become crucial tools for reaching audiences among news media, private companies and political entities. Originally seen as democratising platforms providing everyone with a voice in the public debate, social media enabled by surveillance capitalist business models have unfortunately also been weaponised and used to distribute disinformation and hate speech in efforts to influence public opinions.

**MEANS OF DISTRIBUTION**  
Social media have themselves become data-driven platforms for distribution but also rely on existing infrastructure (cables, cell towers, internet exchange points, radio waves etc.) to extract data and connect people with products/messages/ one another.

1997



1940s

## The television

Television took broadcasting in the 1940s and 1950s to a new level. With moving images, people could be transported to the scene of an event without leaving their homes. It quickly became the most trustworthy medium for news as people were able to see things with their own eyes instead of having events recounted to them.

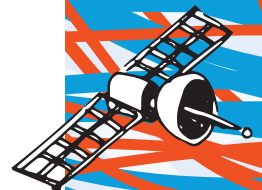
**MEANS OF DISTRIBUTION**  
Wires and radio waves – and later cables.

1990

## The internet

Starting out as a way to link universities to share data across long distances, the internet developed into a global system of interconnected computer networks that facilitates communication between networks and devices. The internet has reshaped and redefined most communication and information sharing practices by introducing email, websites and later social media. It has broken through national boundaries and fostered possibilities of connecting people beyond borders, time zones and language barriers – yet its impact is not equally distributed.

**MEANS OF DISTRIBUTION**  
Cables, internet exchange points, data centres, radio waves, cell towers, etc.



# A digital infrastructure that serves the public interest

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*By Magnus Ag and Nynne Storm Refsing*

This chapter looks at the current challenges of our digital infrastructures and identifies the need for a holistic approach that enables an understanding of and strategies to alter infrastructures. If we want to ensure infrastructures that serve independent journalism and other areas of public interest in local communities, they must be examined at all levels from apps and algorithms to physical cables in the ground.



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## Digital public interest infrastructures begin and end with the needs and interests of the public.

“There comes a point where we need to stop just pulling people out of the river. We need to go upstream and find out why they’re falling in.” – Desmond Tutu

The scale of disinformation and hate speech, the undermining of business models for local news production, Cambridge Analytica and the Rohingya genocide, as well as the monopolisation and privatisation of data-driven knowledge about our societies, are all symptoms of larger, systemic problems with our digital infrastructures.

At IMS and with this report, we are looking beyond “fixing” existing digital infrastructures like search engines or social media platforms owned by a few powerful companies and are asking what we might build if we constructed digital infrastructures designed to serve the public interest instead. What solutions already exist? What frameworks can be used to score the public interest value of a given digital tool? How do we ensure that the wave of solutions being envisioned and built by local movements, local journalists, local tech workers and local youth that all have a vested interest in the wellbeing of their local communities remain under their control while being scaled? What local and global coalitions are needed to ensure our digital infrastructures serve public interest journalism and democracy?

We come to this from a place of privilege, having worked for 20 years with independent media and journalists of all genders in some of the most challenging contexts in the world. These journalists have borne the brunt of the failings of

today’s digital infrastructures and struggled to find solutions to business viability, safety and disinformation; systemic challenges that no individual, organisation or coalition can solve alone. While we remain dedicated to addressing the challenges that affect our partners on the ground every day, this report – and the research interviews, mappings, workshops and events that have gone into it – is part of the process to set the vision and develop the relationships, skills and coalitions needed to ensure that the internet of tomorrow serves the public interest better than what we have today.

### What is digital public interest infrastructure?

Digital infrastructures encompass everything from internet cables, protocols, servers and mobile towers to telecom companies, social media platforms, search engines and app stores; basically every aspect of the chain that makes it possible for people to access content on the internet, both physically and technically, as well as in terms of ownership (the chapter “Who controls the internet in Myanmar?” will go into much more detail and exemplify the layers, elements and effects of digital infrastructure).

Digital public interest infrastructures begin and end with the needs and interests of the public. Their design rests on the values of democracy, human rights and equality. But there is no one-size-fits-all when it comes to public interest infrastructures; they will, by nature, vary depending on contexts because of

*The challenge***No independent data**

Journalists and academic researchers have limited independently generated data to audit and understand how social media platforms determine what (dis)information they serve their users, what news and narratives are amplified or suppressed

and which online communities those users are encouraged to join. Company-owned monitoring platforms like Meta's CrowdTangle provide limited access and functionality and present a clear conflict of interest in what data is made available.

*Solutions that excite us***Citizen Browser****UNITED STATES**

A nationally representative panel in the US has installed a custom web browser that allows for sharing real-time data directly from their Face-

book and YouTube accounts with The Markup, a non-profit newsroom. Data collected – while ensuring users privacy – provides important insights and timely independent analysis of how Facebook's and YouTube's algorithms operate.

**Channel 19****SRI LANKA**

Human moderators monitor disinformation on Facebook in two local languages based on keyword searches. The project has made it possible for independent media and researchers to not only follow developments on the platform like the scale of gen-

dered disinformation but also provide counter narratives and reliable information in well-developed packages to Sri Lanka's citizens. The programme offers psychological support for the human monitors. The solution works well in the context with relatively low pay rates and a strong independent media sector. It has made valuable observations, like a rise in gender-based violence.

(Full disclosure: Channel 19 is an IMS partner, and the project is supported by IMS.)

**What are the roots of the problems with our current digital infrastructures?**

The digital infrastructures that enable and affect independent media are currently often provided and run by private companies or by governments without democratic oversight, from the level of internet sea cables, data centres and mobile towers to apps and social platforms.

Our current digital public interest infrastructures often only accidentally serve the public interest. Mostly, they are owned, developed and run by private companies whose main goal remains to maximise shareholder value. Facebook, for example, does provide exciting possibilities for interactions that can be beneficial to public debate, facilitating civil organising and passing of powerful information gatekeepers. The rhetoric of the company has largely presented its services as public goods, but again and again its actions have weighed profit over public interest, despite awareness of life-threatening issues (which will be elaborated on in the chapter "Online risks and social resilience in Myanmar").

It is not unproblematic to ask private companies to solve democratic challenges on their own, and democratic governments around the world are waking up to the uncountable challenges that have arisen from leaving the development of crucial digital infrastructure in the hands of a few tech companies without meaningful checks and balances. But it is important not only to focus on the most visible platforms, popular apps or debated algorithms, but the whole infrastructure that underpins our digital information sphere.

Mehwish Ansari, Head of Global Team Digital at ARTICLE 19, argues for a fundamentally different political economy of the internet that counters the entrenchment of today which she believes is a result of the current business models. "We need a regulatory environment that

their distinct needs, legislations, media systems, economies, demographics and more. Good public interest infrastructures will change, along with the developments of society, because society and its challenges will change continuously. Theresa Züger, Head of Public Interest AI at the Humboldt Institute for Internet and Society, says: "There will never be one infrastructure that we can say to be in the public interest for all times. It is something – as philosophers like John Dewey told us – that we have to define over and over again in a participatory process and process of deliberation."<sup>1</sup>

### *The challenge*

## Dominant tech companies ignore local communities

From the genocide in Myanmar to Afghanistan post Taliban takeover to almost every community where independent media is most at risk, local independent media echo the same

complaint: “Big Tech does not listen. Not to our calls for help, nor to our ideas.” The democratic consequences are dangerous if not deadly.

### *Solutions that excite us*

## War & Disinformation Roundtables

### UKRAINE

“We [Ukrainian journalists and civil society] have direct access [to the tech companies], so we can relate not only problems but suggest progressive ideas.”

In response to urgent request from Ukrainian partners, IMS, in collaboration with Tech for Democracy and the Danish Tech Ambassador, was able – within seven days of the Russian invasion – to facilitate the first high-level virtual Roundtable on War & Disinformation with Ukrainian journalists, fact-checkers, disinformation-focused Ukrainian government agencies and

senior representatives from Google, Meta, Microsoft and Twitter. Information and ideas continue to be shared, and local partners report of a “significantly cleaner media ecosystem.” This impact should be seen in the context of a tragic war and a unique geo-political situation with unprecedented pressures on and incentives for US companies. It will not repeat itself across other marginalised communities. But the model has proved functional, and companies that truly want to serve local democratic communities should take note.

facilitates a competitive and diverse market, not just in the context of social media platforms but in the various sub-sectors of internet infrastructure services. We really need the opportunity for communities to be able to build their own platforms and infrastructure, as well as for a robust environment where we have meaningful choices,” she says.<sup>2</sup>

One Pakistani woman journalist – who was interviewed for IMS research – agrees and mentions this as one of the reasons why digital violence against women and non-binary journalists continues to be a pressing issue: “Media organisations do not have an alternative business model. It hinders freedom of thought when you are so reliant on the structures that maintain the status quo.”

Currently, many public interest media outlets are forced to rely heavily on dominant tech companies’ platforms, apps and search engines in order to run their businesses and reach audiences because there are no better or safer alternatives in their area. Even though nine out of 10 women journalists in Pakistan report that their mental health is being affected by digital violence and eight in 10 self-censor to protect themselves against attacks,<sup>3</sup> the large majority has no choice but to keep using unsafe platforms and apps that are available in order to do their jobs. In this way, they are caught in a loop of contributing to strengthening some of the very power structures they are often trying to challenge.



## Digital attacks against independent journalism

Professor Mark Hansen argues that media has undergone a fundamental shift from past-directed recording platforms to a data-driven anticipation of the future.<sup>4</sup> Newspapers hold an important agenda-setting position in society but mostly told you what happened yesterday. Data-driven media tries to anticipate what is most likely to capture our attention next. Due to the design of (some) media websites and social media platforms, we are therefore no longer always able to consciously decide what journalism, information or propaganda we are exposed to. Data-driven processes are at best helping us find the most relevant information to create change or at worst manipulating our access and exposure to information upon which we base decisions about our life and society.

Authoritarian states have realised that a filled prison cell, a murder that draws international attention or a closed newspaper are no longer the only, or necessarily most efficient, ways to uphold their dominant narratives in an era of data-driven communications. A tactical shift has taken place, and the “authoritarian playbook” has been updated to include what has been called an “ideology of information abundance”,<sup>5</sup> where

floods of lies, misleading statements and outright hate drowns out reliable information. The traditional strategies of information scarcity, like imprisonment and censorship of dissident voices, continue. The global number of imprisoned journalists reached an all-time high in 2022: “[i]n a year marked by conflict and repression, authoritarian leaders doubled down on their criminalisation of independent reporting, deploying increasing cruelty to stifle dissenting voices and undermine press freedom.”<sup>6</sup> However, these tactics have been supplemented over the past decade by a myriad of new digital tools and strategies such as cyber-attacks, hacking, invasion of privacy, computational propaganda, disinformation and political bots designed to intimidate alternative voices into silence or simply crowd out inconvenient truths, journalistic or otherwise.<sup>7</sup>

Disinformation and the current digital scale of it is, to a large extent – although the result of multiple factors – considered a negative externality of our current digital infrastructures. Social media platforms and their automated attention maximising predictions can be seen as a central culprit that has allowed authoritarian regimes and other illegit actors to game these data-driven processes to strengthen their anti-democratic and human rights violating endeavours.

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No app or algorithm will provide the answer to how we best protect journalists in autocracies, counter surveillance or promote the experiences of women and minorities.

The current structures present a threat to both the safety of journalists and freedom of expression, particularly in countries that are not a priority country for the dominant tech companies, which is often countries where their monetisation potential is low (in these countries, IMS media partners experience that there is low to no moderation or attention from the companies but also that they simply cannot create revenues on, for example, Facebook due to the way the company operates in the country); where the companies have no or very limited presence and local knowledge; or a country where political biases affect the companies' moderation. 7amleh, a non-profit focusing on defending digital rights in Palestine and an IMS partner, has for years documented how Palestinian content is removed from social media platforms like Twitter and Instagram.<sup>8</sup> 7amleh's Executive Director Nadim Nashif states: "All of this brings us to the conclusion, basically, that when we are living in a place with a strong government that has the money, the manpower and the political and technological ties, they can manoeuvre and manipulate the [tech] companies to make certain voices and narratives less heard." He sees the same problematic

bonds between a powerful Indian government and tech companies in attempts to silence Kashmiri voices. Local partners and collaborators in countries that IMS works in – from Cambodia and Sri Lanka to Moldova and Belarus – report similar issues.

## The scale of the problem

Disinformation poses a problem in the local context of all the countries where IMS works, and our partners are pioneering multiple projects and activities to counter disinformation. Governments and state-related power structures are consistently considered the main source of disinformation and pose a problem across digital and, notably, traditional media. At the same time, disinformation is becoming increasingly sophisticated through tools that allow the creation of deep fakes, image manipulation, pseudo-official accounts and more, which is making tracking and debunking more challenging. Across countries that IMS is engaged in, the move from semi-public social networks to encrypted messaging groups (most notably WhatsApp and Telegram) poses a significant problem for programmes' and partners' abilities

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Many of the issues we see (...) are accelerated and exacerbated by technological solutions, but are in fact social, political, socio-economic challenges, and these will not be solved by technical solutions alone.

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to monitor, track and intervene when disinformation circulates, both technically and with respect of privacy. The Covid-19 pandemic has hyper-imposed these challenges and the need for public interest content in relation to disinformation as well as safety and the accountability of the platforms. However, it is nearly impossible to define the scale of the problem, not least because of the lack of available data (and the knowledge and resources to process such data).

The challenge goes far beyond IMS programmes and is not limited to disinformation but is a general problem for all research that involves platform data. We do not – and perhaps cannot – know how much media content a user encounters per session or per day per social media platform. For commercial and privacy reasons, the platforms do not allow researchers or journalists to access the data that will let us know the total media diet. Currently, we have no way of knowing if 10,000 misogynistic posts make up 90 percent of 10 users’ media diets or three percent of 2,000 users’ media diets.<sup>9</sup> Similarly, we do not know the proportion of public interest content in users’ media diets and face the same challenges in reverse when building strategies to maximise the impact of public interest content. Shoshana Zuboff argues that this division of learning in society – where five American companies (and a few Chinese) own, operate and process a close to monopolistic abilities and resources to understand and learn from our digitised lives – constitutes a defining challenge of our time. With the development of surveillance capitalist business models, we are returning to what Zuboff calls a “pre-Gutenberg order” as the data-driven knowledge of our local and global communities are “captured by a narrow priesthood of privately employed computational specialists, their privately

owned machines and the economic interests for whose sake they learn.”<sup>10</sup>

Given the scale of the problems, we cannot assume the issues can be solved by only addressing structures around content moderation and data access in connection to an individual company, app or algorithm. Instead, we must take a step back and consider the full picture: the physical infrastructures that provide the basis for all internet activity; the ownership structures of the infrastructures; access to independent media content; the inequalities and safety risks of a given context; and much more. Many of the issues we see reflected in the critique of the dominant tech companies are accelerated and exacerbated by technological solutions, but are in fact social, political, socio-economic challenges, and these will not be solved by technical solutions alone. No app or algorithm will provide the answer to how we best protect journalists in autocracies, counter surveillance or promote the experiences of women and minorities. However, they can play an important role and support positive progress. Thus, it is equally relevant in a media development context to take a closer look at who owns the physical infrastructures, how the internet is made accessible in a given country and how autocratic powers can misuse the structures to prevent dissemination of reliable information, threaten journalists’ safety and use surveillance against any oppositional forces.

Acknowledging the scale and complexity of taking a holistic approach to a global problem, in the following two chapters we will narrow our focus to Myanmar, whose recent volatile political developments, paired with significant digital infrastructure investments navigated by independent media and democratic movements, have made it a country we can all learn from.

# Online risks and social resilience in Myanmar

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*Myanmar Data Citizens [identities kept  
anonymous for safety reasons]*

This chapter provides new insights into the developments and social impacts related to the digital infrastructure in Myanmar that in recent times has returned from a budding democracy to a military state. The analysis presents both the goods and evils of some of the world's most popular social media platforms that have taken dominant roles as owners, providers and moderators of the digital infrastructures in many countries. It probes the question: How could we develop even better and safer digital infrastructure for the future?



Myanmar in the early 2010s was a country that had suffered through one of the longest running civil wars in the world and decades of authoritarian rule under a military junta that left the populace mired in poverty, lacking in human rights and possessing very little freedom of expression. Most kinds of infrastructure and public services that a country's population would expect from its government were severely lacking. Internet access was heavily censored and penetration was in the single digits. Public television only ran two propaganda channels, and all telecommunications were controlled by a government monopoly.

This situation fostered a culture of communal self-reliance, distrust of top-down government institutions and an adaptive resilience that has allowed generations of Myanmar people to weather the difficulties of day to day life. There is a continuity in the way that the people of Myanmar were able to adapt the digital technologies that were available to them to create communal public digital infrastructures.

## A digital revolution

A series of unprecedented political and economic reforms under a new quasi-democratic government starting in 2012 led to a sea of change in Myanmar's digital connectivity and opening up of its civic space. The telecommunications industry was liberalised, allowing new international telecommunications providers to enter the market and rapidly expand the population's access to mobile phones and the internet. At the same time, the strict limitations on media freedoms were relaxed, which led to a blossoming of independent media outlets. Although there was a rush to publish both print and online by these new outlets, it was only online, and specifically on Facebook, that these publications found their audience and staying power. In the rapidly transforming and digitising Myanmar, the "print sector struggled to do watchdog journalism and to build businesses".<sup>1</sup>

A large proportion of the population leapfrogged from never having used a mobile phone or having had access to the internet before, to getting mobile phones with affordable high speed internet connections. They used this newfound connectivity, combined with an expanding civic space and freedom of expression, to voice their opinions on social media, specifically on Facebook.

Traditionally, communities in Myanmar would gather at tea shops, which were ubiquitous in every neighbourhood, to meet friends and acquaintances and catch up on the news – which often spread by word of mouth during the pre-reform era when media was heavily censored.

Another space was religious venues where communities organised mutual support and filled in for what was lacking in public services. In the same way that tea shops were ubiquitous, so too were neighbourhood monasteries and dharma halls for the majority Buddhist population of the country, and churches, mosques and temples respectively for its Christian, Muslim and Hindu minorities.

The extensive bureaucratic administration of the Myanmar state also branched down to the most local level. Central to the state bureaucracy was the General Administration Department (GAD), a top-down command and control structure which had offices in every administrative unit, from the state/region level down to districts, townships and even to the smallest units, which were the wards and village tracks. Every single one of the country's over 16,000 wards and village tracks had a GAD office.<sup>2</sup> The GAD was designed in 1988 to be the bureaucratic backbone of the civil service and the vehicle through which all public services were centrally administered. The department was under the jurisdiction of the Ministry of Home Affairs, whose main role was internal security and, even in the quasi-democratic era of the 2010s, was mostly under the control of the military and therefore not accountable to the democratically elected civilian government.

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Common narratives that "Facebook is the internet in Myanmar" or that "Facebook paved the way for genocide in Myanmar" have a great deal of truth to them.

As such, the infrastructure and administrative structures that did exist in the country were primarily there as a vehicle for control and policing, rather than one for providing services to the population. By reaching into the smallest administrative units of the country, the GAD was a top-down infiltration of formal state apparatus into informal organic communal structures. Government and governance at the local level was something communities had to navigate around, contest against and keep a safe distance from, instead of benefit from, as one would expect from the “infrastructure” of a society.

The upshot of the widespread adoption of Facebook was that these deep distrusts and divisions between formal and informal, the state and communal, were open to the possibility of being challenged.

Much has been written about the negative consequences of this evolution. Common narratives that “Facebook is the internet in Myanmar” or that “Facebook paved the way for genocide in Myanmar” have a great deal of truth to them.

Ever since 2012, civil society organisations in Myanmar have documented and have campaigned against the rise of online Buddhist extremist and ultranationalist propaganda which grew in tandem with Facebook adoption in the country. Myanmar civil society activists also sought to repeatedly warn Facebook about this looming threat, but were mostly ignored by Facebook. Digital rights activists reflected in a recent essay that:

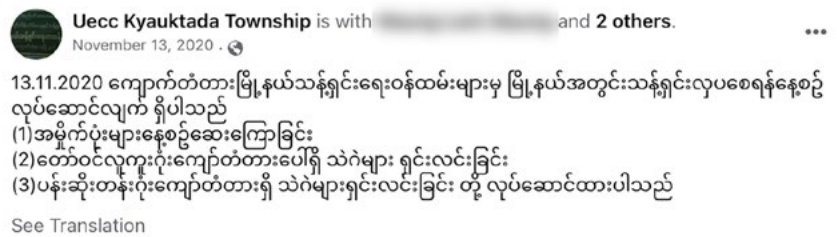
“Our warnings were clear, but Facebook wasn’t listening. Rather than to invest in improving and scaling their enforcement capacity, the company focused its interventions on public facing activities with high PR potential, which deflected its responsibility and shifted the burden for

security onto users, who were regularly portrayed in conversations as either not behaving properly, or not doing enough to report violations.”<sup>3</sup>

The social media giant’s foundations in the techno-libertarian ethos of the Silicon Valley viewed its users as atomised individuals who had to take individual responsibility to use the platform’s built-in mechanisms to report dangerous activities such as extremist propaganda. This ethos fails to see that in societies such as Myanmar, it was not a simple matter of atomic individuals whose offline social connections were replaced

by online connections. Instead, we find that existing offline connections merged with the newly emerging online ones.

People took their phones to the tea shops where in-person gossip mingled with social media feeds; monks at the local monasteries amplified the ethnonationalist propaganda they saw on Facebook by incorporating it into their sermons; and citizens were able to have friendly, public, informal chats with local government officials in the Facebook comments, even if they were not able to do so at the GAD office.



Post from Kyauktada township’s Urban Environmental Conservation and Cleansing Department (a new name for the PCCD given in 2019), showing how their staff are cleaning neighbourhood garbage bins.

35

1 Comment 5 Shares

## New levels of trust

Starting around the mid-2010s, when the political reforms of the new quasi-civilian government were well underway, Myanmar netizens were increasingly aware that on social media they could truly speak their minds, and as a result became increasingly bold in what they said and who they said it to. This change in attitudes combined with the ease with which anyone can kick-start a community engagement effort on Facebook paved the way for some promising bottom-up local innovations in public digital infrastructure.

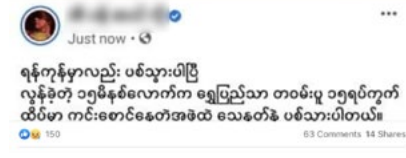
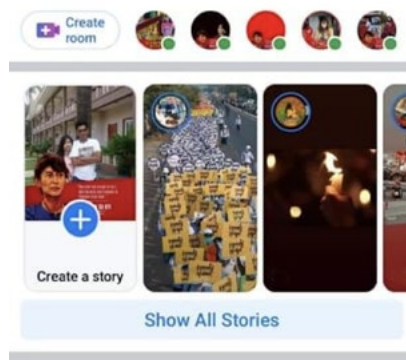
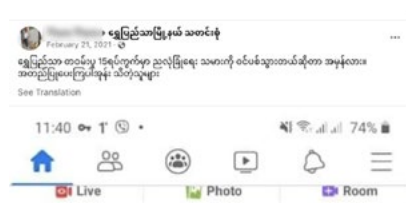
The Myanmar government’s official forays into having an online presence had always been ineffective. However, for some enterprising local level public officials, Facebook opened up a possibility to circumvent traditional top-down bureaucratic control structures.

From 2016, offices of the electric utility from each township in Yangon created their own Facebook pages where they would post schedules for planned power outages – an almost daily occurrence in Myanmar. This provision of up-to-date, relevant information that was incredibly useful to residents was something that could not have happened under the purview of the top-down bureaucracy. Moreover, since these posts were on Facebook, township residents were able to give feedback, comment on and criticise the government, since power cuts were an issue that caused perennial day-to-day difficulties for the average citizen.

Another group of municipal government officials who decided to take the initiative to engage directly with citizens on Facebook were from Yangon’s Pollution Control and Cleaning Department (PCCD). Uplifting the public perception of this department at the bottom of the hierarchy of prestige would definitely not have been a priority for the top-down government bureaucracy. However, officials from the township offices of these departments successfully created their own Facebook pages to document the work that they were

doing and also engage with the public. The pages allowed the public to both show appreciation for the hard work but also communicate the impact of poor waste management in their neighbourhood and frustrations with the problem. The negative comments were not deleted and were instead engaged with, and these pages reflected and fostered an open, hard working and collaborative department. Volunteer initiatives promoting cleanliness in the city, such as Clean Yangon and Trash Hero began tagging PCCD. This simple feature of tagging and having an equally active social media culture of both the volunteer groups and local government meant these posts were one of the most accessible examples of public/private partnership for many people during this period.

In both these examples, we see that Facebook offered several advantages over the top-down e-Government initiatives that went nowhere. Firstly, it allowed for permissionless innovation. Decision-making power is highly centralised in Myanmar’s civil service. As mentioned earlier, since the primary goal of successive authoritarian governments was to put a tight lid on controlling the population, every small decision had to be approved at the highest levels of the bureaucracy. Since Facebook pages did not appear on the radar of the government bureaucracy, they could be created without official approval. Second, it did not cost anything and did not require any technical skills. Instead of having to contract a company through a tendering process and request an official budget, Facebook pages can be created by anybody with very basic digital literacy. Thirdly, these first two features combined allowed for local successes to be independently copied and iteratively improved on. The PCCD pages were started by innovators in one or two townships and adopted in many other townships in Yangon after seeing how successful they were. Fourthly, the initiatives were under the control of those who were closest to their stakeholders, i.e., the local level government officials who are in direct contact with residents. Lastly, it had community engagement







A collection of posts from various neighbourhood Facebook groups in the first month of the coup. Clockwise from top-left: post calling for the creation of a neighbourhood security Viber group; post announcing the donation of food and refreshments to volunteers in the newly formed neighbourhood watch; post sharing news of shootings by the military in the neighbourhood.

Despite these ready conveniences which allowed for Facebook to be a stand-in of sorts for a truly public digital infrastructure, there was one crucial ingredient that was clearly missing for these Facebook-based initiatives to be truly public: a lack of transparency.

built right in from the beginning, since the local residents who were stakeholders were already highly active on Facebook.

Despite these ready conveniences which allowed for Facebook to be a stand-in of sorts for a truly public digital infrastructure, there was one crucial ingredient that was clearly missing for these Facebook-based initiatives to be truly public: a lack of transparency. While Facebook’s business model relies on collection of users’ data about every aspect of their lives, they have been increasingly reluctant to let the public have access to even a small portion of that data.

Over the past few years, Facebook has vastly narrowed down the avenues available to access data that users post on their platform in a public setting. Prior to 2018, content posted on public pages was available for the public to access via their public API<sup>4</sup>, but henceforth access was restricted to only those who have been given invite-only access to

its CrowdTangle analytics platform. In 2022, the company announced that even this invite-only platform was not going to allow any new users to join it.<sup>5</sup> A digital platform that only gathers data for the benefit of the company’s shareholders and does not allow the public to monitor and access this same data can never truly be for the public good.

### Reversals, resilience and unity in the digital neighbourhood

The success of a coup is determined by how quickly and effectively the coup-makers can control a country’s bureaucratic administrative apparatus. Given that Myanmar has historically had a ready-made command and control apparatus that reaches into every neighbourhood in the form of the GAD, it was little wonder that reversing the reform attempts made during the quasi-democratic era in the way the GAD was man-

aged became a priority for the new junta, which calls itself the State Administration Council (SAC). The entirety of the department, which had two short years of being under civilian oversight, was placed back under direct military control. Draconian requirements to report overnight guests in one's home to the local GAD office came back into effect. New GAD township administrators loyal to the SAC were appointed. The fact that the initial protests and civil disobedience movement carried over into an ongoing nationwide armed insurgency shows that the SAC, in many ways, was and is still not able to successfully cement its coup attempt.

In the early months of the 2021 coup, the streets of every town and city in Myanmar became scenes of massive protests, and subsequently of brutal violence enacted by the SAC. Unable to voice their political opinions in the form of mass movements in the streets for fear of being arrested and killed by the junta, activists and the general public – who were overwhelmingly opposed to the coup – sought refuge and safety in the communal structures and safety nets that have always been sites of solidarity, mutual aid and trust. Only this time around, these communal structures had grown digital counterparts in the form of neighbourhood Facebook groups.

Many digital social platforms, including Facebook, are tools of mass *digital* surveillance in service of corporate and state interests. However, these same platforms also allow people to participate in activism and resistance while evading *physical* surveillance by the very fact that the window into accessing them is through a small handheld device that can be easily hidden.

After the coup, traditional sites where communal solidarity is expressed – the streets, the tea shops and the religious venues – were no longer available and safe to congregate in. However, netizens took to their online neighbourhood groups to voice dissatisfaction and address concerns about deteriorat-

ing conditions amid the military's brutal crackdowns. In the face of unprecedented challenges after the military coup, these groups retained the sense of the neighbourhood for their residents who used these digital spaces to communally organise early warning systems and mutual aid.<sup>6</sup>

As the protests and civil servants' strikes against the military coup gathered more momentum in the early months following the coup, the military junta conducted nightly raids to arrest political activists and cracked down on resistance groups. Within the first few days after the coup, overnight arrests and the incidents of arson and poisoning reportedly carried out by the pardoned prisoners spurred fears, anxiety and uncertainty in all communities across the country. These worsening situations alerted neighbourhoods to take protection into their own hands and to set up plans to strategise for their safety. Using digital spaces, neighbourhood watch groups coordinated in patrolling the streets and sharing information about unusual activities.

This online community organising also shows that the often cited line that in Myanmar, "Facebook is the internet", is not something that is set in stone. When the need arose, people in Myanmar were very willing and able to adopt non-Facebook digital technologies, showing a high level of digital literacy. When the SAC resorted to blocking many websites, including Facebook, people quickly adopted VPNs to circumvent the block. When internet connections were completely cut for some periods of time, people started using peer-to-peer messaging apps such as Bridgefy to communicate with their neighbours. When soldiers started searching through people's phones at physical checkpoints, people started adopting secure messaging apps such as Signal that allow chat histories to be cleared and are highly resistant to being hacked. Telegram and Viber groups for dissemination of important announcements for neighbourhood residents cropped up as an alternative to Facebook groups.<sup>7</sup>

Public infrastructures provide improvements to people's standards of living, and facilitate provision of services. Equally importantly, they also create public spaces where communities gather to partake in politics in the broadest sense of the word, in both positive and negative ways. The Yangon-based social enterprise Doh Eain concluded in their study on post-coup neighbourhood dynamics that:

*"Digital spaces have been extensively studied in Myanmar in terms of their potential as a negative force for communal violence, but the current situation indicates that there is fertile ground to better understand how online platforms are a source of resilience and collaboration."*<sup>8</sup>

The people of Myanmar have had to be resilient in the face of generational cycles of oppression under authoritarian rule. They have also adapted new technologies into old practices of communal organising and self-reliance, and their continued resistance in the face of a new authoritarian regime shows that digital public spaces are a cornerstone of their resilience.

## Notes

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6. Doh Eain (2021), *Our Community; Understanding Neighbourhood Dynamics in a Time of Crisis*, Doh Eain.
7. Doh Eain (2022), *The Digital Neighbourhood & Community Resilience*, Doh Eain.
8. Doh Eain (2021), *Our Community; Understanding Neighbourhood Dynamics in a Time of Crisis*, Doh Eain.





# Who controls the internet in Myanmar?

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The following analysis of Myanmar's digital infrastructure presents a methodology and develops a framework for local and global stakeholders concerned about the public' access to reliable information in a country. This analytical tool can be used comparatively across countries and regions to understand specific technical censorship mechanisms. The goal is to help inspire and inform more holistically anchored strategic engagements from different cross-sectoral actors.

With the arrival of the internet and the roll-out of mobile technologies, our abilities to communicate and gather information changed drastically. The world became interconnected; national and language boundaries eroded; and people started talking about how technology would democratise communication. The demand for access to the wonders of the internet resulted in infrastructures being deployed at rapid speed with limited oversight and patchy regulation as a consequence. But the digital infrastructures – from the cables in the ground to the algorithms on social media – have unfathomable influence on people’s access to information. Following the data flows across the different components of the digital infrastructures exposes sites of infrastructural power and the agents that control them. As such analyses of digital infrastructures are a crucial step to having informed conversations and understanding the complexities of our digital information systems and how they may be used to limit press freedom, human rights and access to information.

## Why Myanmar?

Myanmar is an important case in understanding how digital infrastructures often are the determining factor for access to information and the distribution of quality journalism on the ground. In contrast to many Western countries where the roll-out of the internet has been based on existing, terrestrial infrastructures, Myanmar in many aspects is mobile-first. When the country began its political reform processes in 2011 following years of military dictatorship, the roll-out of the internet, and particularly mobile-based internet, was highly prioritised. In 2011, less than one percent of the country’s 48 million inhabitants had access to the internet. Ten years later, the number had grown to 43 percent. In 2014, two telecommunication companies, Norwegian Telenor and Qatari Ooredoo, were contracted for a 15-year period to develop the country’s telecommunication industry – and ambitions were high.<sup>1</sup> Just four years later,

according to Telenor, 93 percent of the country was covered by telecom towers, and the plan was to reach full coverage by 2022.

This development was, however, halted in 2021 with the 1 February military coup, in which the democratically elected government was overthrown and the country entered a conflict situation that can best be described as civil war. Yet, the military already held power over most infrastructures in the country, including the internet. This has allowed them to control people’s access to information, their abilities to navigate the situation and potentially even use surveillance against protesters and political opponents.

## No “clouds”, lots of cables

In order to understand digital infrastructures and their democratic challenges in Myanmar, it is necessary to understand how the internet works. Contrary to popular belief, exchanges on the internet are always physical. The idea of “the cloud” is a successful marketing term, but in reality, the internet is as tangible as roads, bridges and post offices.

The data that we send to one another – whether that be text, audio or video – travels in a manner similar to how packages are sent by traditional mail. When an internet user reaches for a digital device such as a smartphone and opens an app to, for instance, check Facebook, she activates a complex chain of infrastructurally enabled events that break her request down to data packages, pass them along to a local network operator who then route them onwards through a series of network hubs, data centres and cables to ultimately reach the server of the news site (see infographic on p. 30-31). Within the milliseconds of this voyage, other data packages are sent through other routes and to other destinations, delivering information on the user’s whereabouts, browser history, networks speed and so forth to various

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## Note

This infrastructure mapping from fall 2022 is based on the analytical framework for Digital Communication System (DCS) analysis developed by tenure track assistant professors Sofie Flensburg and Signe Sophus Lai from University of Copenhagen (for further information, please consult Flensburg & Lai, 2019, 2020, Forthcoming).

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[T]he digital infrastructures – from the cables in the ground to the algorithms on social media – have unfathomable influence on people’s access to information.

### Mapping internet infrastructures in Myanmar – the four layers:

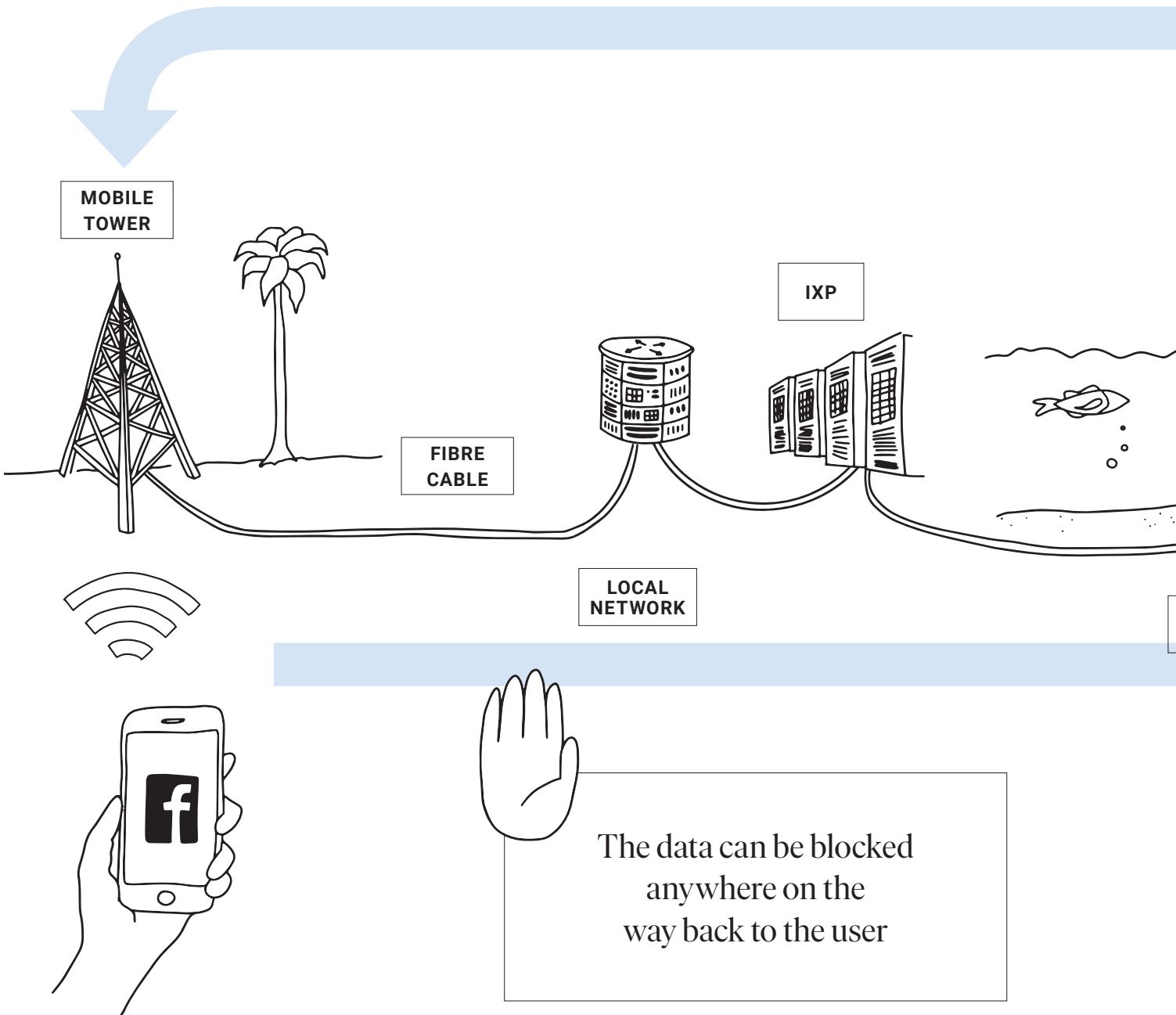
third-party services assisting the app in understanding her preferences, adjusting the required content, selling targeted ads and so forth. The news media then send the requested content back to the user in the form of other data packages that are unpacked and processed by the user’s device and presented as text, images or videos.

The infrastructural arrangements and structural conditions that enable the habitual and mundane activity of checking the news are essential if we want to understand how the internet and digital activities can be – and are – controlled. As communication content makes its way from sender to receiver, data packages can be blocked, stored or redirected in a multitude of ways. The institutions and stakeholders involved in the continuous transport and exchange of digital data thereby hold immense power in contemporary digital communication environments, making governance of critical digital infrastructures an urgent concern in discussions of press freedom, freedom of information and speech and media development.

The internet architecture consists of various layers, which each serve a crucial role in the public’s access to information and are all hierarchical and interdependent. When a smartphone user in Myanmar goes online to check Facebook, she first and foremost needs to connect to some sort of internet connection – most likely, in the form of mobile broadband provided by, for instance, the national telecommunications company Myanmar Posts and Telecommunications (MPT). The local cell phone tower linking her phone to the actual internet constitutes a main component of the *access network*. If successfully connected, her data travel onwards through central hubs and fibre optic cables – the underlying architectures known as the internet’s *backbone*. Reaching the final destination at Facebook’s servers, data are sent in the other direction – back to the user’s device where it is “translated” by her installed *application* (in this case, the Facebook app) to appear as meaningful content. Behind the scenes of these exchanges between the user and the application, other data transactions are taking place, creating a complex ecosystem of known and unknown senders and recipients, known as third-party data companies.

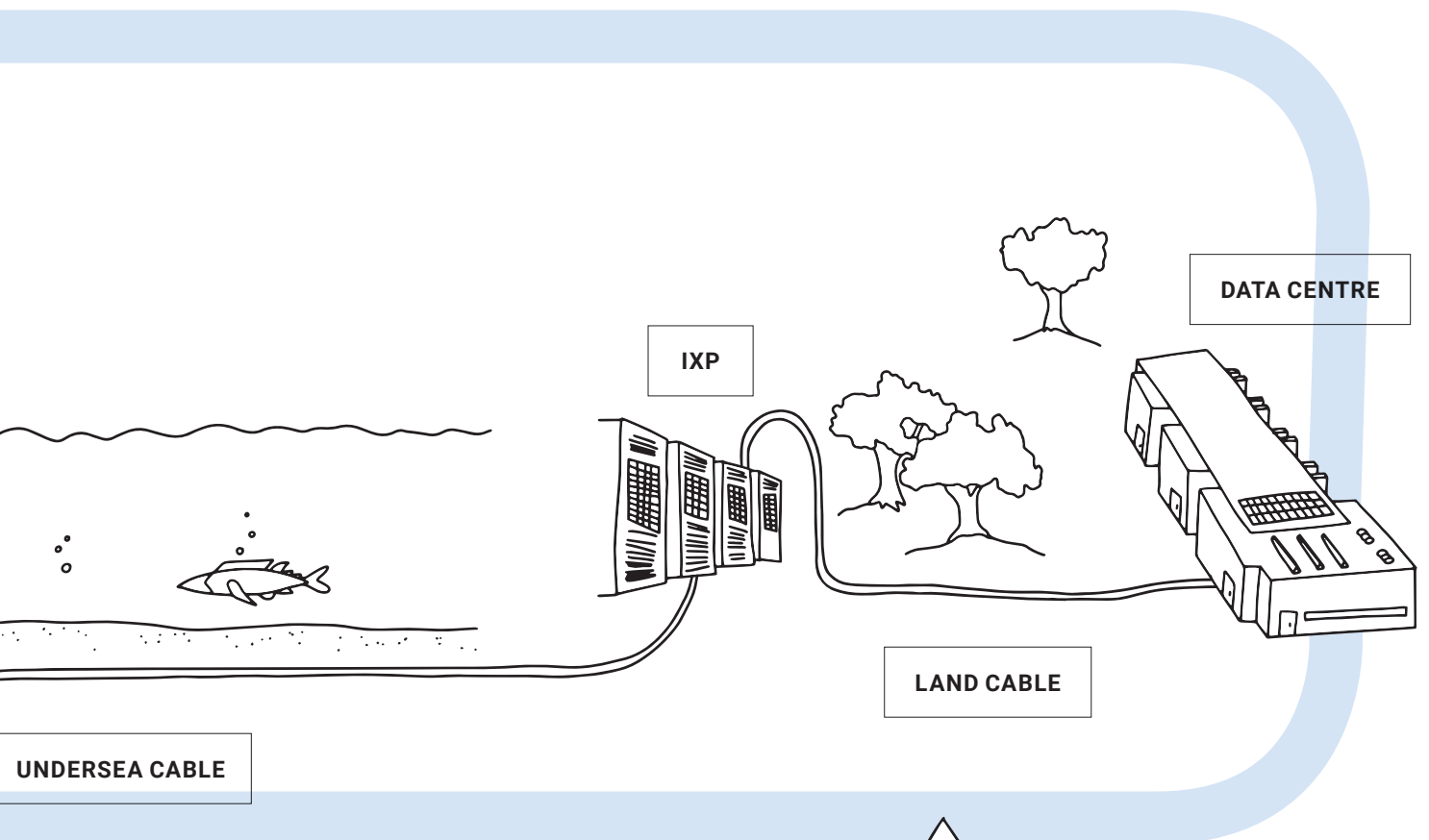
# How data travels from your phone and back

In this example, a user in Myanmar opens Facebook. This action sends a request for a specific set of data packages to the company's servers in California through physical infrastructure above and under ground.

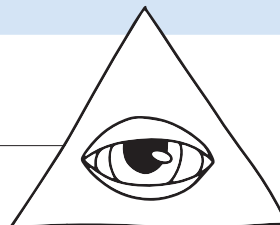




The data is translated into pulses of light or electricity that travels through the cables and are interpreted by the receiving device.



The connection can be intercepted anywhere along the way



When mapping and analysing internet infrastructures, it is useful to distinguish between these four layers: access network, backbone, application and data infrastructures.

## Access networks

A country's access networks refer to the internet connections that are available to end users (the users of any given app or service) and can be assessed by mapping the availability and use of fixed and mobile broadband as well as the internet service providers (ISPs), which are the companies that supply them. Compared to the other parts of the internet infrastructure, the access network layer is relatively straightforward since it is officially monitored by supranational institutions such as the International Telecommunication Union and the World Bank. In the context of Myanmar, where the vast majority of internet connections are mobile, mobile network operators constitute an immensely powerful last mile of digital communication.

Before the military coup, people in Myanmar had the possibility of choosing between four different mobile operators: state-owned MPT, Norwegian-owned Telenor, Qatari-owned Ooredoo and the Myanmar-Vietnam joint-venture state-owned Mytel; two private companies and two companies owned or partly owned by the military. When the military took power in the early hours of 1 February, 2021, they immediately restricted people's access to information by shutting down all access networks in the country. Although access was restored later in the day, telecom companies were on 3 February and again on 5 February, ordered to temporarily block access to Facebook, Twitter, Instagram and related services "to limit social unrest". All telecom companies complied, but Telenor Myanmar released several statements expressing "grave concerns about breach of human rights" since they did not find the requests to be based on "necessity and proportionality".<sup>2</sup> Although Telenor tried to be transparent about the changes and push back against the mil-

itary's demands – not least after they were ordered to not disclose the content of directives from the authorities – the company ended up putting Telenor Myanmar up for sale. Telenor stated that a key reason for the sale was the company's unwillingness to "activate intercept equipment, which all operators are required to. Activation of such equipment is subject to Norwegian and EU sanctions."<sup>3</sup>

On 25 March 2022, the ownership of Telenor Myanmar was transferred to Lebanese M1 group. Although a private company, M1 group has close ties to the Myanmar military and already owns a stake in Irrawaddy Green Towers (IGT), one of Myanmar's biggest telecom tower companies.<sup>4</sup> It is expected that the new owners of Myanmar's second largest telecom operator will be more complacent to the military's demands of, among other things, applying intercept technologies.

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This type of ownership concentration is rarely advantageous from a public interest perspective, but in the context of Myanmar it can be even more disastrous.

In September 2022, Ooredoo also announced that they intended to withdraw from the Myanmar market and sell Ooredoo Myanmar to Singapore-based Nine Communication. With this sale, yet another telecom company will be in the hands of or under control of the military through the close ties between the leadership of Nine Communication and the military top.<sup>5</sup> As such, the access networks of Myanmar will be almost solely under the control of the Myanmar military with limited transparency on privacy and data protection.

As exemplified by the events following the coup, the military's tight grip on the access networks gives it the power to cut off entire communities from communicating online; they can block specific IP addresses and domains (such as independent media and social media platforms) and they can potentially use interceptive equipment to surveil the country's citizens. This has had serious consequences for people's access to information in the country, with media losing their direct online distribution channels to audiences and struggling to gather and verify information around the country.

## Backbone infrastructures

Located beyond the last mile of the access networks, the backbone layer refers to the underlying networks and facilities that allow disparate ISPs to exchange data – for instance, through terrestrial fibre networks, internet exchange points (IXPs) or submarine cable connections. These components of the internet infrastructure are typically highly black-boxed and opaque – also in a global perspective – but can be sketched out using various forms of public databases and registers. For instance, according to the Regional Internet Registry for the Asia Pacific region (APNIC), Myanmar has a total of 135 so-called autonomous system numbers (ASNs) that are assigned to network operators and allows them to transport data to and from a multitude of national IP addresses. As another key component of the internet backbone,

Myanmar Internet Exchange (MMIX) constitutes the country's only internet exchange point (IXP) that enables the exchange of data between different network operators. As a final example, Myanmar has a total of three submarine cables that all connect the South-east Asian region to Europe.

Compared to nearby countries such as Thailand, Malaysia and Singapore, the number of ASNs, IXPs, and submarine cables in Myanmar is especially low, with relatively few operators controlling these key components of the backbone infrastructure. This makes the routing of data vulnerable to breakdowns or shutdowns of network connections going in and out of the country. When scrutinising the ownerships of the backbone structures, the power of the military again becomes apparent. An ownership mapping of the 135 ASNs showed that about a third of these are owned directly by the military and/or state of Myanmar, while about a quarter are administered by “business tycoons”, who very often are deeply influenced by the military through, for example, personal relations or debts to senior military officials.

This type of ownership concentration is rarely advantageous from a public interest perspective, but in the context of Myanmar it can be even more disastrous. While access network operators can shut down local communities, backbone companies can potentially cut Myanmar off from the outside world – i.e., the global internet. As all services from platforms to media rely on fibre highways and internet exchange points for transporting data between dispersed networks, backbone providers have the power to incapacitate them by cutting key distribution routes. Although we are yet to see evidence of services being prohibited from using the in-country backbone structures, we know from other neighbouring countries (such as Vietnam) that the threat of being denied usage of backbone structures can result in platforms compromising their own ethical standards or ignoring users' privacy to continue operations in a country.

## Applications

Turning to the application layer, websites and mobile apps serve as most people's gateway to the internet by translating the data packages transmitted through access and backbone networks into comprehensible content while also breaking down user requests into data. The provision and use of digital services rely on infrastructures such as hosting services (so-called cloud solutions), domain name systems, operating systems, browsers and app stores, all allowing data to be stored and processed at the edges of the network. This part of the internet infrastructure is, in other words, critical to the production and dissemination of information, and therefore often foregrounded in discussions of digital communication and censorship.

As with the backbone layer, monitoring of application infrastructures is highly limited and no official top lists exist that, for instance, shows the national usage of website domains and mobile apps or the underlying infrastructures they depend on. Mappings of national application ecologies therefore rely on commercial databases that are often unclear in their methodological descriptions and developed for other purposes than research. Based on the numbers we do have, Alphabet (Google's parent company), Microsoft and Apple share the operating system market with 59 percent Android, 22 percent Windows and 12 percent iOS devices. As for the browser and app store markets, Alphabet also dominates with 77 percent using the Chrome browser and Google Play being the leading app store. The provision of operating systems, browsers and app stores is important since these software systems serve as gatekeepers of the multitudes of websites and apps available to individual internet users.

Looking at the most used websites and apps in Myanmar, we find both international services such as Facebook, Google, TikTok, Instagram and Messenger and national applications such as ATOM store (Telecom company M1 group's app for managing mobile sub-

scription, playing games and watching videos), Channel Myanmar (translation programme for movies and television programmes), MyID (telecom company Mytel's app for managing mobile subscriptions, etc.) and WavePay (mobile wallet app). It is important to note that these data date from before the coup, but the app store top lists give insights into people's needs and preferences following the coup, and, interestingly, apps that elevate personal security through circumvention software and blocking of third-party data harvesting are also among the most downloaded.

As is visible from the top lists, international companies own and control the majority of the most used application infrastructure in Myanmar. Facebook remains the most used social media platform, YouTube is the most used platform for streaming of videos and Google the most used search engine. People's access to information online in Myanmar is thereby to a large degree controlled by these companies and their platforms' algorithms that dictate what is accessible to the individual. They, in other words, serve as new gatekeepers or curators of information and public (as well as private) debate. Whereas that position in the past was taken up by the professional media who through their coverage and prioritisation of content in their newspapers or broadcasts curated the news for their audiences, the platforms and their algorithms today hold that power.

It is important to note that this level of infrastructure also has become somewhat of a battle ground in the ongoing conflict in Myanmar. With a military that has been known to use the affordances of digital technologies and social media to promote their own agenda, foster hate speech and instil fear, international companies were quick to take measures to restrict the military's possibilities of using their infrastructures in the conflict openly. Internationally-owned platforms – as well as the app stores Google Play and App Store – chose to deplatform key military leaders and military media in the early days of the coup, and the military's attempt

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There is still much we do not know – but unfortunately also much to fear in terms of the potential range of current and future digital dictatorships.

at launching an app for the Myanmar Radio and Television (MRTV) in May 2022 was stopped when Google Play and App Store immediately removed it from their services.<sup>6</sup> However, this has far from stopped the military from engaging in online activities. The platforms are still full of military propaganda and hate speech directed towards ethnic minorities that only drastic changes to the algorithmic infrastructure would be able to tackle.

The military has, however, also taken their own measures and restricted access to some of the main platforms and services inside the country. In May 2021, the military distributed so-called whitelists to Internet Service Providers (ISPs) and telecom companies. These lists contained 1200 online services and domain names that it deemed acceptable for public viewing – all others were blocked for public view. The lists excluded Facebook and Twitter but included WhatsApp and Viber.<sup>7</sup> International media outlets such as BBC and VOA, along with independent national media such as Mizzima, DVB and Frontier Myanmar, have also been blacklisted for periods of time – severely limiting the public's access to non-military-controlled news. These restrictions have resulted in a staggering growth in the use of VPNs (virtual private networks that encrypt your internet traffic and disguise your online identity) and other circumvention tools in the country. However, this has in turn prompted the military to propose criminalising the use of VPNs in the country<sup>8</sup> and making people more

cautious about what sort of apps they have on their phones should they get stopped by the military.

The application layer thereby allows for much more strategic interventions compared to the access layer and the backbone where control is mostly a matter of cutting off access. There is a degree of curation or personalisation at the application layer that impacts even at individual level. Interestingly, in the case of Myanmar, the power here is mainly in the hands of the dominant tech companies that own the major platforms on the internet. However, their power is still very much dependent on well-functioning access networks and backbone structures. Without that, they cannot operate.

## Data

Lastly comes the *data layer*. For the purpose of this report, this layer refers to the presence of third-party services that assist (first party) applications in understanding their users, storing and distributing content, selling targeted ads and so forth. Third-party technologies constitute a critical – but often hidden and opaque – part of the internet infrastructure and market since most applications are both functionally and commercially dependent on externally provided tools and services. The technologies and market actors involved in these activities can be identified by reverse engineering and unpacking specific websites and apps. However, since the tools for this are developed in and for a Western

context, they most likely miss out on important third-party services operating in, for instance, Myanmar. For this reason, the below chart will not provide an exact account of the current realities in Myanmar, but will give an idea of the potential of developing the techniques for studying third-party ecologies beyond the Western world.

As illustrated in the flow chart, we find that the apps used in Myanmar rely on well-known third-party service suppliers such as Alphabet (parent company of Google and YouTube), Meta (parent company of Facebook, Instagram, WhatsApp, etc.), Adjust, and Yandex.

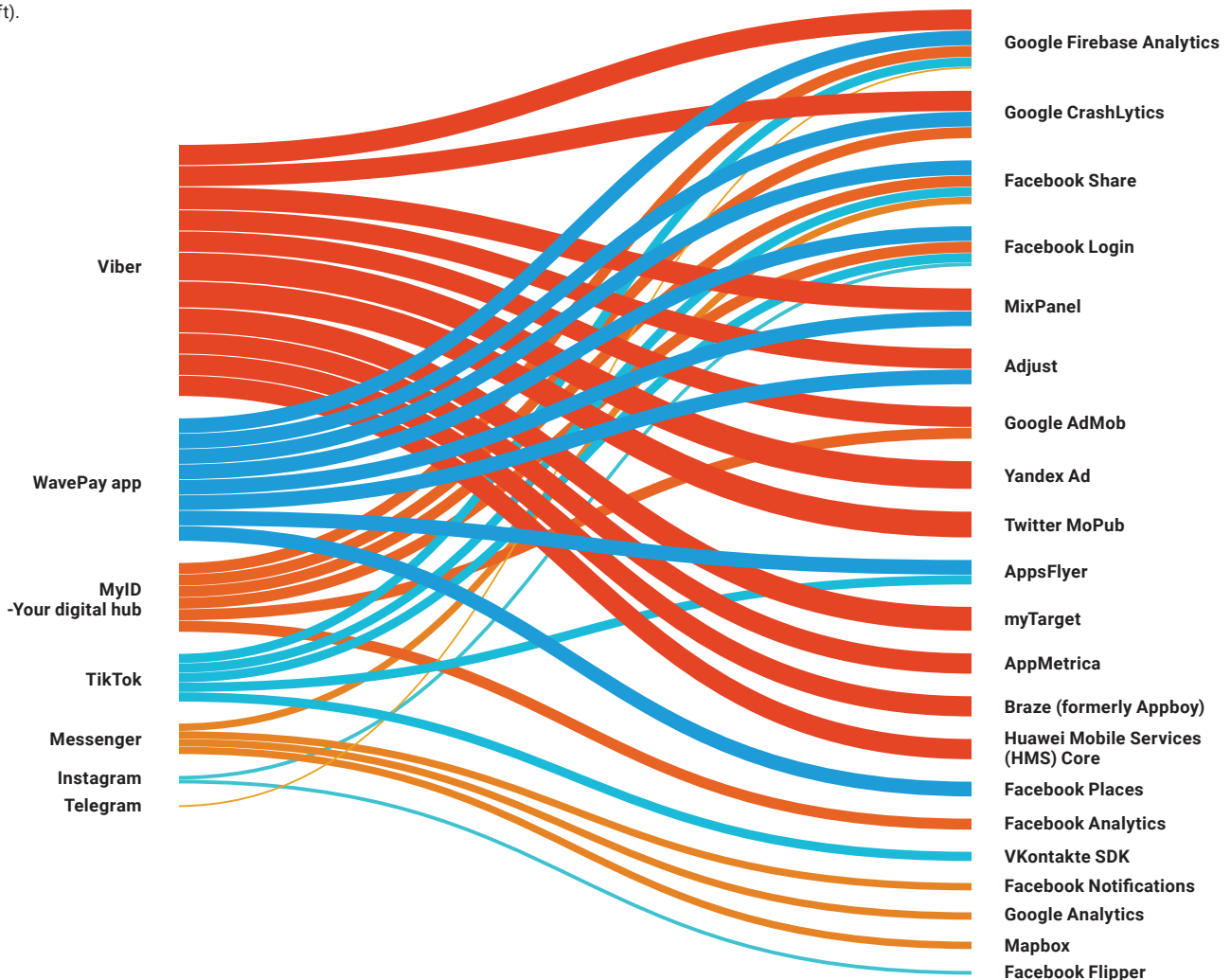
These (often Western) companies' business models and extraction of data have been described as part of a new surveillance capitalistic economic order “that claims human experience as a free raw material for hidden commercial practices of extradition, prediction and sales,” and where “the production of goods and services is subordinated to a new global architecture of behavioural modification”.<sup>10</sup>

To capture third-party infrastructures and markets that are more specific to the geopolitical context of Myanmar, we need to develop methodological approaches and enrich existing data-

bases. Such research interventions would allow for more informed discussions about how user data are collected, stored and distributed – and how other stakeholders such as the military or the state might participate in these activities.

Yet, this minor insight does paint a picture of a system where data is being harvested – even when using local services (MyID, for instance, is owned by Mytel). User information can be collected, processed and distributed to stakeholders like authorities, military and police that are subject to limited control and public scrutiny. Combined with the knowledge that we have on the military’s directives

Ten popular Android apps figuring in the Exodus Privacy database. The chart shows which third-party technologies (right) receive information when a user in Myanmar uses the popular apps (left).



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to telecom companies on using interception technologies, one could fear that user data could be misused for ill-intended purposes by the Myanmar military. Although there are limitations to the data, it would be able to give indications on, for instance, people's online user behaviour, preferences and physical locations – information that could be used to impose further restrictions, target specific audience groups or predict and influence users' behaviour.

It is all a matter of combining the different data points. As an example, geolocation data could be used in combination with basic internet activity data to detect areas of mobilisation. Let us say that the Myanmar military had gotten word of a planned attack by an ethnic armed group. In theory they could, with access to geolocation data and basic internet activity data, follow the mobilisation of the group. As such, power over the data layer means access to data that can be used for other strategic purposes. Yet, with the limited knowledge of what type of data is harvested and who precisely owns the data, it is difficult to monitor and suggest potential solutions and protection mechanisms. In reality, without this oversight, people in conflict areas like Myanmar find themselves in a very vulnerable position.

## The consequences

Since 2021, Myanmar has had one of the world's sharpest declines in internet freedom, and now hosts the second worst environment for human rights online, only outperformed by China. The country's infrastructure is, on all levels, in the hands of either private companies, the current military regime or both.

Given the ways in which the layers are interwoven, in the end, the military has the strongest control. With their current control (either directly or indirectly) of access networks, they can quite effi-

ciently close access to the internet and related services at local, regional or even national levels. The military is also, through its ownership and control of infrastructures, capable of accessing data on users and applying surveillance technologies without transparency and oversight. More research into this is required to understand the extent of the military's power and data access – including the various surveillance tools they have at their disposal. However, it is safe to say that with the current digital infrastructures, the military is well-positioned to establish a digital dictatorship,<sup>11</sup> severely hindering people's access to information and protection of privacy.

Myanmar is thereby a clear case of how authoritarian power holders can control the narrative, avoid accountability and keep crucial information from the public via their control of digital infrastructures. However, it is far from the only example. On a global level, internet freedom declined for the 12th consecutive year in 2022 and in many countries around the globe we see clear examples of authoritarian regimes implementing new regulations providing them with more control over access networks and backbone structures. However, the conversation around digital infrastructures is often limited to only a few elements of the structures. Without a proper understanding of the layers and the ways in which they are interwoven – as well as of the consequences the control of these layers may have on people's basic rights – we cannot begin to discuss potential solutions. This requires more research into infrastructures and more access to the black boxes of the internet such as the platforms' algorithms and the third-party data companies (particularly those operating outside of Western territories). As is evident from this analysis, there is still much we do not know – but unfortunately also much to fear in terms of the potential range of current and future digital dictatorships.

# How to get there: reimagine, build and scale in the public interest

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*By Magnus Ag and Nynne Storm Refsing*

This final chapter looks at a wealth of innovative solutions and strategic approaches that already exists in different communities around the world. It explores how journalism, inclusion, coalitions and other well-established institutions and strategies of democratic societies and movements are key components of a path that – with healthy doses of optimism and realism – can lead our societies to a place with digital infrastructures that better serve the public interest.





“I am fundamentally an optimist. Whether that comes from nature or nurture, I cannot say. Part of being optimistic is keeping one's head pointed toward the sun, one's feet moving forward.”

– Nelson Mandela

In the first chapter, we looked at systemic challenges with our current digital infrastructure for journalism – and for all of us – and introduced a vision of digital public interest infrastructure. Acknowledging the fact that the public interest is best understood and deliberated in the local context, we then zoomed in on Myanmar in the subsequent two chapters to better understand the digital infrastructure in the country today and how this infrastructure has served and not served the public interest over the past few decades. Now we are ready to zoom out again, taking a look at some of the many existing solutions and learning from some of the leading experts in the field. What can journalists, the media development community, global and local communities, governments and donors do to move toward digital infrastructures that better serve the public interest locally and globally? It is important not to underestimate the complexity of the challenges ahead. But it is equally important to take the next step.

## Reimagine

The first step – perhaps the most challenging for many – is to allow yourself to envision alternatives or “reimagin[e] the internet.”<sup>1</sup> Across local and global communities, a handful of companies have become so dominant that people think of changes within the confines of these companies’ products and dominance. But if we as democratic societies and movements, journalistic and civil society communities are going to get beyond constant damage control, we need to set aside part of our attention and resources to innovation and then create alternatives that better serve the public interest.

Our digital infrastructure develops all the time – often quicker on the layers of apps and platforms than undersea cables

and data centres – and we see continuous and significant change. Internet satellites provided by a US-based billionaire have become crucial for Ukrainian journalists to be able to keep doing their jobs during the war against Russia. Internet cables are installed in the bottom of the seas surrounding Africa with investors ranging from Meta and Alphabet to Chinese and Saudi private companies. OpenAI, with Microsoft as its key investor, has launched a beta version of ChatGPT which is likely to change search mechanisms on the internet to provide complete answers rather than link to websites and, consequently, influence the traffic to independent media websites as well as stir hefty debates about copyright infringement and exacerbate issues of mis- and disinformation. These are just examples of a few of the ongoing (at the time of writing) developments taking place in the tech sphere that can massively influence populations all over the world; our access to independent media and reliable information; our everyday lives; and our decision-making as citizens in democracies.

The previous chapters have raised reasons for concern – concern that the current infrastructures have proved to be optimal tools to build digital dictatorships and are posing threats to independent media as well as populations. But luckily there are also reasons for optimism.

## Set a vision

We see a tendency to think of the internet as a fixed entity. Throughout the past decades, dominant tech companies have gained near-monopolies over online information sharing structures (and consequently, with their effect on media business viability and audience habits, including to high degree offline), so it can seem like the digital roads have been paved, the postal routes set and the utility poles dug firmly into the ground.

Looking at these developments over the past decades, it is paramount to acknowledge that they are a result of human decisions. Technological development

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## We need to set aside part of our attention and resources to innovation and then create alternatives that better serve the public interest.

is not deterministic, nor is it neutral. If we want the next version of our digital infrastructures to better serve the public interest, we need to be able to proactively explain how. In other words, we need a vision:

Public interest infrastructure is a set of digital tools that intentionally serves the public interest and digital spaces that operate with norms and affordances designed around a set of public interest values. They are explicitly designed to inform members of the public about the issues that shape their lives in ways which serve the public's interest rather than any political, commercial or factional interest. Public interest infrastructures can be commercial, public service or community infrastructure. Public interest infrastructure encourages and informs public debate and dialogue across society, it enables journalists and others to hold those in power to account. Therefore, public interest infrastructures are built to be inclusive, diverse and non-discriminatory as well as open, transparent, accountable and user centric, and to give users full control over their personal data, content and interactions.<sup>2</sup>

### Anchor locally

The deliberative process of defining the public interest can be conceptualised and facilitated at many levels. One of IMS' cornerstones is our experience built over the past 20 years working with journalists and media in some of the most challenging areas of the world. Local knowledge, local ownership, local partners, local coalitions and local innovation are indispensable components for any successful public interest projects. Another is an intersectional approach, which will be crucial to promoting better and safer future digital infrastructures. "[The reason why social media is designed as it is] is because the subjects at the centre of the design phase for these technologies are typically white males in the Global North. Often, structurally marginalised communities are considered edge-cases – an offensive term in itself – of the design. We really need to consider a different environment where there are no edge-cases. Unfortunately, that is a radical vision," Mehwish Ansari, Head of Global Team Digital at ARTICLE 19, explains.

Some promising alternative digital infrastructure projects underlining the importance of the dynamic between locality and scale – in particular, within social media – are the federated Mastodon, the local Jamii Forums in Tanzania

and the hyper-local Front Porch Forum in the US (see boxes of *solutions that excites us*). These projects start from the assumption that a key reason for Facebook's and other giant platforms' problems is their relentless pursuit of scale and the related ambition to force one set of norms, standards and governance structures upon all communities and all different functions within those communities.

Many local communities around the world are today capable of upholding universal freedom of expression standards while accepting that the norms and expectations of how we behave at the public park, the local bar and the local church vary greatly. According to New\_Public, an organisation that has developed a framework for building better digital public spaces from an urban planning perspective, we have failed to develop the digital counterparts to the infrastructures and institutions that support democracy and populations in physical spaces like cities. In a city, populations, urban planners, government, private companies and more have spent decades deliberating and building libraries, town hall meetings, public parks, city squares that serve the public interest. In online spaces, these developments are happening at extreme speed and often within a single company. One example is that safety for all groups in society

## The challenge

# The world is filled with great alternatives to the dominant platforms and tech solutions, but none of them have gained traction

Believing that it is entirely possible to create tech solutions that will promote and support democracies is a crucial first step. Fortunately for all of us, tech experts, social scientists, cyber feminists, academics and many others have already been col-

laborating on these for years, and solutions are blossoming. Up until now, private citizens have paid dearly for the development of privately owned, profit-centred solutions, but with better investments, the future of digital infrastructures looks bright.

## Solutions that excite us

### EU Digital Markets Act and the US ACCESS Act

#### EU AND US

One solution is to require interoperability by law. The ACCESS Act, a proposal in the US, will require the largest tech companies to open up an API (application programming interface) to help programmers talk to the service, and then give access to start-

ups, co-ops, tinkerers and non-profits that want to offer alternatives to the dominant social networks. In the EU, the Digital Markets Act offers a similar framework, although it only covers messaging apps. It could, however, be expanded to include social networks. Given that many dominant tech companies are US-based with tremendous economic interests in the EU market, these laws could have potentially global effects on how platforms interact and how to develop viable public interest alternatives.

### Public Spaces

#### THE NETHERLANDS

Public Spaces is a Dutch innovative coalition of public organisations working to reclaim the internet as a force for the common good. Most public interest organisations face challenges and conflicts of interest when asking their community members to engage with them via current dominant and

data mining platforms. No one organisation can develop alternatives to this problem on their own. Public Spaces leads by example on how to create momentum at scale by building coalitions and communities of local stakeholders including media organisations, NGOs, theatres, museums, public institutions, universities, start-ups and others with a commitment to the public interest and open digital spaces.

### Mastodon

#### GERMANY

Mastodon is a free and open source federated microblogging platform. It has some of the functions of Twitter, but instead of being one platform, it is built more like email and therefore interoperable, meaning that you do not need to be on the same platform to

communicate as long as you have the recipient's address. Mastodon is an example of decentralisation that provides many of the benefits of centralised social media, but with a technological set-up that, rather than favouring the profits of one giant tech company, instead allows everyone (with the capacity) to be the host of smaller but interconnected online communities.

must be a priority in the design phase of a platform, and the design itself should encourage meaningful conversations.<sup>3</sup>

In the digital space, it is unlikely these local norms, standards and underlying technical solutions could ever be successfully developed in the public interest for every local context within every community by a single company (American, Chinese or otherwise) that maximises for shareholder value or the preferences of a digital authoritarian state.

## Bring in journalism

Not all local or federated solutions are relevant or useful. Some are even harmful when they are not designed within a human rights framework and with an inclusive, intersectional lens. Deliberating the public interest is complex, even within a specific local context. However, one profession that has spent a good part of the past 100 years developing and refining ethics and methodologies on how to serve the public interest is journalism. Moderation and editing have never been easy, but interesting experiments are taking place on how journalistic practices can inform everything from content moderation to the design of local chat forums and social media platforms. Independent media have understood the importance of presenting content to their audiences that reflects how each reader can practise their democratic citizenry, in contrast to the social media platforms that often bombard them with addictive content that often leaves them feeling powerless.

In recent decades, different communities around the world have come up with waves of interesting alternative solutions. With the exception on Wikipedia, a common challenge for almost all non-profit and other new solutions that do not have venture capital-level investments behind them is to generate continued traction and ensure maintenance. “Traction in that respect is ultimately the key to success. If you cannot get the traction, you are doomed to fail, at least in building these alternative social

platforms,” Gert-Jan Bogaerts, Head of Digital Media at the Dutch media organisation VPRO, explains. As part of academic research conducted with the Public Spaces Coalition (which he chairs), Gert-Jan Bogaerts has identified the key elements of generating traction. First, having access to exclusive content. Second, having access to plenty of long-tail content. And third, having access to an audience that is large enough. Here we start to see why journalism and media organisations have a particularly interesting role to play in the movement to create digital public interest infrastructures. But no media organisation or even the whole media sector can do it on their own – broader coalitions are needed.

The above point is connected to a second challenge with more idealistically driven projects. Theresa Züger, Head of Public Interest AI at the Humboldt Institute for Internet and Society, highlights: “We see that there is a room for civic tech and there is a room for technologies that emerge in a different way. However, it is often one thing to ensure that there is enough innovation and to encourage innovation, but it is another to ensure maintenance. We see that many of the infrastructures that have emerged from civic tech and open-source communities have problems with maintenance. It is very unsexy in our world to fund a structure that is old and just needs maintenance. Everybody wants to fund something shiny and new.”<sup>34</sup> Thus, an important component is that democratic governments and private foundations are strategic in their funding to develop sustainable long-term solutions that serve the public interest.

A related but often overlooked donor decision is what incentives these donors and funders create for their beneficiaries’ tech procurement. Many media funders will, for example, have recipients make decisions based on price and functionality – such as reach – while not taking into account that reach is generated through a digital platform that strengthens or undermines local long-term interests. To make public interest tech alternatives more sustainable, there is a need

## The challenge

### Social media is filled with hate and designed for the lowest common denominator

Venture capitalist-backed social media platforms are built and designed to maximise shareholder value. This is most commonly done through data-driven designs that optimise for the user’s attention. These

design choices have enabled toxic dynamics and created the exponential growth in mis- and disinformation and hateful content that disproportionately silences women and non-binary and minority voices.

## Solutions that excite us

### Front Porch Forum

#### UNITED STATES

Front Porch Forum (FPF) is a hyper-local social media platform intended to stimulate people to get more actively involved in their local community in Vermont, US. Once a day, FPF sends out a newsletter with the posts of the day to all the community partici-

pants, to which the participants can then respond directly either to the author or in the next days’ newsletters. The slow design feature has fundamentally dismantled toxic and discriminatory dynamics on larger attention-maximising social media platforms like Facebook. Today the majority of the state’s residents are signed up as Front Porch Forum community participants.

### InforMM app

#### MYANMAR

In Myanmar, The Media Voice group have developed the InforMM app, a media player app that allows media to upload all their content – video, audio, photo and text stories. InforMM also allows users to share content offline, which enables users to avoid issues of connection and data costs that can be a barrier for media consumers in Myanmar. Another feature is the ability to connect directly with the media outlets, which opens up dialogue, feedback and familiarity between media and local citizens.

### Jamii Forums

#### TANZANIA

Jamii Forums that was founded in 2006 is one of the most popular social networking platforms in Tanzania. This site is used, among other things, as a kind of whistleblowing platform where anonymous users can post about topics such as corruption without fearing the tightening legislation that confines local media. Jamii Forums is an example of a platform that is designed for the local needs by providing safety for independent, critical voices and allowing users [AFC3] access to reliable information outside of government control.

for donors to at least incorporate a third parameter around public interest values. “Technology in the hands of journalists won’t be viral, but like your vegetables, they’ll be better for us because the north star is not profit alone, but facts, truth, and trust,”<sup>35</sup> says Maria Ressa, journalist, co-founder and CEO of Rappler in the Philippines.

The Public Spaces Coalition’s tool, The Digital Powerwash developed by a Dutch radio station (see box on p. 44), is a good example of a simple, hands-on approach to scoring a given tech solution’s alignment with public interest values and thus helping integrate the score into tech procurement decisions either at the level of the individual organisation or at the level of donor requirements.

## Always found on a human rights-based and intersectional approach

No matter the scale or scope, any project or initiative that claims to serve the public interest needs to be founded on a human rights-based and intersectional approach. In practical terms this means we need to ensure that our digital infrastructures – and equally important all the technical and non-technical processes to get us there – are shaped by both international human rights standards and the priorities of the context the initiative operate in. It means working in an accountable, inclusive and transparent manner with the needs and interests in mind of minorities and marginalized groups as well as being conscious of and responsive to gender inequalities. We are convinced that digital infrastructures cannot truly serve the public interest of local communities unless both people of all genders and disadvantaged groups participate and are represented in the idea generation, creation, development, ownership and governance structures. Only this way everyone, irrespective of a person's gender identity, sexual orientation, ethnicity, religion, age, language, ability or class, can enjoy their right to freedom of expression and participate in the public debate in digital space.

## Build coalitions

Today, there are strong and competent communities that focus on research as well as concrete solutions to provide better and safer digital infrastructures; venturing into this new tech space, IMS is far from alone. We are fortunate to be able to tap into the many brilliant ideas of journalists, researchers, tech developers, urban planners, philosophers, civil society organisations, human rights defenders and more who are engaged with digital public interest infrastructures. The feminist movement are key allies with their knowledge and methods of equality, inclusion, intersectional

*The challenge*

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**People think the course of the internet's development is inevitable.**

That is not true. Our digital infrastructure is the result of political choices.

*Solutions that excite us*

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**Interoperability**

GLOBAL

Imagine not losing all your Facebook friends if you decided to switch to an alternative social media platform that served your needs, community and public interest journalism better. Email

being one of the best examples, interoperability is the extent to which one platform's infrastructure can work with others. Interoperability allows for local independent media and others to build or contribute to local online environments and thus put decisions about community standards back where they belong: with communities.

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**Digital Power Wash**

THE NETHERLANDS

Practise what you preach. The Digital Power Wash is a digital public interest assessment framework to help determine any disconnect between organisations' public interest mission and the values in the digital tools they use. For example, what are the trade-offs between using Meta-owned WhatsApp or the privacy-focused Signal run by a non-profit if you are a public interest radio station concerned about your listeners privacy but also need to connect with wide audiences?

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**Community radio**

SOMALIA

Radio Ergo is a radio station that every day delivers gender-sensitive humanitarian news and information to local citizens, particularly focusing on those who do not have access to other media sources. The radio reaches rural and remote areas – that are not served by FM radio – through shortwave transmission, but is also re-broadcasted by local FM stations.

Full disclosure: Radio Ergo is supported by IMS

approaches and human-centred care. Like feminist writer Sheena Magenya writes: “Making a feminist internet is more than just a gathering of like minds, it is also a call to action. It is a demand for diversity and safety and fun. It is a big ask. But one gathering at a time...it is possible to begin to push for the same kinds of social, cultural, economic and political changes online that we demand offline/on ground.”<sup>6</sup>

However, we do see a need for more systemic support as well as cross-sectional collaboration where media devel-

opment organisations have opportunities to draw on their experiences facilitating deliberations and coalition building that establishes connections between developers and journalists to avoid mistakes of the past.

The early versions of the internet were driven forward by a mix of American military interest, academia and tech savvy individuals, all with an interest in distributed digital networks that could not be bombed or controlled by one power structure. In the 1990s and early 2000s, the utopian understand-

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## Deliberating the public interest is complex, even within a specific local context. However, one profession that has spent a good part of the past 100 years developing and refining ethics and methodologies on how to serve the public interest is journalism.

ing of the democratic potentials of such distributed networks peaked. A different version of that optimism was at its height during the Arab Spring in the early 2010s, where many were enthralled of social media platforms' ability to function as organising and information distributing tools. However, the other side of the coin was that a handful of companies were driving more and more connections and data through their centralised infrastructures and began the process of reversing the founding principles of the internet as a set of distributed networks. Since then, these companies have only gotten more dominant and undoubtedly have contributed to developments that have served the public interest across different local contexts. But they also grew to a level of power where they could, mostly consequence-free, decide to act against the public interest even when it would have detrimental effects on people.

Today, in the early 2020s, democratic governments and people around the world have started to realise that change is necessary. According to Theresa Züger, more and more democratic governments are waking up and realising the need for public interest infrastructures with a different vision than the pri-

vate companies', but they do not know how to build or support that infrastructure. She says civil society actors are missing from this process, whom she believes are very underrepresented in presenting their vision. "I think they need to be empowered to have the conversations and to have a powerful seat in the discussions about what public interest infrastructures actually are. Public interest infrastructure is an idea that needs to be negotiated. Civil society should be empowered much more to do this," she says.

One way in which media differ from corporate platforms is that independent media can create community. Many media outlets know their audiences very well, sometimes even by first name, and the interaction between media outlets and their audiences are more than a seller and a buyer; instead, audiences often feel a sense of identity and activism through a subscription. Rishad Patel from Splice Media highlights an experience from working with the local outlet Frontier Media in Myanmar. While creating a reader revenue programme, Patel and the newsroom of Frontier discovered that: "The Frontier community are members not because of a financial transaction between an organisation

and its consumer [the media organisation offers a service that the consumer buys]. They are members because they support Frontier's mission: to tell the story of Myanmar with the best journalism possible." This relationship gives independent media special insights and abilities to communicate with audiences in the development of public interest infrastructures.

But no matter how strong the bond is between media or other civil society organisations and their communities, no actor or sector can drive the developments towards public interest infrastructures alone. To achieve change of this magnitude and scale, we need to build coalitions and communities of local stakeholders, including media, the media development community, other civil society organisations like women's and minority rights organisations, museums, public institutions, universities, tech companies and others with a commitment to the public interest and open digital spaces. "A common identified need is for alternative social platforms that [media] can use to promote their content, to interact with their audiences, to build communities and so on," Geert-Jan Bogaerts says. The Dutch Public Space Coalition serves as an

example of such efforts with concrete, implementable activities for both the short- and long-term.<sup>7</sup>

In Europe, public broadcasting was developed a hundred years ago with the intention of serving the public interest. Technical constraints on transmission were a significant limiting factor for the diversity of radio, and subsequent tv, broadcasts that populations were able to receive. Today our scarce resource is not the amount of content being transmitted but attention. Public broadcasting corporations have all three factors to create traction for alternative solutions identified above: exclusive content, long tail content and large audiences. Many parts of the world do not have public broadcasters with the same democratic commitment to a public interest mission, but the existing broadcasters' methods, experiences and reach could be invaluable in the next phase of developing public interest infrastructures.

## Stay optimistic and realistic

Even the strongest coalitions will face challenges ahead. The country and regional context play defining roles for what is achievable. From a global perspective, working with two generalised scenarios can therefore be helpful in remaining realistic both at strategic and tactical levels.

When civic spaces are or begin to open, we need to look to foster local innova-

tion and build coalitions and communities of stakeholders, including media organisations, NGOs, theatres, museums, public institutions, universities, tech workers, governments (if possible) and others with a commitment to the public interest. Such coalitions and communities can then in collaboration study, use and create digital infrastructures that serve the public interest.

In closing or closed civic spaces, a higher level of reliance on existing digital infrastructures might serve short-term public interest goals best, as local communities and digital solutions are assumed to be under immense pressure if not direct repressive control. That leaves us with the difficult decisions about what existing infrastructures to use and trust (for example, Chinese-owned TikTok vs. American-owned Facebook; for-profit WhatsApp vs. non-profit Signal). A concrete framework that can help media organisations and other stakeholders to score a tool's functionality in the local context in terms of public interest value is a way to limit the damage done and prepare the ground for when the opportunity for greater openness arrives. Another solution that IMS has worked with is the Ukraine War and Disinformation Roundtables (see box p. 14), bringing together Ukrainian journalists, factcheckers, broader civil society and government agencies with leading tech companies to identify problems with the platforms and find common ground for solutions in the public interest in the complexity of a devastating war. However, this solution demands commitment from all stakeholders, and

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One way in which media differ from corporate platforms is that independent media can create community.



## Notes

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we are aware that it cannot necessarily be copy-pasted to other contexts.

Collectively, no matter the context, there is a need for support and collaboration. All solutions have to be tested, altered, tested again and developed further until they fulfil the needs they were created to address, and this demands donors who are, at least to some degree, risk tolerant in the sense that they will need to provide resources for experiments. It will also demand an understanding of the fact that there is no one grand solution for everything; solutions must be customised to individual contexts (but with the probability in mind that even though a solution only truly works in one country context, for example, it will provide knowledge and inspiration that will help future processes).

Fortunately, there is optimism to be found among some of the world's leading researchers on public interest digital infrastructures. Says Ethan Zuckerman, Associate Professor of Public Policy, Information and Communication at the University of Massachusetts at Amherst and director of the Initiative for Digital Public Infrastructure: "I am extremely optimistic. First, these companies are less than 20 years old. There's no reason to believe that they will be as dominant as they are forever. I feel reasonably confident that Google and Amazon will be around in some form in 10 years from now. I am reasonably confident that Facebook will not."

Meta's net income saw a 55 percent decline in the fourth quarter of 2022 compared to the same quarter the year before. This happened as the company laid off 11,000 employees (13 percent of its workforce).<sup>8</sup>

"Second," Ethan Zuckerman continues: "Even on the most troubled platforms, there are often moments of beauty and grace. I am increasingly persuaded that no matter how screwed-up the space is, if you give human beings the opportunity to be decent to one another, there is a decent chance that they will."

If we look back in history, there are similar reasons to be optimistic. In the 1700s, the first steps were taken in the US towards the establishment of public libraries – an institution that plays a key role in the information ecosystem and has provided important battle grounds for civil rights. At this point, they were exclusive clubs reserved for wealthy, white men. Later, new groups started to form their own clubs, but they were still quite closed and segregated; (white) women's clubs would not allow Black, Jewish and working-class members, so these groups started their own clubs which would go on to create democratic developments, from suffrage to anti-lynching. It was not until the end of the 1800s that libraries truly started to become available to the US broader public when women's clubs "brought books to the communities and kids who couldn't access major-city libraries."<sup>9</sup> Though the donations of wealthy patrons were needed, too, "[i]t was the women's clubs that were the driving force of the boom [of public libraries], pushing and prodding 75–80 percent of public libraries into existence through their activism, and often becoming librarians in the libraries they helped to create."<sup>10</sup>

The hard work of women and minorities turned a privilege of elite white men into a public good that generations after them are still benefiting from, and in the process, they helped make American society more democratic. Imagine what could happen to public interest infrastructures if diverse groups of people had the chance to develop their own online libraries and public parks to promote citizenry, reliable information and democracy.

As frontrunner and inspiration Maria Ressa said when she, along with Russian journalist Dmitrij Muratov, received the Nobel Peace Prize: "Now, please, with me, close your eyes. And imagine the world as it should be. A world of peace, trust and empathy, bringing out the best that we can be. Now let's go and make it happen. ... Together."<sup>11</sup>

# Recommendations

It took 30 years to break down the internet to its current level of monopolised and centralised dysfunction. It will probably take another 30 to reimagine and rebuild digital infrastructures that serve the public interest. That is a long time for most individuals, organisations, governments, donors and companies. But we can get there. Here are some first steps that have already been taken, and if you have not, we invite you to take them with us today.



## General public

- Engage with your favourite independent media directly on their websites.
- Limit the use of specific social media platforms and other data-driven solutions when the risk of negative externalities like disinformation outweighs the public interest benefits to your local community.

## Media development community

- With an optimistic and realistic view of what is possible in the local context, engage in and support coalitions with accountable public institutions, movements, independent media, companies, universities, libraries, democratic governments and others with a clear and identifiable interest in developing and scaling technological solutions that serve the public interest.

## Democratic governments and the EU

- Incentivise the development and maintenance of public interest infrastructure through investment and regulation – including in and by the most marginalised communities globally – to be inclusive, diverse, non-discriminatory, open, transparent, accountable and user-centric as well as providing users with full control over their personal data, content and interactions.

## Independent media

- Make context-specific decisions on what technologies and platforms best serve the public interest of your local community in the difficult trade-off between short-term reach and viability versus the long-term democratic empowerment of digital infrastructures that give users full control over their personal data, their content and interactions. A good start is Public Spaces' Digital Powerwash.

[https://publicspaces.net/wp-content/uploads/2021/08/Template-Questionnaire-PublicSpaces-Digital-Powerwash\\_Shareable-version\\_2.xlsx](https://publicspaces.net/wp-content/uploads/2021/08/Template-Questionnaire-PublicSpaces-Digital-Powerwash_Shareable-version_2.xlsx)

- Utilise the skills of investigative and data journalism to report on the powers that benefit from disinformation and other defining problems with our current digital infrastructures. Give local communities the opportunity to make up their own minds on the democratic and local consequences of surveillance capitalist business models or digital authoritarianism.

## Public and private donors

- Make it a condition to grantees that public interest infrastructure values – such as user-centric data governance – are criteria along with classic criteria such as price, technical functionality and climate impact in all of the grantees' tech procurement and use.

## All of us

- You can't do it alone. Acknowledge the need for increased and new public, private and civil society collaboration from local to global levels to achieve the ambitious vision of public interest infrastructure. Join, form and support existing and new coalitions at local, regional and global levels of institutions, organisations, independent media and companies with shared visions and needs for digital infrastructures that serve the public interest.

*IMS is a non-profit organisation working to strengthen the capacity of media to reduce conflict, strengthen democracy and facilitate dialogue.*



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