

# GLOBAL INFORMATION SOCIETY WATCH 2021-2022

*Digital futures for a post-pandemic world*



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)  
AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

## Global Information Society Watch 2021-2022

Digital futures for a post-pandemic world

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APC would like to thank the Swedish International Development Cooperation Agency (Sida) for their support for Global Information Society Watch 2021-2022.

Published by APC

2022

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Global Information Society Watch 2021-2022 web and e-book

ISBN 978-92-95113-52-7

APC-202211-CIPP-R-EN-DIGITAL-342

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# SUB-SAHARAN AFRICA, MIDDLE EAST AND NORTH AFRICA, AND LATIN AMERICA

COLMENA: A STORY OF TECHNOLOGICAL CO-CREATION WITH LOCAL AND COMMUNITY MEDIA

DW Akademie and Redes por la Diversidad, Equidad y Sustentabilidad A.C. (REDES A.C.)

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[www.dw.com/en/about-us/s-9519](http://www.dw.com/en/about-us/s-9519) and [www.redesac.org.mx](http://www.redesac.org.mx)

## The challenge of communicating a pandemic

No community on earth has escaped the COVID-19 pandemic, which has been intensively documented by the media across the world. This includes community radio and online media outlets organised by the communities themselves, which offered indispensable platforms for grassroots voices, especially in rural and Indigenous territories of the global South. These “communicators” were important “translators” of online and other information for communities and had to rapidly update their knowledge on aerosols, vaccines and how to locally organise health and care strategies.<sup>1</sup> Community media rely on interpersonal contact to collaborate, build agendas for advocacy, and produce and air their productions. Though personal computers can be found in most community radio stations, this is not the case in many homes. Mobile phones and online access became a lifeline to continue working. However, what started as an opportunity to explore new tools and ways of relating online quickly increased a reliance on commercial software.

Our report<sup>2</sup> explores the ways in which communicators became aware of the different values embedded in online spaces and tools in comparison to the locally developed models of “shared ownership” practised in their collectives. Whether conscious or not, it was a moment when many community media started to translate their right to communicate to be meaningful in digital spaces – a debate that sparked interest in finding or creating alternative tools for online media practice. One of

these alternatives is Colmena, a free/libre and open source media toolbox that brings together in one application all the essential workflows for local and community media production.

## From multi-site research to a collective response

The pandemic imposed different challenges and restrictions on the workflows of community media. Some had to completely close their studios during national lockdowns, as was the case of Radio Confeniae, transmitting from the Ecuadorian Amazon. Others, like Gulf Radio, located in a fishing community in Kenya, had to restrict access to small staff teams and could not host programmes with guests. And even where stations could almost broadcast in the way they did before the pandemic, as was the case for Radio Vénégré in Burkina Faso, they quickly had to adapt to the challenge of insufficient responses by local authorities or “fake news” circulating on the health crisis.

Despite these disparate situations, a common experience was the need to rapidly adapt to the use of new digital tools to be informed and inform others about the spread of the coronavirus. But besides the advantages of digital tools, the communicators also started to perceive new risks with the use of proprietary tools (economic exclusions, privacy, new digital hierarchies), and insightful debates within the community media environment were sparked around the safety, sustainability and ownership of these means of production.<sup>3</sup>

To engage with these discussions, DW Akademie executed a multi-site research project, under the auspices of its Global Crisis Initiative (GCI).<sup>4</sup> A general survey of 34 participating media outlets from different regions across Latin America and Africa, defining themselves as “community media”, confirmed

1 For an example of a regional analysis, from a South African perspective, see: Health-e News. (2021, 31 March). Community media left behind in the fight against the COVID-19 infodemic. <https://health-e.org.za/2021/03/31/community-media-challenges-covering-covid-19>

2 This report covers the following countries: Bolivia, Brazil, Burkina Faso, Colombia, Ecuador, Ghana, Guatemala, Kenya, Mexico, Morocco, Peru, Tunisia and Venezuela.

3 Media outlets like Boca de Polen from Mexico quickly understood that these digital tools made them more vulnerable, as Janis Carillo points out with regard to privacy concerns: “We have detected the needs but we don’t know how to solve them. Awareness is there, which is sometimes the most complicated thing.”

4 More about the GCI, launched in January 2021, can be found here: <https://www.dw.com/en/initiative-transparency-and-media-freedom-crisis-resilience-in-the-global-pandemic/a-57443977>. The body of the research included a document review, market/actor network analysis, the mapping of media workflows, focus group discussions, regional workshops, a survey and an interview series.

that FM radio remains by far the most popular media format in rural communities. While the importance of audio-based radio is undeniable, two-thirds of the outlets surveyed employ strategies for publishing audio, text and multimedia content online. Further, a series of in-depth interviews revealed that technological choices for online communication were often informed by the necessity to find a quick solution in the context of the pandemic.<sup>5</sup> After this gathering of user stories, the ongoing process of co-creating Colmena started.

Teaming up were Redes por la Diversidad, Equidad y Sustentabilidad A.C (REDES A.C.), an NGO based in Mexico, DW Akademie, and a group of initially 12 and later 22 media outlets<sup>6</sup> from Latin America and Africa. Working together, the first concept of an open source, virtual newsroom was developed. The main challenge, especially in rural spaces with limited online connectivity, was to provide a lightweight, secure and mobile toolkit that allows media outlets to exchange critical information, publish their work and stay in contact with their audiences. At the same time, an increased need for safe online spaces and digital inclusiveness was identified. And by listening to the different realities and cultural contexts of the partners, a common need was confirmed: to address intersectionality, gender and diversity issues, acknowledging the different contexts and territories in which radio stations are located.

Putting all the identified observations and ideas of the communities at the centre, and working with a team of expert developers, we started to translate them into practical technology.

### Participatory action in practice

Colmena's co-created design process included community, rural and Indigenous media and other organisations, like Bolivia's first feminist online review *Muy Waso* and free/libre software activists in Latin America and Africa, using a methodology based on participatory action research (PAR). This approach seeks to take a step back from technology, following a path of reflection that starts from the territories and dreams of the communities themselves.

PAR provided a means for dialogue among the radio stations, media collectives and DW Akademie and REDES AC. It was a way to create a shared understanding of how the daily workflow and content creation of each media outlet or station is organised. This was vital knowledge, since our toolkit is meant to contribute to diverse and collective communications practices and ways of living and sustaining life.

For the media collectives, this approach provoked the key question of how the lives of individual collaborators, as well as their collective and organisational processes, had been affected by COVID-19. What prevented them from carrying out their daily activities? The dialogue confirmed their "difficulty in remaining in contact with communities" and their need to "restructure their internal collaboration working from afar."<sup>7</sup> The biggest loss was definitely a common physical space and the daily interaction that happened there.

The move to "virtual spaces" in rural communities became a challenging task. The participating media pointed out the high costs of connectivity and the limited online access in their territories, together with the lack of information to find free digital tools. Therefore, many of them used commercial software solutions.<sup>8</sup> A great dependency on for-profit platforms became evident, resulting in additional costs or, if used "for free", exposing them to the harvesting of their user data in a problematic way – including for independent and investigative journalists working in communities.<sup>9</sup> Another hard lesson shared by the community media was the experience of how little the proprietary tools could be combined with other tools, or modified to suit their needs. Workflows for analogical FM transmission – let's say a live interview in a radio studio – now involved several devices and software tools.

Was there really no integrated solution at hand? The media outlets began to envision "a commonly owned platform to exchange files", a design that would "take into account poor connectivity", and "backup and publishing solutions" that would enhance the creative capacities of community, collective, Indigenous and rural media. Most importantly,

5 A total of 22 interviews were conducted between January and March 2021, with a special focus on rural communities.

6 The participating media are: *Muy Waso* (Bolivia), *Remando/Voz de la Confeniae* (Ecuador), *Radio Sayaxché* (Guatemala), *Boca de Polen* (Mexico), *Radio Ocaina/Red Cantoyaco* (Colombia), *Unión de Mujeres Aymaras del Abya Yala* (Peru), *Red de Radios Comunitarias y Software Libre* (inter-regional), *Rádio Comunitária Aconchego* (Brazil), *Copiô Parente!* (Brazil), *Saúde, Alegria e Sustentabilidade* (Brazil), *Radio Ada/Ghana Community Radio Network* (Ghana), *Radio Breezy/Ghana Community Radio Network* (Ghana), *Gulf Radio* (Kenya), *Radio Amani* (Kenya), *Pwani FM* (Kenya), *Radio Rahma* (Kenya), *Radio Vénégré* (Burkina Faso), *Radio Mères en Ligne* (Morocco), *E-Joussour FMAS* (Morocco), and *Radio Nefzawa* (Tunisia).

7 Both quotes are comments that were made and documented during the first exploratory workshop sessions.

8 As Jenny Paucar from the Peruvian Union of Aymara Women of Abya Yala (UMA) points out: "We had never heard about Zoom and the possibility to meet in those [digital] spaces. So when did this become interesting? When we could no longer gather in on-site meetings."

9 For the participating media, WhatsApp was the tool used for internal communication, Google Drive led in file sharing, and Zoom was the preferred platform for video conferencing. These and other commercial solutions dominated workflow organisation.

they wanted “to have it all integrated in one place.”<sup>10</sup> The collaborative naming of our tool was also part of the co-creation process. The media outlets all proposed concepts and metaphors from their distinct cultures and spaces. From this and other ideas, possible names emerged, with the group finally settling on “Colmena”, which in Spanish means “beehive”. The name and the corresponding branding both emphasised a common and co-owned space for collaboration: a space where bees (communicators) can meet to work and share pollen (information) for the creation of honey (content) that gives continuity to collective life.<sup>11</sup>

To put this beehive into action, a “special” development team was needed. Besides the technical skills, there was a need for a shared ethical grounding and a common perspective on threats that community media face going online. More than ever, human rights and principles such as freedom of expression and privacy are at risk due to the authoritarian advances made in countries and the dominance of big tech in its business model based on data mining. So-called surveillance capitalism provides little space for grassroots communities to thrive and collaborate towards an open web.<sup>12</sup> The persons accepting the challenge to code Colmena brought with them expertise and involvement in agile open government initiatives and were well aware that Colmena would have to take into account questions of low connectivity and the digital divide.<sup>13</sup>

The tech team put much emphasis on interactive design and “built-in” diversity. Usability issues and user experience were taken into account from the very early stages of development. This guaranteed that the diverse needs for using the software were catered for. It was also collectively decided to make Colmena available in six

languages (English, Spanish, Portuguese, French, Swahili and Arabic) and to allow user-driven translation to make the tool available for various interpretations and cultures.

In addition to the development team, we also had to define a coherent (open source) production environment for Colmena, and the choice was a software factory system called GitLab.<sup>14</sup> It provides the infrastructure to apply agile project management methodologies and thereby deliver ongoing updates and increments to the coding. The platform also allowed the team to incorporate the feedback from communities, and respond to their different cultures and customs. This dialogue constantly nourished the progress of features and the overall design. In technical terms, Colmena consists of two main components: (1) a lightweight progressive web application (PWA) working on a wide range of mobile and desktop devices for easy online/offline creation and collaboration; and (2) a secure and decentralised cloud management platform for up to 1,000 users, offering sharing, storage and publishing tools. Combining both environments, Colmena offers all essential tools for local and community media production workflows: high quality face-to-face mobile recording; a recording studio for online interviews; live audio streaming; text and audio editing tools; a publication and dissemination area connected to the main media platforms; and working groups with the possibility of easily sharing various types of files for collective production. Summarised, it offered most of the tools that community media need for production in an all-in-one secure and free package. The long-term vision of the project is to use an ethical infrastructure (hosting) to offer a sustainable alternative to big tech services.

Working with the concept of privacy by default, the application values information security and the data protection of users. It ensures the interoperability of content by adopting international protocols like Dublin Core for metadata. As it is designed for low-connectivity environments, Colmena includes the principle of universal access, with a mobile-first approach in the beginning and an interest to explore potentials for interoperability with community-driven and sustained approaches to securing connectivity.<sup>15</sup> The debate of technological principles and digital rights inspired proposals that

10 As Paúl Salas from the Ecuadorian community radio network (CORAPE) pointed out: “It would be interesting to have an app to capture the voice with quality, be able to edit on the phone and be able to send. It is essential to facilitate the dynamics of journalists.”

11 To share a piece of this debate, let’s listen to the co-founder of *Muy Waso* magazine from Bolivia, Michelle Nogales: “We dream of having a safe space to share our data, with a place that brings together the content, a quality tool, fast and free. With this platform we dream of having everything in one place, on your phone or computer, with free and open source software. A beehive as a place where we all get together to work, where there is what we need to have our final products.”

12 For an interview with Shoshana Zuboff, who coined the concept of “surveillance capitalism”, see: Kavenna, J. (2019, 4 October). Shoshana Zuboff: “Surveillance capitalism is an assault on human autonomy”. *The Guardian*. <https://www.theguardian.com/books/2019/oct/04/shoshana-zuboff-surveillance-capitalism-assault-human-autonomy-digital-privacy>

13 By such initiatives, we especially refer to projects that were part of the “Pontos de Cultura” created by the Brazilian Ministry of Culture in 2010. This programme included intensive work with open source software and tried to put into practice a “digital inclusion” strategy. [https://pt.wikipedia.org/wiki/Pontos\\_de\\_Cultura](https://pt.wikipedia.org/wiki/Pontos_de_Cultura)

14 Find out more about GitLab here: <https://gitlab.com/gitlab-org/gitlab>

15 This includes practical experiences in designing and setting up intranets in Indigenous and rural communities by REDES A.C. (see: <https://www.redesac.org.mx/intranets>), as well as the even broader approach of “community networks”, which focuses on the creation of an enabling environment for communities to connect themselves, as pursued through the local networks initiative by APC and Rhizomatica (see: <https://www.apc.org/en/tags/community-networks>).

translated participatory media making, interculturality, intersectionality and gender perspectives into collaborative online and offline action. Rather than being driven by a theoretical understanding of its usefulness, the collective ideas that underpinned the development of Colmena were practical, and always driven by the question: How could it be a safe and diverse space for all?

Based on this guiding question, and through a collaborative approach, a gender analysis was conducted in parallel to the development of Colmena. This has highlighted the potential for Colmena to proactively promote gender equality. The need for a space to listen and exchange on gender-related issues became vital to the project – it showed that while there was a longing to share experiences and collaborate on gender-related concerns and challenges, there was also a need for a space where the documentation of security and digital rights issues was transparent. For us this meant integrating an intersectional gender perspective into the entire project, and aligning the technical implementation of Colmena in a way that helped to overcome gender-specific barriers.

One result was us creating a safe space as a permanent feature in Colmena. This involved setting up a dedicated “honeycomb” (a closed chat group) for women. The initial idea was developed in more detail in subsequent workshops and conceived as a space where relevant content, workshops and training materials could be shared between women, and where women could communicate openly with each other.

Meanwhile, the media collectives began to mobilise their communication skills around Colmena. They developed translations of the menus and static content of the website, engaged in online debates and held training sessions on the use of free technologies, such as on free/libre software and licences, podcasts, autonomous servers and audio editing. These accompanied the development process of the platform. This proactiveness of media outlets and collectives was vital to the development of Colmena, and helped the developers understand and respond to the needs and visions of the communities that were going to use the media toolbox.

This flexibility is key in a world that is still adjusting to a post-COVID situation. The project is committed to strengthening all communicators who produce content that helps communities flourish. And though we hope that many beehives will join the Colmena project, the open source software is also available to other media outlets, community initiatives and the open source community who want to build alternative digital ecosystems.

## Inclusive co-creation as a key for human-centred and nature-positive technologies

In times when information becomes a matter of sustaining life and care, community radios and media have been shown to have played a central role in responding to the COVID-19 health emergency across the world.<sup>16</sup>

As the Colmena experience demonstrates, digital strategies are important to allow community communicators to operate with safe tools that dialogue with the collective values and practices of their territories.<sup>17</sup> By involving media outlets from Latin America and Africa in the creation of the software, we were able to design a solution (or rather an offer) that is sensitive to shared realities in the global South and ready to be used, modified and improved to suit daily routines.

Undertaking such a journey, one that locates diversity as the starting point, has its own challenges, such as finding the right communication channels that bridge linguistic barriers and time zones, as well as identifying common grounding priorities, needs and desires that can shape a project like Colmena as a “hive” that is meaningful and accessible to all.

Designing a tool that responds to local needs across the world could only have been undertaken as a collective effort. In this sense, the approach of co-creation that was necessary to build Colmena has become a beehive itself: a process-oriented journey rather than a technological solution that is meaningful in the relationships that are woven through the reflections and the collective knowledge created in the testing processes.

One of the key learnings of this dialogue is the need for constant capacity building to make such a collaborative process truly transformative. Related to the great cultural diversity embedded in the initiative, each media outlet brought with it specific weaknesses and strengths. But while in-person training was not possible due to the pandemic, our online approach still turned those differences into a productive force for mutual learning and creation.

Taking one step back from the dialogue with rural and Indigenous communities, Colmena can also be read as an attempt to practically answer how democratic and collaborative governance processes

16 This argument is supported by several case studies worldwide, such as this one from an Indian perspective: Laskar, K. A., & Bhattacharyya, B. (2021). Community radio stations' production responses to COVID-19 pandemic in India. *Media Asia*, 48(4), 243-257. <https://doi.org/10.1080/01296612.2021.1970421>

17 Brock, N., Gager, V., & García Gago, S. (2021, 10 September). Colmena open source software: Community media brave the pandemic with a “beehive”. *DW Akademie*. <https://www.dw.com/en/colmena-open-source-software-community-media-brave-the-pandemic-with-a-beehive/a-59147718>

can be applied to software development. The situated application of free/libre software philosophies and methodologies is a feasible path to follow, and is not restricted to hackers. Instead it is open to collaborative efforts involving diverse participants. It can be essential to promoting open communications systems based on human rights principles, as well as nature-positive digital solutions, and responding to the challenges of maintaining them.<sup>18</sup>

### Action steps

The following advocacy priorities are suggested by the Colmena project:

- Create alternative communication solutions with Indigenous and community-based activists, journalists and radio producers that allow them to share and collaborate meaningfully in the development of those solutions. In this way, these initiatives will contribute to advocacy pushing for the right to communicate in a concrete way
- by showing how the right can be achieved on the ground.
- Build alliances between organisations (media outlets, the free/libre software community, academia, human rights and other civil society organisations) to support community-centred, co-owned infrastructure.
- Support the long journey towards the autonomy and sovereignty of Indigenous and community media through collaborative tools that respond to their own ways of creating, producing, preserving and sharing information, content, languages and stories.
- Reflect on how an intersectional gender approach can be embedded in the technical implementation of the project to overcome gender-specific barriers.
- Explore and promote nature-positive technologies when developing collaborative media tools, even though this is a difficult and challenging task.

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<sup>18</sup> To truly become nature-positive in such a short amount of time was a challenge and remains a “technological debt” for the ongoing development of Colmena. While the lightweight PWA design allows for a broad use of already existing hardware (and even a bit of upcycling), the currently used cloud infrastructure has a negative impact on nature due its carbon emission footprint. Our commitment is to become “carbon zero” in the next 12 months and to further engage in circular economy and upcycling reflections.

## **DIGITAL FUTURES FOR A POST-PANDEMIC WORLD**

Through the lens of the COVID-19 pandemic, this edition of Global Information Society Watch (GISWatch) highlights the different and complex ways in which democracy and human rights are at risk across the globe, and illustrates how fundamental meaningful internet access is to sustainable development.

It includes a series of thematic reports, dealing with, among others, emerging issues in advocacy for access, platformisation, tech colonisation and the dominance of the private sector, internet regulation and governance, privacy and data, new trends in funding internet advocacy, and building a post-pandemic feminist agenda. Alongside these, 36 country and regional reports, the majority from the global South, all offer some indication of how we can begin mapping a shifted terrain.

**GLOBAL INFORMATION SOCIETY WATCH**  
2021-2022 Report  
[www.GISWatch.org](http://www.GISWatch.org)