

# 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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# TUNISIA

## DIGITAL INNOVATION RESCUES TUNISIA FROM THE COVID-19 OUTBREAK – BUT INTRODUCES NEW RIGHTS CONCERNS



### iGmena

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### Introduction

On 10 March 2022, Tunisia had registered 1,017,907 COVID-19 cases, 27,874 deaths and 961,303 people who had recovered.<sup>1</sup> Although the country has successfully contained the first and second waves of the virus, many citizens, as part of the informal workforce of the country which accounts for 50% of the GDP, have found themselves in situations of economic and social difficulties.<sup>2</sup>

Technology has been central in the response to the virus in several government, private sector and civil society initiatives. This has included, as in many other countries, online registration for vaccination. By 8 September 2021, 5,987,855 people had been registered on the Evax.tn platform,<sup>3</sup> which allowed them to book COVID-19 vaccination appointments. While many of these initiatives have brought health care closer to citizens, they also raise potentially unexplored rights issues that need further elaboration.

### Technology-based initiatives introduced during COVID-19

#### COVID-19 contact tracing app

Tunisia launched a contact tracing mobile phone app that identifies and alerts users if they have been in close contact with someone who later reports having contracted COVID-19. The E7mi (“protect me” in English) application, which is available on Android, was developed by a Tunisian startup specialised in digital marketing tools for foreign companies. If a user tests positive for COVID-19, Tunisia’s Observatory of Emerging Diseases contacts other users whose mobile phones have been detected close to the infected user’s device to notify them of the risk.

### Digitising prescriptions

Through the Tunisia Community College Scholarship Programme and the Tunisia Undergraduate Scholarship Programme, nearly 500 Tunisian youth gained valuable experience in the United States and helped digitise prescriptions in coordination with a local COVID-19 task force. Through the system, patient information is sent directly to a doctor’s computer so the doctor can prescribe medication and send the prescription directly to pharmacy staff. Pharmacists can then prepare the medication prior to the patients’ arrival so that patients do not have to stand in long lines and risk exposure to the virus while waiting for their medication.<sup>4</sup>

### Face shields/3D printing technology

The German automotive parts manufacturer Kromberg & Schubert developed face shields using 3D printing technology. The company was able to produce around 30 masks, all of which were donated to the regional hospital in Beja to fight COVID-19.<sup>5</sup>

### Innovation for assessing x-rays

There were three separate projects that allowed for the fast examination of chest x-rays to determine if a patient had COVID-19. iCompass, a deep learning startup, developed a platform using artificial intelligence (AI) for an instant diagnosis of the coronavirus from chest x-rays, allowing rapid screening for potential COVID-19 patients. Meanwhile, Tunisian engineers in collaboration with local civil society organisations created a web-based platform that scans lung x-rays and evaluates whether patients are likely to be suffering from COVID-19. The technology provides a 90% reliable indication of the probability of infection. Similarly, teachers and students at the Tunisian Engineering and Technology Institute developed a web-based platform that examines Ct/XR images using AI with the support of the German development agency GIZ, the Italian Society of Medical Radiology and tech

1 <https://www.worldometers.info/coronavirus/country/tunisia>  
2 Gallien, M. (2018). *Understanding Informal Economies in North Africa: From Law and Order to Social Justice*. Friedrich-Ebert-Stiftung. <https://library.fes.de/pdf-files/iez/14573.pdf>  
3 <https://www.evax.tn/index.html>

4 Belloumi, W., & Cook, C. (2020, 17 June). Supporting COVID-19 relief efforts in Tunisia. *IREX*. <https://www.irex.org/success-story/supporting-covid-19-relief-efforts-tunisia>  
5 Oxford Business Group. (2020, 9 April). Innovation at the heart of the Covid-19 crisis in Tunisia. <https://oxfordbusinessgroup.com/news/innovation-heart-covid-19-crisis-tunisia>

giant IBM.<sup>6</sup> This has been in use since mid-March 2021. Thousands of lung x-rays from both healthy people and COVID-19 patients have been fed into these platforms, allowing AI to learn to recognise the marks of the virus on the lungs.<sup>7</sup>

### *“Jasmin”, the intelligent robot*

Since 10 July 2020, the medical staff of Sahloul University Hospital in the governorate of Sousse have been using “Jasmin”, an intelligent robot made in Tunisia by Enova Robotics and iCompass, the first in Africa. Jasmin was developed as part of the Safe Tunisia Challenge, a competition launched on 17 March 2020 by the Novation City technology park in Sousse in collaboration with the Ministry of Industry and GIZ. The robot reduces and streamlines the workload in the hospital by minimising the interactions of medical staff with patients affected with COVID-19. It uses a triage system to assess patients arriving at the hospital and directing those suspected of having contracted the virus to a COVID-19 unit. Jasmin is equipped with a thermographic camera and can measure the temperatures and oxygen levels of patients. This means that doctors do not have to come into direct contact with patients who may have contracted the virus before they enter care. It also assists doctors in monitoring the state of health of patients after diagnosis.<sup>8</sup> Its interaction with patients is user-friendly and is in the Tunisian dialect.<sup>9</sup>

### *PGuard ground vehicle*

A leading startup in robotics and AI called Enova Robotics created the PGuard ground vehicle robot, which was acquired by the Ministry of Interior to assist with the enforcement of the country’s lockdown rules. The device includes infrared and thermal cameras, an audio system, GPS, and a sound and light alarm system that allows officers to request identification papers and issue verbal warnings to those breaching COVID-19

lockdown rules.<sup>10</sup> The number of PGuard robots deployed by the ministry has not been reported. Some citizens welcomed the initiative, while others said the robot “moved too slowly” to be effective. However, several videos have since appeared on social media showing people being stopped by a PGuard. The PGuard robot can give a preliminary visual diagnosis and use its sensors to measure certain things – and one will soon be working at a hospital in Tunis. In terms of rights concerns with robotic policing, Tunisian citizens were satisfied with the invention that would help minimise physical contact between citizens and the police.<sup>11</sup>

### **New rights challenges and ways of working**

The use of technological innovation has been vital in Tunisia’s fight against COVID-19 in the areas of infection prevention and control, as well as the maintenance of essential health services at the community level with strategies adapted to their local context. There are at least three implications of these developments, the first concerning the intensification of digital rights issues with respect to privacy, the second concerning the use of robotic policing for the first time in Tunisia, and the third related to the potential risks associated with automated health care.

### *Rights implications on privacy*

The use of contact tracing apps, which are often implemented in partnership with the private sector and with few privacy safeguards, have raised privacy concerns in many countries across the world. In Tunisia, the contact tracing mobile phone app E7mi was developed by the Ministry of Health. It tracks the location of citizens registered on the platform and includes other personal data such as phone numbers and national identity card numbers. It does not have clauses that state when it will no longer be broadcasting data from phones and app stores, nor an indication of a limit for the use of data once the app is no longer necessary. Although Tunisia introduced a data protection bill in 2018 to comply with the Council of Europe’s Convention for the Protection of Individuals against Automatic Processing of Personal Data, the bill is no longer a priority for the Tunisian Parliament.<sup>12</sup> Any contact tracing app should incorporate privacy protection measures into the design of services to enhance data security, collection and storage. In Tunisia, companies involved in the design of these platforms should obtain consent

6 Fusco, R., Grassi, R., Granata, V., Setola, S. V., Grassi, F., Cozzi, D., Pecori, B., Izzo, F., & Petrillo, A. (2021). Artificial Intelligence and COVID-19 Using Chest CT Scan and Chest X-ray Images: Machine Learning and Deep Learning Approaches for Diagnosis and Treatment. *Journal of Personalized Medicine*, 11(10). <https://doi.org/10.3390/jpm11100993>

7 AFP. Covid-19: Tunisia researchers use AI, X-rays to create online virus scan tool. *The Star*. <https://www.thestar.com.my/tech/tech-news/2020/04/18/covid-19-tunisia-researchers-use-ai-x-rays-to-create-online-virus-scan-tool>

8 Web Manager Center. (2020, 31 March). « SAFE TUNISIA » le nouveau challenge 100% en ligne de Novation City pour endiguer le COVID-19. <http://www.webmanagercenter.com/2020/03/31/447087/safe%E2%80%AFtunisia-%E2%80%AF%E2%80%AFle-nouveau-challenge-100-en-ligne-de-novation-city-pour-endiguer-le-covid-19>

9 La Presse avec TAP. (2020, 10 July). CHU Sahloul: Le Robot tunisien «Jasmin», allié de taille dans la lutte contre le Covid-19. *La Presse*. <http://lapresse.tn/67762/chu-sahloul-le-robot-tunisien-jasmin-allie-de-taille-dans-la-lutte-contre-le-covid-19>

10 Jawad, R. (2020, 3 April). Coronavirus: Tunisia deploys police robot on lockdown patrol. *BBC*. <https://www.bbc.com/news/world-africa-52148639>

11 Ibid.

12 Samaro, D., & Fatafta, M. (2020, 18 June). COVID-19 contact-tracing apps in MENA: a privacy nightmare. *Access Now*. <https://www.accessnow.org/covid-19-contact-tracing-apps-in-mena-a-privacy-nightmare>

before using consumer data (such as social security numbers, geolocation, or financial and health information) by promoting easy-to-understand privacy notices for citizens to access their data in proportion with the sensitivity of the data and the nature of its use.<sup>13</sup>

### Rights implication of robotic policing

Several issues need to be considered with respect to robotic policing. Worldwide, robotic policing is being taken more seriously, and in 2016 in the United States a robot charged with explosives was used to kill a sniper who had fired into a crowd, killing five police officers.<sup>14</sup> The primary issue is that laws in Tunisia governing public order policing do not address the issue of robotic policing.

The introduction of the PGuard robot is not immune to ethical concerns relating to the use of robots for policing. For instance, robots might have human-like behaviour, but not human consciousness, which is important to ethical policing and decision making during crises. Robots also depend on the trustworthiness of those who design the algorithm for their operation – in this case the state and technical partners. There are also concerns about the impact on future jobs, with the potential for unemployment in the policing sector to increase. Tunisian police using a service robot should also always be able to regulate a robot's autonomy, especially in cases when the consequences of the robot's actions cannot be totally controlled.

Robotic policing systems need be regulated, and issues such as the legal responsibilities and liabilities of parties addressed. Regulations are vital to deal with the potentially serious ethical and operational challenges raised by the removal of human control. Robotic policing requires the cooperation of human subjects to be effective – but this cooperation is unachievable without proper public consultation. Full transparency and meaningful limitations are crucial when it comes to these and other categories of surveillance tools, including independent oversight from specialised civil society organisations and pressure groups.<sup>15</sup>

### Rights implications of automated health care

In Tunisia, which has an advanced medical system and infrastructure, it is easy to imagine a future where

machines will replace doctors with devices that can diagnose and recommend treatment within hours or maybe minutes. The most obvious risk is that AI systems will sometimes be wrong, and that patient injury or other health-care problems may result. If an AI system recommends the wrong drug for a patient, fails to notice a tumour on a radiological scan, or allocates a hospital bed to one patient over another because it predicted wrongly which patient would benefit more, this would result in avoidable patient harm.<sup>16</sup>

Other risks include the difficulty when fragmented and disorganised health data is spread across various data systems in health care. Patients can often change insurance and health care providers frequently, making data acquisition and algorithmic analysis of the data a challenge. Regulations also need to be created to attend to the strict confidentiality and privacy laws required when dealing with medical records, and patients need to properly be informed on the use of their medical data, and provide proper consent for its use.<sup>17</sup>

### Action steps

In light of these challenges, the following action steps are recommended for civil society in Tunisia:

- Civil society organisations need to understand the dangers of infringing privacy through algorithmic bias and how AI tools might affect the people and communities they serve. Civil society can play a vital role in highlighting these challenges and dangers among communities where algorithms are used.
- Civil society organisations should work with policy makers in formulating new laws and regulations designed to govern algorithms that make their use fair, accountable and transparent.
- Civil society should be aware of the potential of robotic policing to create new ethical challenges when implemented in communities. Civil society can tackle this challenge by both leading the debate on how the use of AI in robotic policing can minimise the potential risks associated with its use, and be at the foreground of pushing for proper regulations in this regard.
- Civil society must speak out about the potential dangers of automated health care. This particularly relates to the proper management of medical data, and regulations that govern informed consent for the use of this data.

13 Brennan, M. (2016, 11 August). Mobile App Privacy Considerations. *LexisNexis*. <https://www.lexisnexis.com/authorcenter/the-journal/b/pa/posts/mobile-app-privacy-considerations>

14 Joh, E. (2016, 16 November). Police Robots Need to Be Regulated to Avoid Potential Risks. *The New York Times*. <https://www.nytimes.com/roomfordebate/2016/07/14/what-ethics-should-guide-the-use-of-robots-in-policing/police-robots-need-to-be-regulated-to-avoid-potential-risks>

15 Wareham, M. (2021, 24 March). Don't Arm Robots in Policing: Proposed New York City Law a Model for Regulation. *Human Rights Watch*. <https://www.hrw.org/news/2021/03/24/dont-arm-robots-policing>

16 Nicholson Price, W. (2019, 14 November). Risks and remedies for artificial intelligence in health care. *Brookings*. <https://www.brookings.edu/research/risks-and-remedies-for-artificial-intelligence-in-health-care>.

17 Patel, U. (2020, 22 October). Artificial Intelligence in Healthcare: Top Benefits, Risks and Challenges. *TriState Technology*. <https://www.tristatetechnology.com/blog/artificial-intelligence-in-healthcare-top-benefits-risks-and-challenges>

## **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.

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2021-2022 Report  
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