GovTech Development During COVID-19: How Technologies Have Helped

Special Edition

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Contributors

DEEP KNOWLEDGE ANALYTICS GOVTECH DIVISION

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UAE, Abu Dhabi	Saudi Arabia	Morocco	Switzerland	UAE, Dubai	Germany	Russia/ Kazakhstan	France

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Introduction

Digital technologies have been widely used to support the public-health response to COVID-19, including population surveillance, case identification, contact tracing, and the evaluation of interventions based on mobility data and communication with the public.

The third edition of the GovTech report, developed by the GovTech Division of Deep Knowledge Analytics, considers 14 countries and how technologies helped to fight COVID-19 in these countries. The main goals of the report are to highlight the most effective e-government and GovTech solutions implemented during the COVID-19 pandemic; to consider existing tools and solutions that have been further developed and boosted in response to the pandemic; to determine the importance and role of government authorities in the creation and implementation of GovTech tools; and to consider how e-government and GovTech tools will be used in the post-pandemic world.

Governments can offer a wide range of digital solutions for responding to COVID-19, including mobile apps for virtual citizens', businesses', and other targeted services, chatbots, COVID-19 situation dashboards, tracking systems, and more.
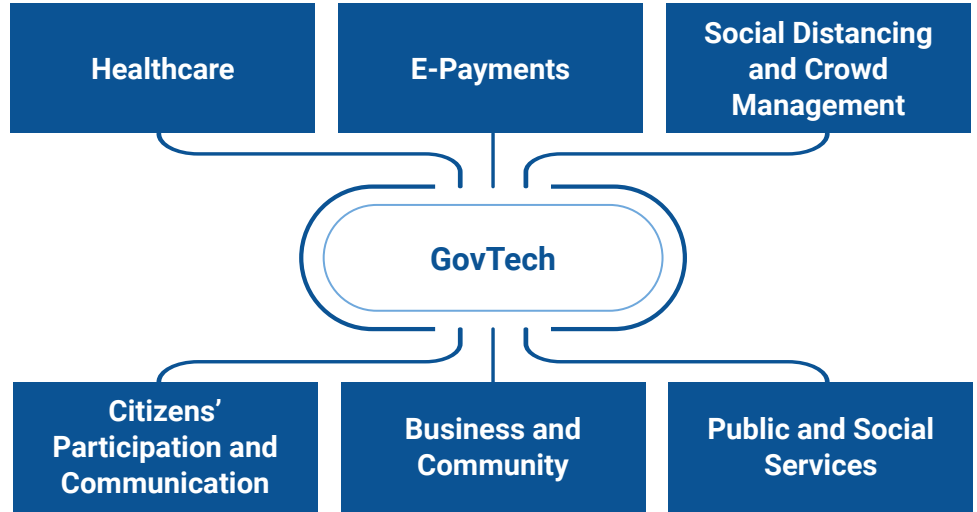
Executive Summary

Methodology

In the course of the study, 14 countries were analyzed in two directions – the digital solutions introduced in the fight against the consequences of the coronavirus, and a comprehensive assessment of macroeconomic indicators and the GovTech-related indices in the context of overall development.

The first one includes qualitative and quantitative indicators, 9 in total, that answer on the questions regarding government steps to respond to COVID-related challenges.

The second assessment includes volume of Gross Domestic Product, volume of Gross Domestic Spending on R&D, Internet access in countries, E-Participation Index and Telecommunication Infrastructure Index by United Nations, Government Effectiveness Index by Global Economy.

Areas where Government Technologies Were Especially Used During COVID-19

Healthcare	E-Payments	Social Distancing and Crowd Management

GovTech

Citizens' Participation and Communication	Business and Community	Public and Social Services

COVID-19 has been a catalyst for the use of new technologies in the public services response to the pandemic. Although governments are at very different stages in their journey of digital transformation, more and more countries are implementing transformation plans. Some are driven by modernization while others are driven by the need to be innovative.

Executive Summary

The pandemic has required swift and effective measures, leading to an increased use by governments of digital technologies to fight the spread of the virus, such as mobile applications installed on smartphones (apps), used for various purposes. This increased interest in new technologies has often been accompanied by a shift towards digital solutions offered by the private sector, public authorities working in cooperation with companies of the digital market.

Technologies used during the crisis have helped address a broad spectrum of problems, supporting public health efforts, public communication, and economic and social policies. For some countries, the pandemic helped to upgrade existing digital solutions, but for others it showed the need to adopt such solutions.

Worldwide government IT investments are shifting from devices and data centers to software and IT services, which together are projected to account for nearly half of government IT investments in 2021.

To meet the needs of the pandemic, governments accelerated their digital journey along three major dimensions:
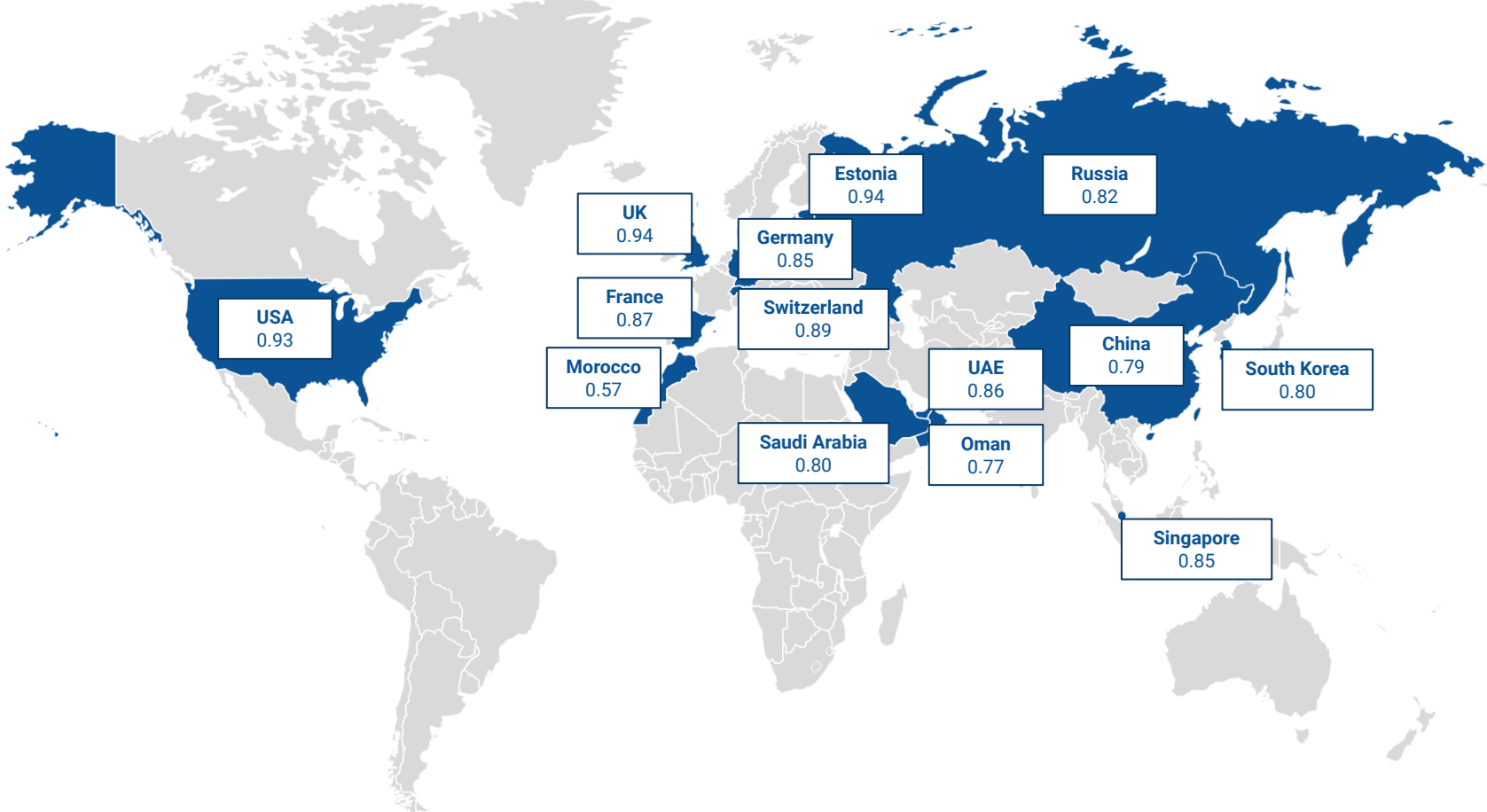
Scaling digital infrastructure

- Ramping up artificial intelligence and automation
- Harnessing cloud solutions
- Building a "whole of government" digital architecture

Creating a more digital public workforce

Investing in citizen connectivity

E-Government Index 2020 in Observed Countries

USA
0.93

UK
0.94

France
0.87

Morocco
0.57

Estonia
0.94

Germany
0.85

Switzerland
0.89

Saudi Arabia
0.80

Russia
0.82

UAE
0.86

Oman
0.77

China
0.79

South Korea
0.80

Singapore
0.85

Comparison of GovTech Development by Countries in terms of COVID-19

	China	Estonia	France	Germany	Morocco	Oman	Russia	Saudi Arabia	Singapore	South Korea	Switzer-land	UAE	UK	USA
Usage of social media	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Official website regarding COVID-19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prevention of misinformation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engagement of citizens in GovTech improvement	X	✓	✓	✓	✓	✓	X	✓	✓	X	✓	✓	X	✓
Initiatives to support elderly people	✓	✓	✓	X	X	✓	X	X	✓	X	✓	✓	X	✓
Budget for further digital transformation	$1.6T	$66.5M	$8.4B	$40.36**	$4.92M	N/A	N/A	$11B*	$1B	$15B est.	N/A	$932M	$0.7B	$1.2B
Budget for COVID-19 resilience package	N/A	$1.2B	$17.7B	$3.7B	$1.12B	N/A	$27B est.	N/A	$11B	$29.2B est.	$27.0B	$15.5B	$485B	$1.9T
Availability of Digital Transformation Plan	✓	✓	✓	✓	✓	✓	X	✓	✓	X	✓	✓	✓	✓
Cybersecurity initiatives	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

China

Country's Highlights*

$14,722.7B GDP	**2.2%** Gross Domestic Spending on R&D
0.2/2.5 Government Effectiveness Index	**9.6/10** E-Participation Index
7.4/10 Telecommunication Infrastructure Index	**70%** Internet Coverage

The government identified the strategic importance of introducing e-government back in the early 2000s. Since then, China has made significant advancement in establishment online public services and e-participation increase. In addition, to promote policy-making and e-government development, big data has been utilized by authorities. These strategies of usage cutting-edge technologies have also helped fight the COVID-19 pandemic.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Controlling the spread of epidemics
- Overseeing disease prevention and treatment
- Reforming medical institutions
- Overseeing state hospitals

Ministry of Health

衛生署
Department of Health

- Executing health policies and statutory functions
- Publishing information regarding COVID-19 and treatment protocols
- Promoting health and disease prevention

- Formulating health policies
- Publishing information regarding COVID-19 and treatment protocols
- Coordinating the national efforts to combat the COVID-19 pandemic

**National Health Commission of PRC**

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibility..

China: Citizens' Participation and Communication

Hong Kong: The Government set up an **online dashboard website** aimed at disseminating detailed reporting and information about COVID-19. The online dashboard website presents the latest COVID-19 situation covering the number of confirmed cases, discharged cases, and number of deaths with location details across Hong Kong.

COVID-19 Online Dashboard Website

Hong Kong: AIA Hong Kong has launched a COVID-19 alert service through its **AIA Connect mobile app**. This allows registered users (both customers and non-customers of the insurer) to receive alerts regarding COVID-19 cases in different districts throughout Hong Kong.

AIA Hong Kong
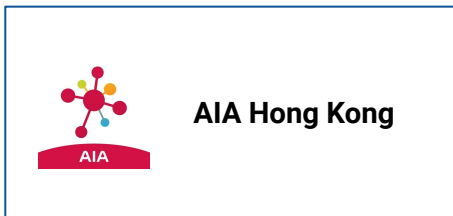
China Daily together with State Council Information Office launched a special website **COVID-19.chinadaily** that provide real-time information about the overall trends of the pandemic.

COVID-19 China Daily
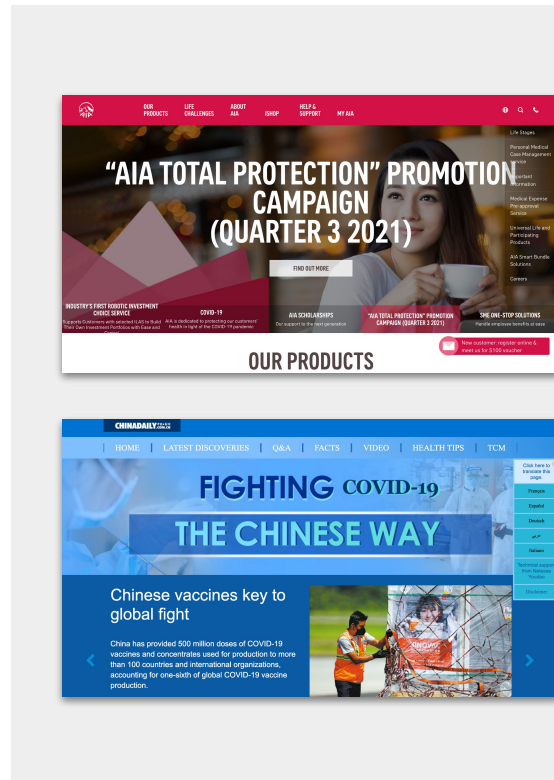
China: Healthcare Initiatives

MOH

衛生署
Department of Health

On the website of **National Health Commission of the PRC**, the Government published information regarding COVID-19 in the country, diagnosis and treatment protocol for COVID-19, infographics about vaccination, etc.

A state-owned enterprise – Chinese Electronic Technology corporation (CETC) – developed a **WeChat** mini program ('Close Contact Detector') that allows citizens to self-check their risk level.

Hong Kong: **Electronic Health Record Sharing System** (eHealth) is an electronic platform that aims to build up free and lifelong e-health records for public. It enables COVID-19 patients to self-monitor and transmit vital signs to health monitors through a mobile app.

Hong Kong: The Government of Hong Kong has developed **StayHomeSafe Mobile App** User Guide. The Government required each new arrival to download the app and gave them a paired wristband that uses geofencing technology.

China: Business and Community Initiatives

居安抗疫
Stay Home Safe

Hong Kong: **StayHomeSave** - a mobile application introduced by the Hong Kong Special Administrative Region Government to monitor whether persons under compulsory quarantine are staying in their designated places of quarantine.
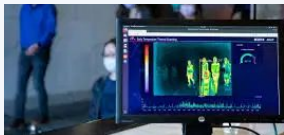
Hong Kong: Hong Kong launched **temperature screening** in crowded places to stop the spread of COVID-19.

Business & Community

China's major telecommunications companies partnered with Internet companies such as Alibaba to develop a **QR color code system**. The system uses telecom data to reveal and track everyone's risk level, based on where the person has traveled and with whom they have been in contact. Chinese citizens need to show their QR code before entering any public area.

China: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

China uses **LBS (location-based) services** and big data analytics for high-risk cases. Local authorities collect and consolidate all the latest information of people moving with confirmed infection. This data helped local authorities quickly identify people who may have been in close contact with patients.

The software flying the **drones** made in Shenzhen is being rewritten to adapt their applications for disease detection and crowd management. The vehicles use thermal sensors, high-definition zoom lenses, loudspeakers and chemical spray jets for disinfecting large areas.

People in China signed up through Ant's popular wallet app, **Alipay**, and were assigned a color code — green, yellow or red — that indicated their health status. The system is already in use in 200 cities and is being rolled out nationwide.

Public and Social Services

Platforms such as **Dianping.com** and **Mafengwo.cn** aggregate information such as service availability, opening hours, and travel restrictions in all areas of high interest.

The **WeDoctor** Global Consultation and Prevention Center (GCPC) provides online health enquiry service, psychological support, prevention guidelines and real-time pandemic reports. Free service provided by doctors from China is available 24/7 for people around the world.

Hong Kong: The Government launched the **LeaveHomeSafe mobile app** to provide members of the public with a convenient digital tool for recording the time of their visits to different venues and taxi rides.

China: E-Education and E-Payments

E-Education

The **Ministry of Education** partnered with the **Ministry of Industry and Information Technology** in order to mobilize all major telecom service providers to boost internet connectivity service for online education, to upgrade the bandwidth of major online education service platforms, especially the capacity of the National Cloud-Platform for Educational Resources and Public Service in serving millions of visitors simultaneously and to adopt flexible and appropriate methodologies to facilitate learning.

E-Payments

In April 2020, **electronic Chinese yuan (e-CNY)** pilot programs launched in four cities. Users can hold e-CNY in a mobile phone "e-wallet" app, and the ability to purchase e-CNY is currently set to be possible through China's six large state-owned banks.

Local governments in China were distributing free digital coupons on mobile payment platforms like **Alipay** and **WeChat Pay** to encourage immediate spending.

Hong Kong: The upcoming roll-out of the city's US$4.6 billion **voucher scheme** is intended to push residents towards embracing electronic payments and lay the groundwork for a digital transformation.
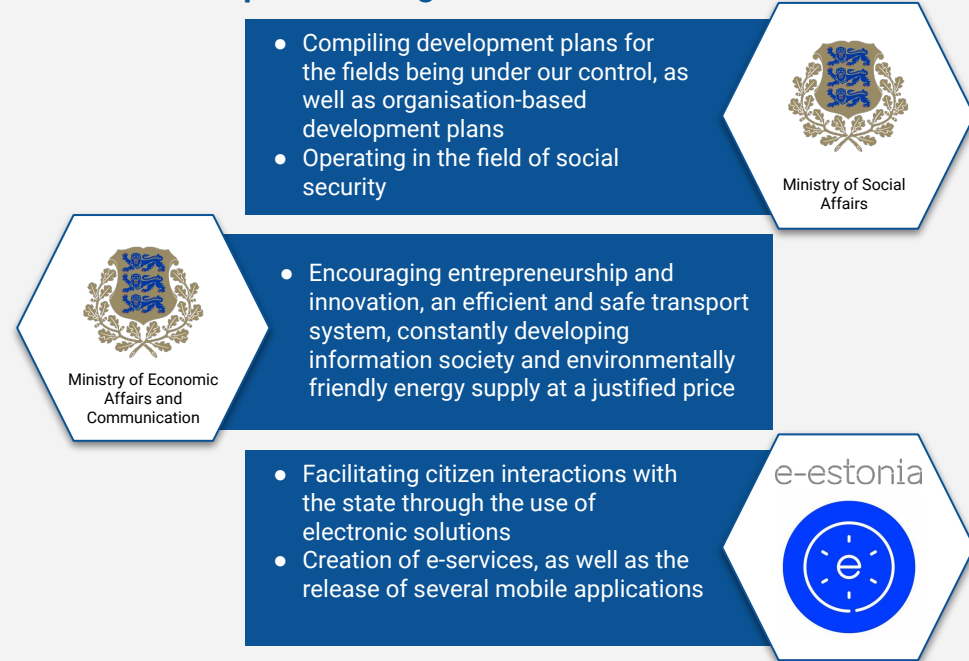
Estonia

Country's Highlights*

$31.0B
GDP

1.6%
Gross Domestic Spending on R&D

1.2/2.5
Government Effectiveness Index

10/10
E-Participation Index

9.2/10
Telecommunication Infrastructure Index

90%
Internet Coverage

Estonia continues to perform well on digital public services and very well on the human capital indicators. During the COVID-19, Estonia has also shown great leadership in making available a number of e-solutions to minimise contagion and to support the health system, including an AI-powered chatbot, digital platforms, monitoring and forecasting risks; remote medical care and lots more.

*Last Available Data

Selected Ministries and Agencies that Participated in GovTech Development during COVID-19*

- Compiling development plans for the fields being under our control, as well as organisation-based development plans
- Operating in the field of social security

Ministry of Social Affairs

- Encouraging entrepreneurship and innovation, an efficient and safe transport system, constantly developing information society and environmentally friendly energy supply at a justified price

Ministry of Economic Affairs and Communication

- Facilitating citizen interactions with the state through the use of electronic solutions
- Creation of e-services, as well as the release of several mobile applications

e-estonia

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibility.

Source: Trading Economics, OECD, Global Economy, World Bank, United Nations, Transparency, WIPO, e-Estonia, Media Overview

Estonia: Citizens' Participation and Communication

Suve is an automated chatbot, whose main task is to make sure that everyone living in or visiting Estonia got their questions answered from official sources. During the emergency situation that existed in Estonia in Spring 2020, Suve was integrated into several public websites and helped provide accurate and trustworthy information in English, Estonian and Russian.
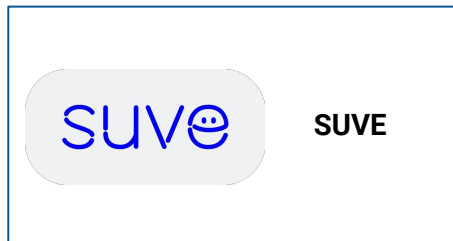
Health Board - the website provides information about the coronavirus, its prevention, cure and spread. People can also read about the personal protective equipment. The main goal of the portal is to make Estonian people be aware of the health and living environment that supports health in the country.

Kriis.ee - is a COVID-19 crisis webpage set up by the Estonian Government. It provides general information about the emergency situation, government commission and covers such covid matters as symptoms, prevention measures, testing, vaccination, protection and restriction measures.

SUVE

Health Board

COVID-19 Crisis Webpage
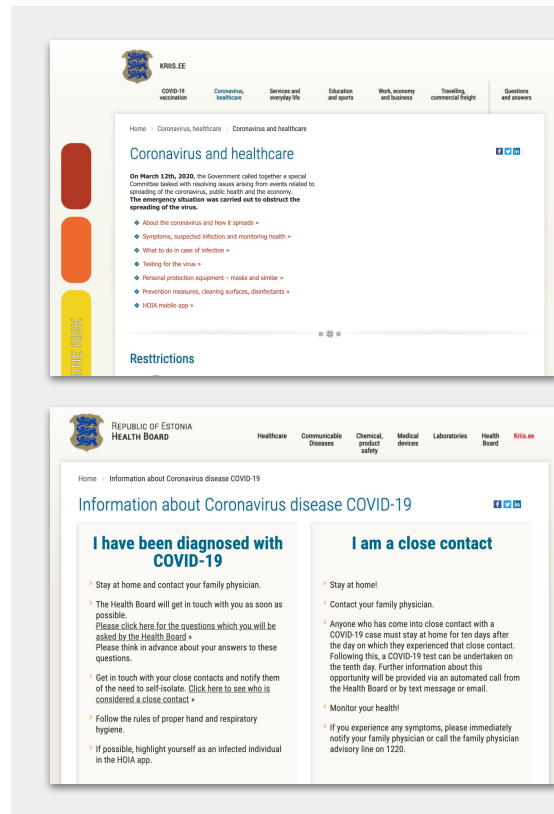
Estonia: Healthcare Initiatives

REPUBLIC OF ESTONIA
HEALTH BOARD

E-Patient Portal - The Patient Portal allows citizens to view personal medical data, submit statements of intention, appoint representatives, and act on behalf of the persons who have appointed someone as their representative.

Zelos was launched in autumn 2019 to make task delegation easier for event and festival managers. The appearance of COVID-19 pushed the Zelos team to create Zelos Community Helpline that matches volunteers with people needing assistance.

e-Ambulance is a solution that can detect and position the phone call for the ambulance within 30 seconds and send the emergency ambulance to the necessary point fast. A doctor can use a patient's ID code to read time-critical information, such as blood type, allergies, recent treatments, etc

One of the key innovations in Estonia's cutting-edge e-Healthcare system, **e-Prescription**, is a centralized paperless system for issuing and handling medical prescriptions. When a doctor prescribes medicine using the system, he or she does it electronically, with the aid of an online form.

Estonia: Business and Community Initiatives

The e-Business Register allows you to register a new company over the internet, change data in the business register, file annual reports, manage the members list for political parties or make detailed inquires about other companies.

Share Force One is a platform helping companies share the workforce. It brings together two types of companies - companies that have employees currently without work and companies that are temporarily in need of additional workforce. To help the employers more efficiently, Share Force One is also cooperating with the Estonian Unemployment Insurance Fund.

Business & Community

Estonia is the first country to offer **e-Residency**, a government-issued digital identity and status that provides access to Estonia's transparent business environment. E-resident entrepreneurs from all over the world can start an EU-based company and manage business from anywhere, entirely online.

The state launched a **digital solution for monitoring the stocks and prognosis of personal protective means**, created during the hackathon The Global Hack, which simplifies and make more comprehensive, the collection of information.

Estonia: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

HOIA is an application to inform the contacts of those infected with the virus and to provide them with instructions if they have been in close contact with someone who tests positive. The aim is to alert those exposed to seek treatment and undertake preventative measures.

Medical consultation help via video bridge by Viveo Health. Medical consultation via video bridge helps control the spread of COVID-19 in the waiting rooms of healthcare institutions.

Automatic sick leave letter admission by TEHIK. Launched in the Patient Portal, an automatic sick leave feature helps patients temporarily open sick leave themselves to manage the burden on doctors and nurses.

Public and Social Services

Estonia has been first in converting public services into flexible e-solutions for its citizens and e-residents. The implementation of **the Government Cloud** solution provides a foundation for public e-services and solutions, which makes Estonia the most digital.

The Estonian Ministry of Economic Affairs and Communications has launched a fully online hackathon **Hack the Crisis** to offer solutions on how to use tech for crisis response and deal with the post-crisis era.

The platform **Veriff** was launched for remote notaries' verification. Veriff's identity verification th technology enables notarial acts to be carried out at Estonia's foreign foreign representations without physically visiting a notary's office.

Estonia: E-Education and E-Payments

E-Payments

e-Tax is the electronic tax filing system. Each year, around 98% of all tax declarations in Estonia are filed electronically. Using a secure ID, a taxpayer logs onto the system, reviews their data in pre-filled forms, makes any necessary changes, and approves the declaration form.

E-Banking. Banks not only embraced e-ID, encouraging customers to use their ID cards for secure transactions, even giving away free card readers, they also helped move the population online by developing and offering high-quality internet banking services. Today, over 99% of all banking transactions in Estonia are carried out online.
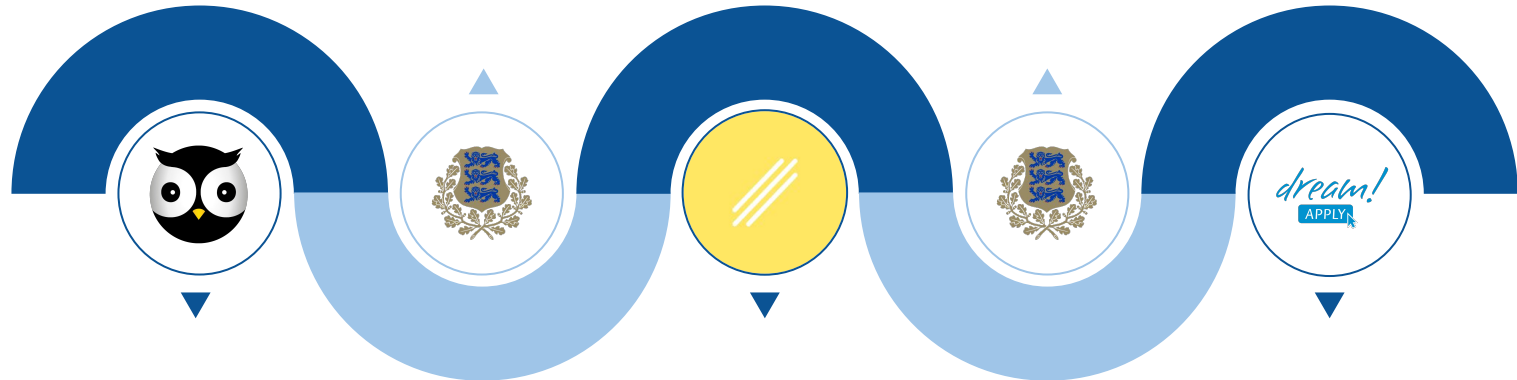
eKool is a school management tool bringing together students and their families, schools and supervisory bodies. It is easily accessible web-based school management system that has made traditional paper format class journals obsolete in Estonia.

Clanbeat - a virtual teachers' room which is offering its services for free until the end of the school year, and will organize webinars to help schools engender strong virtual communities among the school staff.

DreamApply - a European-leading online student admission solution., which is launching a rapidly deployable (within two to three days) e-admission & remote work system for higher education institutions.
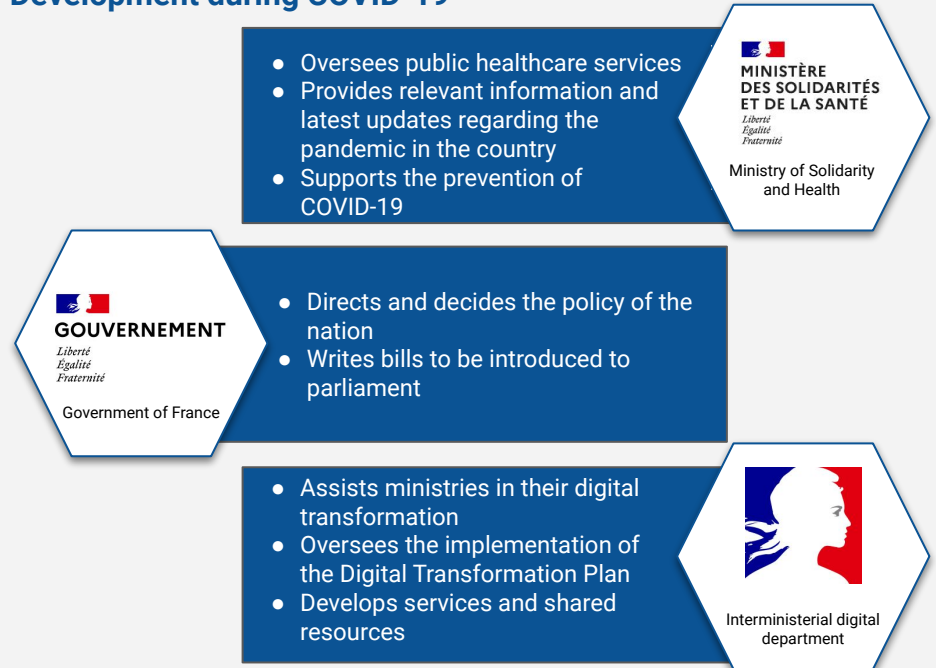
E-Education

France

Country's Highlights*

$2,603.0B GDP	**2.2%** Gross Domestic Spending on R&D
1.6/2.5 Government Effectiveness Index	**9.0/10** E-Participation Index
8.7/10 Telecommunication Infrastructure Index	**83%** Internet Coverage

In 2014, France became the first EU country in digital administration. It intends to accelerate its online transformation to further simplify formalities for individuals and businesses, and to make public services more efficient and responsive. In recognition of COVID-19, France has undertaken a number of initiatives to accelerate digital transformation, including providing digital tools and services for businesses, educators, healthcare providers, and citizens.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Oversees public healthcare services
- Provides relevant information and latest updates regarding the pandemic in the country
- Supports the prevention of COVID-19

MINISTÈRE DES SOLIDARITÉS ET DE LA SANTÉ
 Liberté Égalité Fraternité
 Ministry of Solidarity and Health

- Directs and decides the policy of the nation
- Writes bills to be introduced to parliament

GOUVERNEMENT
 Liberté Égalité Fraternité
 Government of France

- Assists ministries in their digital transformation
- Oversees the implementation of the Digital Transformation Plan
- Develops services and shared resources

Interministerial digital department

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

# France: Citizens' Participation and Communication

The **COVID-19 dashboard** provides day-to-day information about COVID-19 cases, deaths, hospital data, vaccination monitoring, vaccine logistics, business aid, etc. All data published on the dashboard can be downloaded on the platform of public data.

COVID-19 Dashboard

The **information site** available on government.fr presents data relating to the COVID-19 epidemic in France. It was put online in order to meet the information needs of citizens in terms of transparency on the evolution of the coronavirus pandemic in France. This website was developed at the instigation of Etalab and with the collaboration of civil society.

COVID-19 Information

A **chatbot** dedicated to answering citizens' questions about COVID-19 on Facebook Messenger was created and implemented. A similar chatbot was implemented on WhatsApp. An automatic notification system was created via the Chrome browser to notify of changes in the government's official instructions.
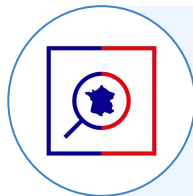
Chatbot in messengers
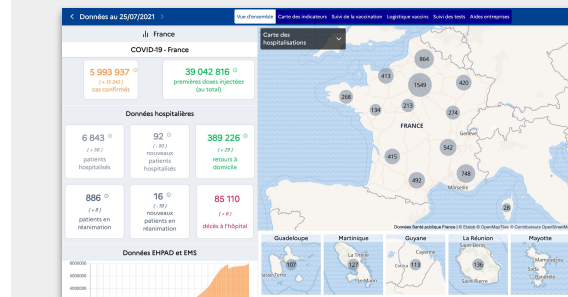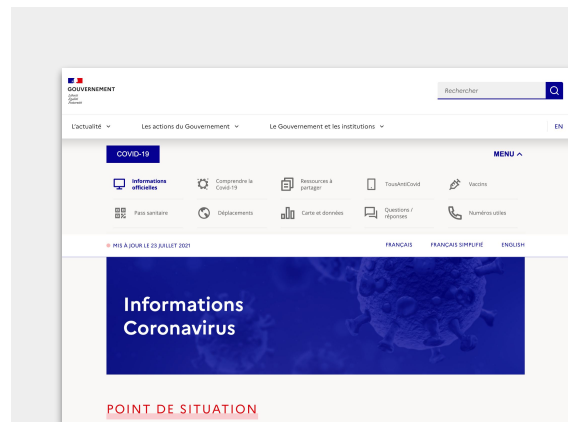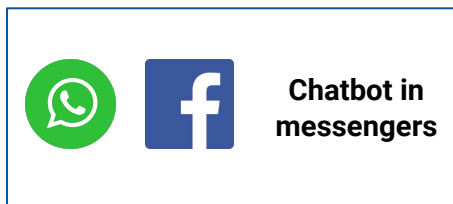
France: Healthcare Initiatives

MINISTÈRE DES SOLIDARITÉS ET DE LA SANTÉ

Liberté
Égalité
Fraternité

In order to facilitate access to virological tests, the Ministry of Solidarity and Health offers an **interactive map** showing citizens and residents the laboratories and sampling points around them.

The **TousAntiCovid application** allows citizens to warn all people who have been near a person who has tested positive so that they can isolate themselves (so as not to transmit the virus in turn if they have been infected).
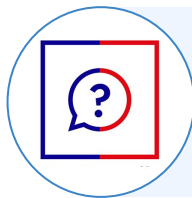
To know the behavior adapted to each individual situation, the Ministry of Solidarity and Health set up **MesConseilsCovid**, which gives personalized advice to act against the virus, depending on the situation and health of each one.

Santé.fr is a portal of the public health information service. It is a project led by the delegation to the Public Health Information Service within the Ministry of Solidarity and Health, in partnership with regional health agencies, public health agencies and institutions.

France: Business and Community Initiatives

Business & Community

The **Tchap project** was created as a new open source encrypted communication tool for French public agents in order to improve information dissemination and ensure the security of the French government communication network.

To simplify and secure access to administrative procedures for residents, in May 2020 the government encouraged private companies to test the integration of **FranceConnect**. It aims to determine the sectors of activity that would benefit from offering their users connection via FranceConnect.

The **WebConf** is a free cross-platform instant video conferencing application. This service is intended primarily for government agents, who are the only ones who can start the webconference.

Offered by the Interministerial digital department (DINUM), the **Osmose platform** allows agents of the State and its public establishments to lead a professional community online.

France: E-Education, Public and Social Services

E-Education

Since the start of the health crisis, the National Center for Distance Education (CNED) has made its **"My class at home"** service available to French establishments abroad and to all establishments in France. As an extension of the actions carried out within the framework of this educational continuity, the "Learning Holidays" operation is being renewed by the Ministry of National Education, Youth and Sports during the summer of 2021. The service consists of three platforms: **Primary School, Middle School** and **High School**.

Public and Social Services

e · contrôle

The **E-control system** simplifies the exchange of documents between an inspection body and the inspected organisations. The tool is used for all types of audits by the Court of Auditors. It can also be used by other control bodies.

#JeVeuxAider

Beta.gouv.fr and the Ministry of National Education developed a **civic reserve platform** to help match and connect public organizations or associations in need of volunteers during the crisis with citizens willing to help.

GOVi

Developed by **Win Solutions**, the GOVi platform has the ability to monitor, assess, rate, and ultimately improve governmental and non-governmental services. Real-time data updates allow the measurement and management of departmental or government performance as a whole.

France: Win Solutions

Headquarters - Paris, France

Win Solutions is a new generation of solutions providers with two principal satitscore: creativity and technology which leads to continuum of innovation. WIN Lab allow the company to test the new technologies or solutions, to validate viability before implementing.

Mission: Support government entities, companies and entrepreneurs to achieve their highest potential through proprietary methods of design thinking and develop operations by leveraging our existing deep technology platform in Machine Learning & Artificial Intelligence.

Win Solutions' Key Showcases

Public Eye

Crawling tool that crawls web and social media network to gather data and cluster it based on advanced indexing and machine learning technologies.

Caytlin

Virtual assistant for students. It reads their behavior and provides a backend web interface displaying analytical reports.

GOVi

Intelligent government platform to monitor the performance of the ministries. Firstly, it was developed for MENA region.

Dawwer

Platform to enhance the urban experience of visitors and residents. It will allow special user interaction with each of the category items.
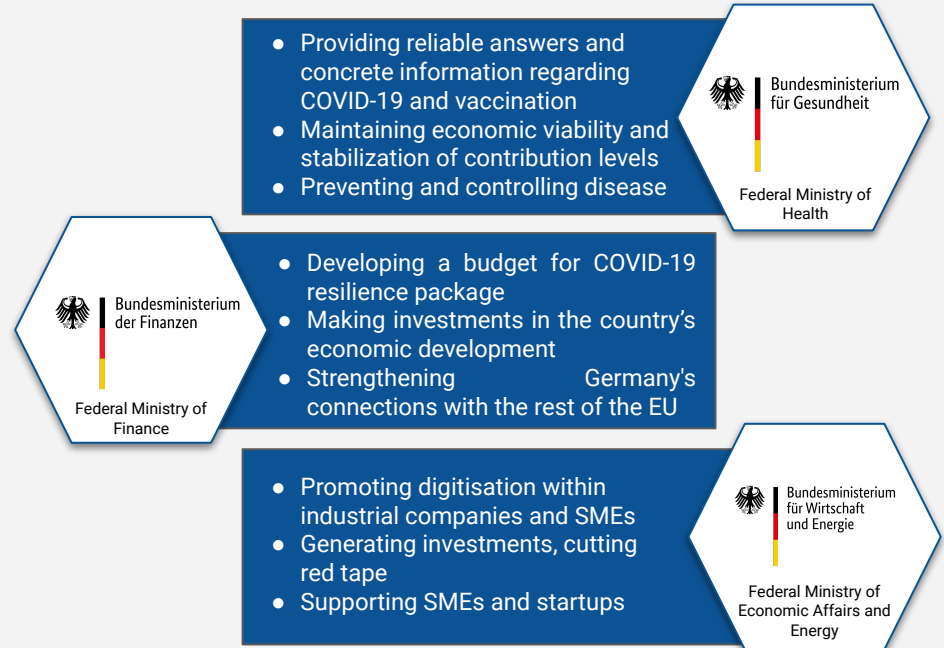
Germany

Country's Highlights*

$3,806.1B GDP	**3.2%** Gross Domestic Spending on R&D
1.6/2.5 Government Effectiveness Index	**7.5/10** E-Participation Index
8.9/10 Telecommunication Infrastructure Index	**88%** Internet Coverage

Although the public sector is lagging behind the private sector in implementing complex machineries, B2B-solutions, and much more, the German government has embarked on a large-scale reform of its public service delivery mode to be digitally transformed by 2022. Still, there are many cultural and bureaucratic barriers that cause lack of innovative capacity and public acceptance of digital solutions.

*Last Available Data

Main Ministries That Participated in GovTech Development During COVID-19*

- Providing reliable answers and concrete information regarding COVID-19 and vaccination
- Maintaining economic viability and stabilization of contribution levels
- Preventing and controlling disease

Bundesministerium für Gesundheit
Federal Ministry of Health

- Developing a budget for COVID-19 resilience package
- Making investments in the country's economic development
- Strengthening Germany's connections with the rest of the EU

Bundesministerium der Finanzen
Federal Ministry of Finance

- Promoting digitisation within industrial companies and SMEs
- Generating investments, cutting red tape
- Supporting SMEs and startups

Bundesministerium für Wirtschaft und Energie
Federal Ministry of Economic Affairs and Energy

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibility.

Source: Trading Economics, OECD, Global Economy, World Bank, United Nations, Transparency, Media Overview

Germany: Citizens' Participation and Communication

Dashboard Deutschland – a new open data platform, operated by the Federal Statistical Office, Destatis, concentrates central data on COVID-19, with the goal of offering up-to-date information for the evaluation of the current economic situation, German recovery packages, the labour market, mobility and living.

Together against Corona – information portal by the Federal Ministry of Health, bundles together all relevant information in regards to the COVID-19 pandemic. Two aspects guide the platform: "Getting information" and "Taking action".

GovMind has developed Insights Service for GovTech, where users get the insights about GovTech. Basic functions are searchable directory of GovTech solutions, diverse filter functions, and visualisation tools for the presentation and interpretation of data.

GHA – The German Health Alliance is an initiative of the Federation of German Industries (BDI). The GHA has its own COVID Information Portal, providing information from BDI, Federal Ministries, and different scientific institutions and platforms.
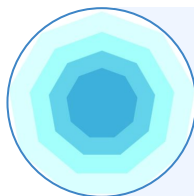
Dashboard Deutschland

Together Against Corona

GovMind Insights Service

GHA COVID Information Portal
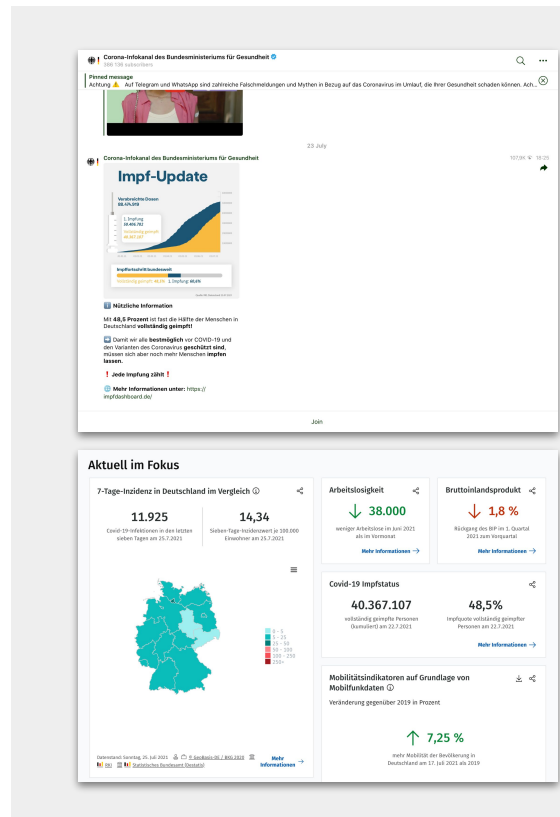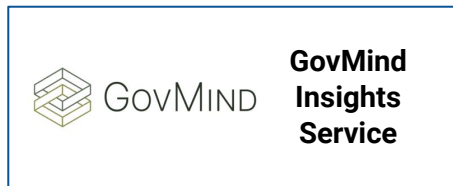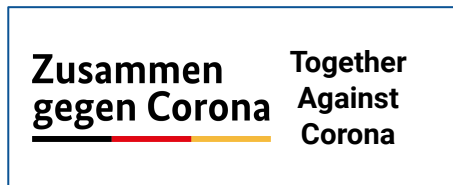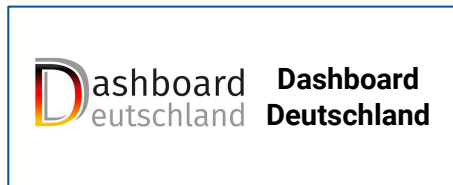
Germany: Healthcare Initiatives

Bundesministerium
für Gesundheit

Federal Ministry of Health

The Corona-Datenspende (Corona Data Donation) app gathers vital signs from volunteers wearing smartwatches or fitness trackers – including pulse, temperature and sleep - to analyse whether they are experiencing flu-like illness.

German health officials introduced that country's version of the digital COVID-19 vaccination pass (**CovPass**), a smartphone app that allows fully vaccinated Germans a simple way to prove their status.
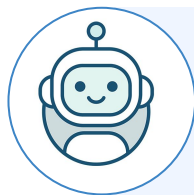
C-19 Chatbot is the first chatbot that the federal government has issued for providing reliable information on COVID-19. It collects data from 10 different federal agencies in order to support citizens with questions on the pandemic in a text-based dialogue scenario.

Source: Bundesregierung, German Digital Technologies, VoaNews, Nma.vc, Reuters.com

Germany: Business and Community Initiatives

Initiative **Neue Qualität der Arbeit**, mandated by BMAS, bundles a lot of current information as well as tips and offers for practice in the COVID-19 focus – so that companies, employees and the self-employed can get through the pandemic in the best possible way.

The **WirVsVirus Hackaton** was a digital participation process initiated by the Federal Government together with 7 digital and innovation bodies. It aimed at generating innovative solutions to the COVID-19 crisis thanks to civil society participation during short online gatherings in 20-22 March 2020.

Business & Community

With the **#SmartDevelopmentHack** initiative, BMZ - the German Federal Ministry for Economic Cooperation and Development supports innovative digital solutions to overcome the challenges of coronavirus in partner countries. The hackathon is under the patronage of the BMZ together with the EU Commission, other EU member states, tech companies and civil society.

Germany: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

The **Corona-Warn-App** is a consumer-based application that supports contact tracing. It helps to determine whether a person has had any contact with an infected one which could result in a risk of catching the virus. The app is a service by the Federal Government, which was developed by SAP and Deutsche Telekom.

luca ensures a data protection-compliant encryption of data, undertakes the obligation to record contact data, relieves the health authorities through digital, lean, and integrated processes to enable efficient and complete tracing.

Public and Social Services

The **federal portal** is a central platform on which citizens, companies and organizations can find and apply for all the information and administrative services of the authorities in Germany available online.

AusweisApp2 is software that people install on computers, smartphones or tablets in order to identify themselves online with identity cards, electronic residence permits or eID cards.

Wheelmap.org is an online, worldwide map for finding and marking wheelchair accessible places, developed by the German non-profit organisation Sozialhelden e.V.

Germany: E-Education and E-Payments

E-Education

MINT Alliance aims to uphold the interest of pupils in MINT subjects, even at home. Thereby, online material is provided that connects the digital and physical world by giving ideas on how to experiment and experience natural science within the restrictions of a home environment.

The **#SemesterHack** initiative, the nationwide online hackathon on digital higher education – organised HFD, the KI Campus and the DAAD. The aim of the Hackathon was to work out ideas and solutions for the challenges of the digital summer semester within 36 hours.

HPI Schul-Cloud. In order to support digital classrooms where physical lessons cannot be held, capacities for the HPI school cloud have been expanded. Within the cloud, teachers can share material and pupils can fulfil tasks, individually or as a team.
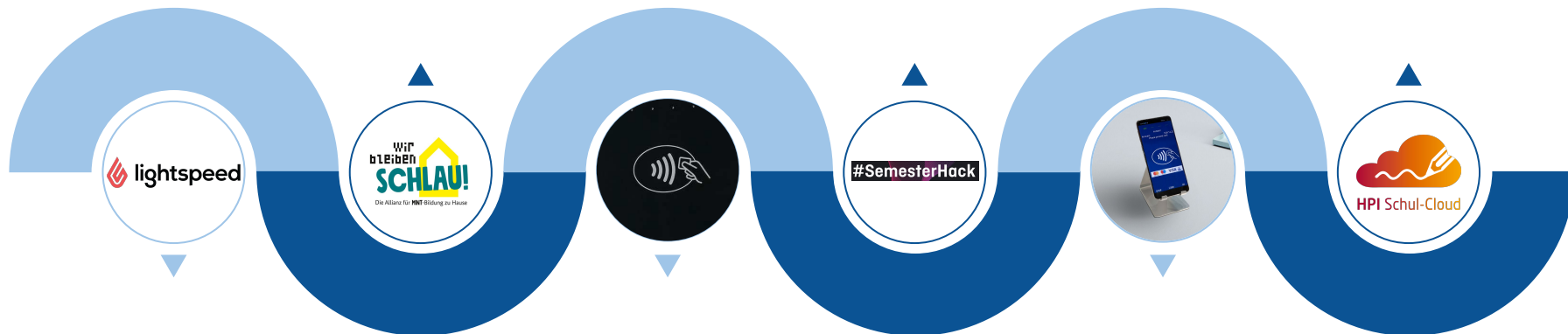
Lightspeed (formerly Gastrofix) has developed a digital support package – including card reader for contactless payment, digital menu with ordering function, and a customer database for restauranteurs to offer out-of-home services during the ban on restaurant opening.

KarL4 is a contactless payment terminal for girocard from Garz & Fricke. KarL4 is a contactless-only reader (COR). It uses Near Field Communication (NFC) to transfer data.

The German Banking Industry Committee has approved the piloting of a Digital Terminal without PIN Pad. The **PhonePOS** payment terminal app is able to process contactless girocard payments.

E-Payments

GovMind

Headquarters - Berlin, Germany

GovMind is a technology company from Berlin that systematicly analyse and create data-driven knowledge about the GovTech universe. On this basis, it develops scalable knowledge offerings that make GovTech understandable and accessible, such as the GovMind Insights Service.

Mission: Enable public administrations to make use of the full potential of GovTech – and thus contribute to the digital transformation of state and governments.

GovMind Key Technology Assets

Insights Service

The GovMind Insights Service is a central tool for a comprehensive understanding of the completely decoded GovTech universe. Users get exactly the insights about GovTech they need.

PUBLIC Germany

GovMind was selected by PUBLIC Germany as one of the leading companies to drive forward digital government in Germany.

GovMind Key Principles

Topic focus
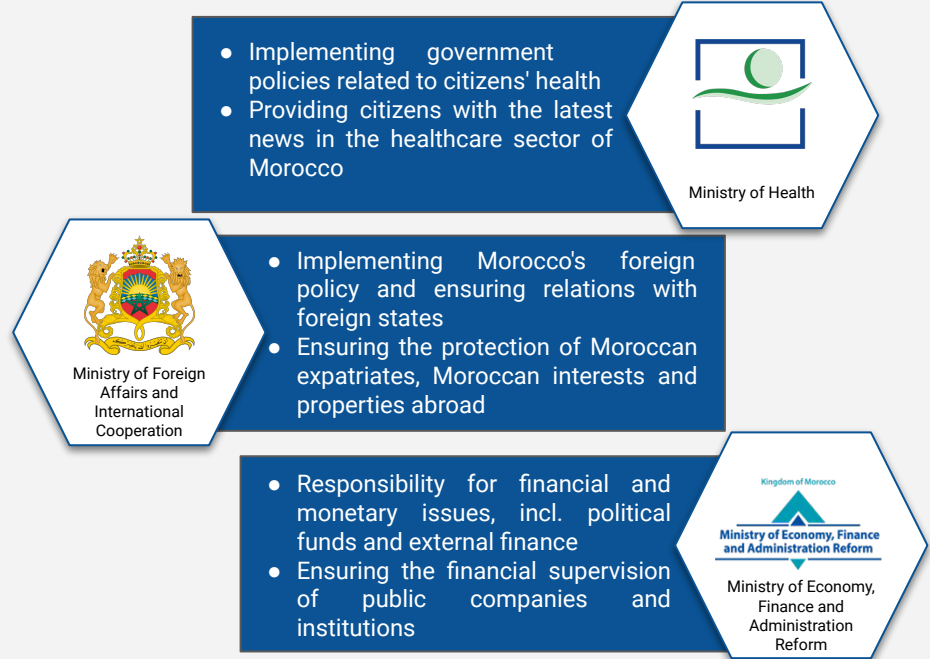
Primacy of data

Network of experts

Morocco

Country's Highlights*

$112.9B
GDP

-0.1/2.5
Government Effectiveness Index

5.1/10
E-Participation Index

5.8/10
Telecommunication Infrastructure Index

5.2/10
Online Service Index

96%
Internet Coverage

The information technology sector in Morocco has been witnessing significant expansion. Morocco is the first country in North Africa to install a 4G network. Significant increases in the number of internet users in Morocco are evidence of the success of efforts by the government to establish a digital economy as a gateway towards sustainable development. ICT developments will continue to bridge national divides and cement Morocco's position.

*Last Available Data

Main Ministries that Participated in GovTech Development during COVID-19*

- Implementing government policies related to citizens' health
- Providing citizens with the latest news in the healthcare sector of Morocco

Ministry of Health

- Implementing Morocco's foreign policy and ensuring relations with foreign states
- Ensuring the protection of Moroccan expatriates, Moroccan interests and properties abroad

Ministry of Foreign Affairs and International Cooperation

- Responsibility for financial and monetary issues, incl. political funds and external finance
- Ensuring the financial supervision of public companies and institutions

Kingdom of Morocco
Ministry of Economy, Finance and Administration Reform

Ministry of Economy, Finance and Administration Reform

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

Source: Trading Economics, OECD, Global Economy, World Bank, United Nations, Transparency, Media Overview

# Morocco: Citizens' Participation and Communication

COVID-19 Official Website, launched by the Ministry of Health, provides information on COVID-19. It contains data and statistics relating to the epidemiological situation in Morocco through an interactive map showing new COVID-19 confirmed cases throughout the various regions and cities of the country. It also contains details on medical consultation centers and hospital services on the national territory.

The French-Moroccan start-up **Dakibot unveiled a new free chatbot** providing users with automatic answers in Moroccan Arabic to questions concerning the coronavirus. The answers provided are based on information from the Moroccan Ministry of Health and the WHO.

The Ministry of Health provides relevant and up-to-date information regarding the epidemiological situation in the country, bulletins and recent news on social media accounts such as **Twitter** and **Facebook**.

COVID-19 Official Website

COVID-19 chatbot

Social media
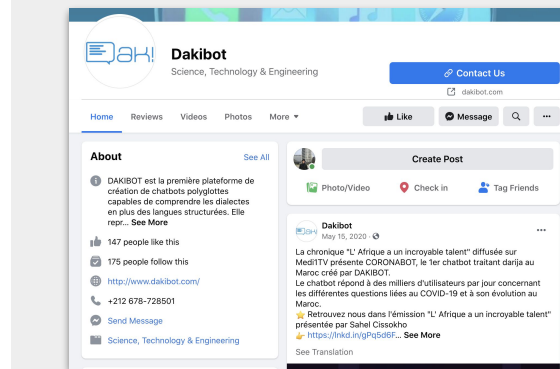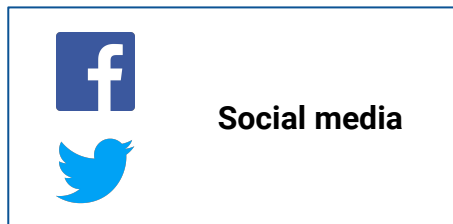
Morocco: Healthcare Initiatives

Ministry of Health

'Wiqaytna', an app, based on Bluetooth technology, whose use is voluntary, notifies its users in the event of prolonged physical proximity with another user who is positive for Coronavirus in the last 21 days after contact. The teams of the Ministry of Health carry out an assessment of the risk of exposure.

Digital Vaccination Certificates available after receiving the second dose. To download the proof, the individual has to visit an online portal **liqahcorona.ma** (available in French and Arabic).

A group of Moroccan doctors and engineers recently launched an initial version of the **intelligent mask** for automatic remote detection of the virus (MIDAD), which also serves as protective gear.

A digital medical respiratory system invented by **EMSI**, which aims to ensure proper medical follow-up for COVID-19 patients. The respiratory system sends data such as pressure and breath frequency to doctors without exposing them to infection.

Morocco: Business and Community Initiatives

A Moroccan citizen has invented a machine that is able to disinfect the human body within seconds. Abdallah Ayache's invention is a very cylindrical-shaped portal in which spinning tubes spray disinfecting products on the person who enters.

Business & Community

Morocco and Luxembourg have signed a Memorandum of Understanding to cooperate on digital transition projects in the areas of e-government, digital inclusion, and infrastructure.

Trambot, a chatbot launched by RATP Dev Casablanca to inform and guide passengers during the COVID-19 crisis. The intelligent robot is available 24/7 on the Casa Tramway website and its Facebook page.

ADD sets up a Smart Factory - a model digital factory in order to disseminate the best practices of Industry 4.0 and to support the digital transformation of industrial SMEs.

Morocco: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

Welcomesafely.ma platform has been put at the service of tourist accommodation operators to accompany and assist them in the process of bringing them into compliance with the health standards.

For disease monitoring and tracking purposes, the government has classified certain areas in the country as Zone-1 or Zone-2 regions, based on the local level of COVID-19 activity. In Zone-1 regions, authorities have eased restrictions due to lower disease activity. Zone-2 areas are those where authorities have eased only some restrictions; individuals may not travel outside their municipalities of residence without a special permit.

Public and Social Services

The "ServicePublic" application is a service of the **Service-Public.ma**, the leading Moroccan government portal, specializing in the dissemination of information on administrative procedures and procedures.

'**Idarati Map**' - an app allowing the geolocation of public services on the map of Morocco, which facilitates users' access to the addresses of places of completion of administrative procedures and procedures.

Dakibot, French-Moroccan startup, made available a free chatbot that provides automatic answers in Moroccan Arabic to coronavirus-related questions. The answers provided are based on information from the WHO and the Moroccan Ministry of Health.

Morocco: E-Education and E-Payments

E-Education

Telmidtice is a platform to support and develop distance education. The Ministry of National Education addresses to primary and secondary school pupils and students that the latter will provide a set of digital resources in the form of videos and summaries in addition to online exercises.

ABHATOO is a platform launched by the National Documentation Centre providing educational content by subject area addressing different grade levels in accordance with the national curricula.

TaalimTice is a collection of videos by subject area provided by the Ministry of Education. It was launched before COVID-19; however, during the pandemic it was updated and became very useful.
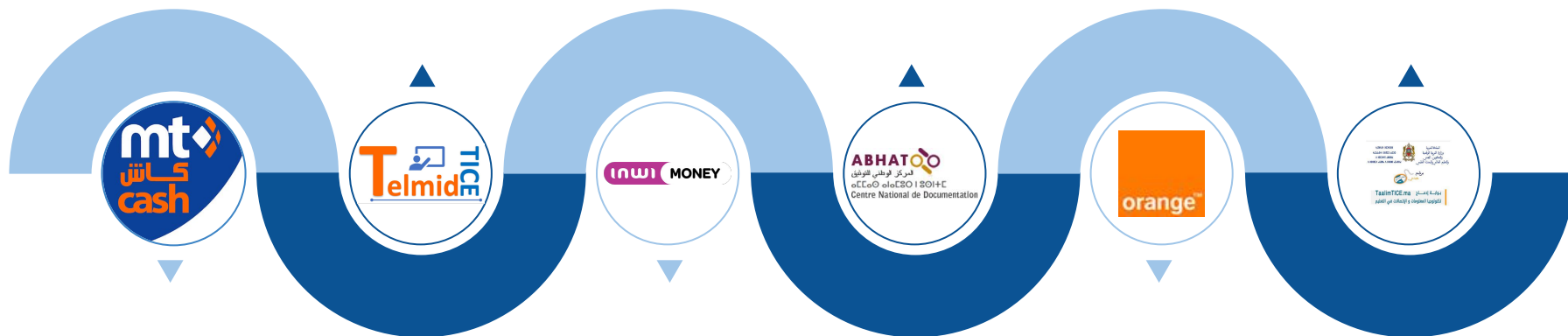
In June 2020, telco Maroc Telecom launched a new mobile money application, **MT Cash**, allowing users to perform bill payments, mobile top-ups, funds transfers, and money withdrawals. MT Cash is an intuitive, transparent application with an attractive design.

Inwi Money allows users to make bill payments, mobile top-ups, funds transfers, and money withdrawals. Since its launch, Inwi has expanded its mobile financial services with international money transfers in September 2020.

Telco Orange Morocco launched its mobile money service, **Orange Money**, in March 2020, having received approval from the Bank Al Maghrib in summer 2019. The service enables users to make mobile payments and transfer money via smartphones.
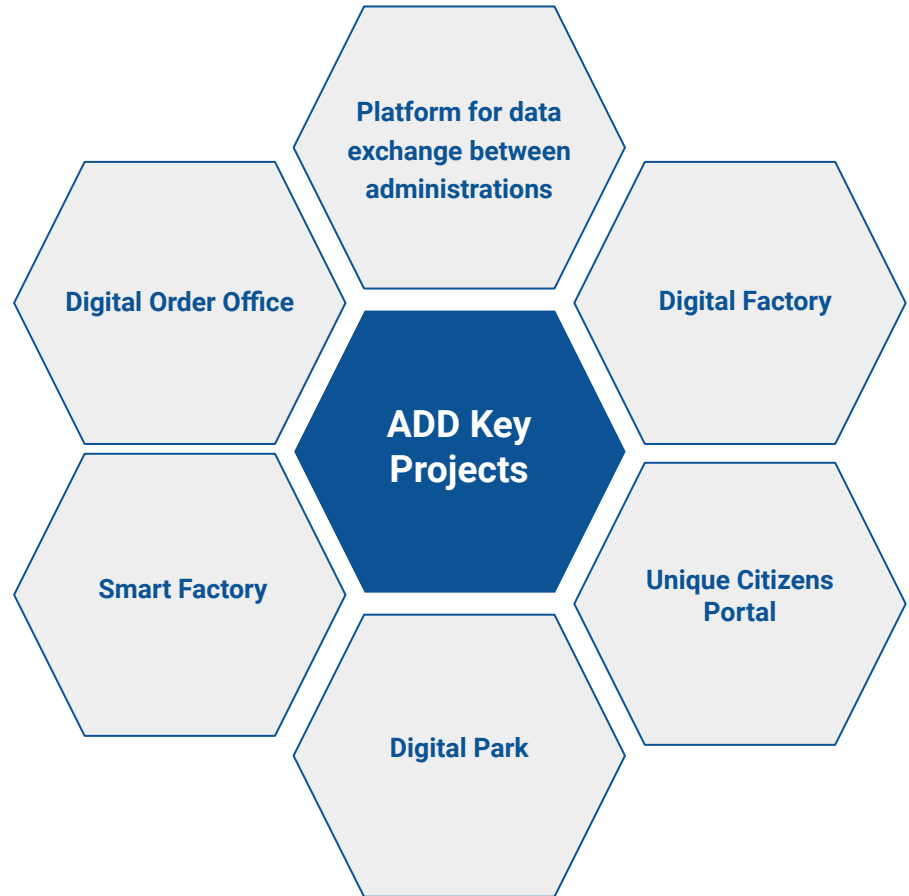
E-Payments

Morocco: ADD

Headquarters - Rabat, Morocco

The **Digital Development Agency (ADD)** is responsible for implementing the State's strategy in terms of digital development and promoting the distribution digital tools and the development of their use among citizens. It aim to structure the digital ecosystem and bring about the emergence of real operators in the digital economy.

Mission: Ensure on behalf of the State, the implementation of the development strategy, promotion and investment incentive in the field of digital development, as well as to propose to the Government the general orientations to be followed in terms of digital development.
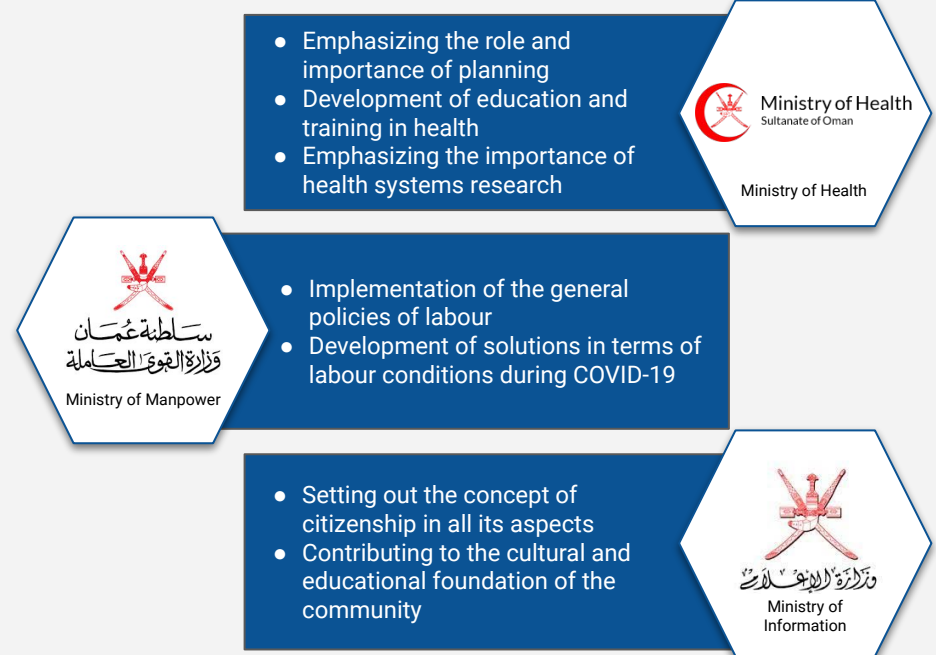
Platform for data exchange between administrations

Digital Order Office

Digital Factory

ADD Key Projects

Smart Factory

Unique Citizens Portal

Digital Park

Oman

Country's Highlights*

$76.3B
GDP

0.3/2.5
Government Effectiveness Index

8.3/10
E-Participation Index

7.0/10
Telecommunication Infrastructure Index

8.5/10
Online Service Index

92%
Internet Coverage

Oman has established the Government Innovation Initiative aimed to support innovation and creativity in government entities fulfilling this by using unconventional patterns and emerging technologies such as AI, Blockchain, IoT, Cloud Computing, Virtual Reality applications that are considered a paradigm shift in supporting advanced governmental performance. The pandemic has also boosted implementation of new innovative solutions.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Emphasizing the role and importance of planning
- Development of education and training in health
- Emphasizing the importance of health systems research

Ministry of Health
Sultanate of Oman

Ministry of Health

- Implementation of the general policies of labour
- Development of solutions in terms of labour conditions during COVID-19

سلطنة عُمان
وزارة القوى العاملة
Ministry of Manpower

- Setting out the concept of citizenship in all its aspects
- Contributing to the cultural and educational foundation of the community

وزارة الإعلام
Ministry of Information

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

Oman: Citizens' Participation and Communication

Oman vs. COVID-19 is a national campaign that aims to curb the spread of COVID-19 in the sultanate through promoting awareness among citizens and residents. The campaign includes designing and managing high-quality content published in 10 languages and local dialects.

Oman vs. COVID-19
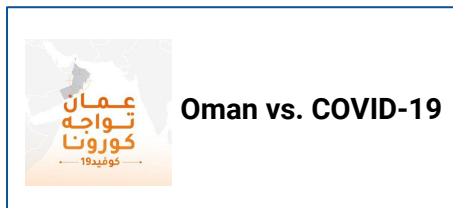
On the **official website of the Ministry of Health** is published complete and reliable information on the spread of coronavirus in Oman along with steps to combat the infection, statistics and guidelines of necessary measures. In addition, the Ministry dhas eveloped a public health education section where citizens can find videos on different COVID-19 matters.

Ministry of Health website

The **Royal Oman Police** has been using drones to disseminate the critical message of avoiding public spaces and to instruct citizens and residents to stay at home and avoid stepping out unless absolutely necessary.

Royal Oman Police drones

Oman: Healthcare Initiatives
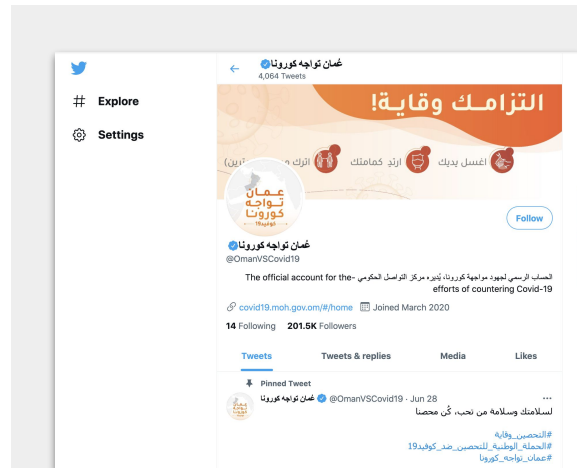
Ministry of Health
Sultanate of Oman
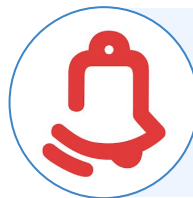
Tarassud Plus is an integrated platform which enhances the Ministry of Health's current monitoring system by diagnosing, following up, and tracking the medical condition of individuals infected with COVID-19, who are under quarantine, by using artificial intelligence technology and advanced tracking technologies.

The **Shifa app** is developed by the Ministry of Health to provide all nationals and foreign residents of the Sultanate of Oman access to their personal health information.

eSehaty app compliments eHealth Portal from Ministry of Health by bringing the portal's e-services to citizens' and residents' mobile devices in Sultanate of Oman. eSehaty includes e-services provided on eHealth Portal for patients, citizens and residents.

Barwa app is a correspondence system of the Ministry of Health. An application that helps all MOH staff in the Sultanate of Oman. Transmitter readings, construction and replay are allowed.

Oman: Business and Community Initiatives
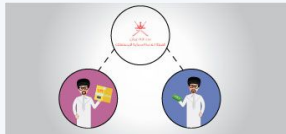
Tawasul system is an integrated platform that depends on direct e-communi- cation between suppliers and consumers in an interactive manner to solve the issue between both parties and decide the status of the complaint.

Business & Community

The **official app for the Ministry of Manpower** upholds a service of searching job opportunities announced by business organisations for national jobseekers. Employers can view details of the company. The app enables residents to view details of their labor cards.

The **Ooredoo Oman App** can perform a range of actions. It can order prepaid and postpaid SIM cards, migrate from Shababiah prepaid to Shahry postpaid, pay bills (fixed and mobile) and more.

The **Customs Bayan system** allows traders to apply and obtain any required permits, often in a matter of seconds.

Source: Apple Store, Omanuna, Google Play Store, Customs of Oman

Oman: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

HMushrif is an app for containing the spread of COVID-19. It offers a variety of features to ensure compliance of isolated individuals to guidelines set by the Ministry and an advanced contact tracing which utilizes Tarassud+ app.

From 29 March 2021, the Sultanate of Oman has started accepted Hotel Bookings for COVID19 Quarantine only thru their online website platform Known as **Emushrif**.

Safe & Sound is a family safety mobile app that provides real-time location services and a parental controls functionality to give parents peace of mind.

Public and Social Services

The **Citizen Services 'Enjaz'** application of the Ministry of Regional Municipalities and Water Resources allows citizens to submit requests related to technical, health and water services. The app also provides the Ministry with the latest news.

The **Baladiyeti app** helps to manage users' transactions with Muscat Municipality for better follow-up and up-to-date information.

Wareed platform facilitates home delivery of medicines to elderly people. As a family-centered society caregivers in Oman tend to be family members who care for their elders or other dependants such as their ill children.

Oman: E-Education and E-Payments

E-Education

The Ministry of Education and the National Bank of Oman have joined forces to launch an **e-Library platform**. This collaboration supports the national efforts of e-Learning in response to the school closures caused by the COVID-19 pandemic.

E-stemazone is an online platform for Science, Technology, Engineering, Mathematics, and Arts which is operated through a Learning Management System (LMS). It is a new addition to the existing Stemazone program to help children learn STEAM subjects from homes.

Educational platform is an application that contains an educational platform for students, teachers, and also for parents where the student, through the platform, can follow lessons through Classroom.
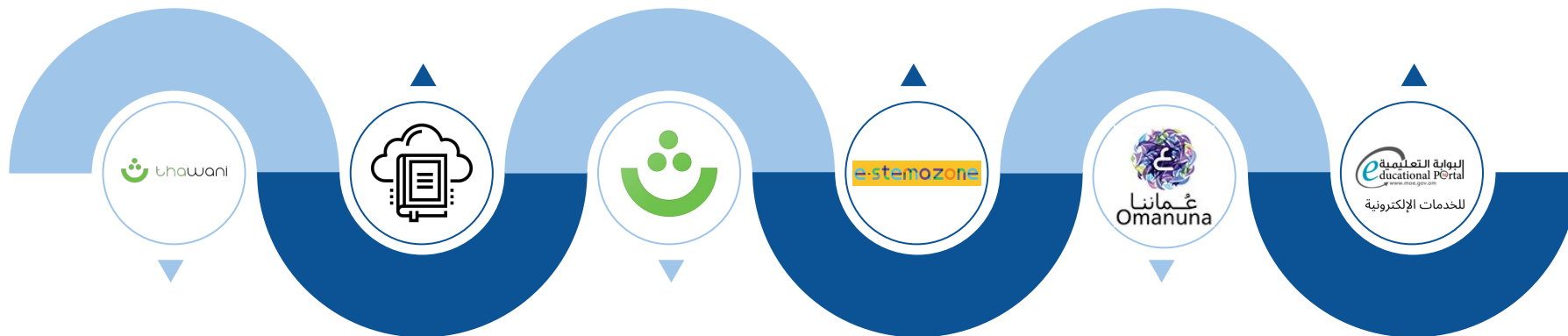
In 2020, Omani smart payment solutions provider **Thawani Technologies** launched the Mojab Virtual Wallet, in addition to smoother registration and the ability to distinguish bank cards.

Thawani 2.0 App is the first Omani mobile payment application that allows people to perform transactions in a smart, simple and secure way.

The National ePayment Gateway is an operational component of the e-government infrastructure as it ensures a secure online payment process. It allows online payment for shopping and services for the public.
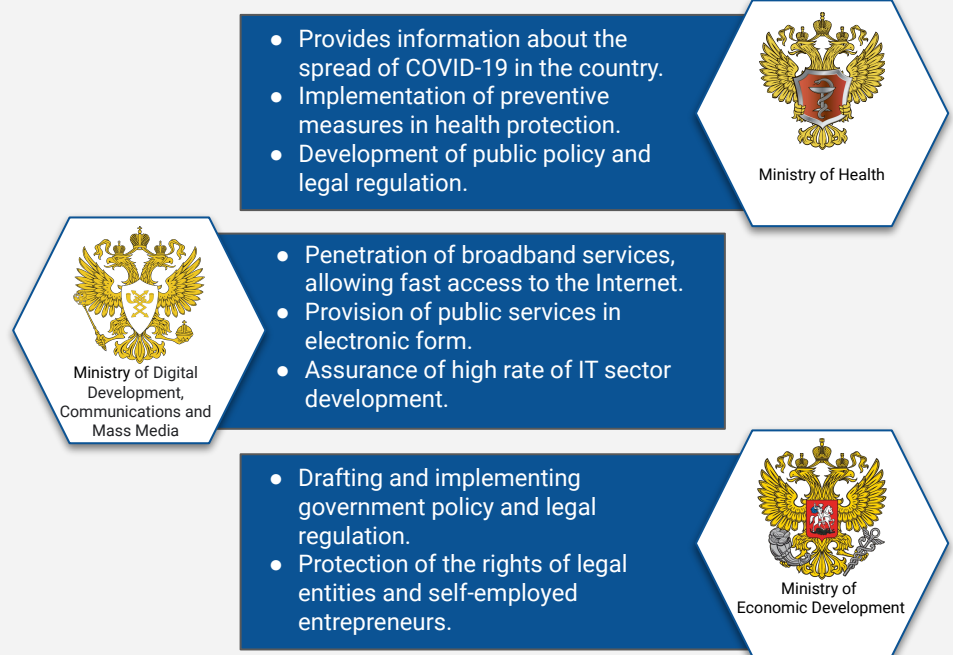
E-Payments

Russian Federation

Country's Highlights*

$1,483.5B
GDP

1.0%
Gross Domestic Spending on R&D

0.2/2.5
Government Effectiveness Index

8.7/10
E-Participation Index

7.7/10
Telecommunication Infrastructure Index

83%
Internet Coverage

In 2020, the topic of digital transformation has finally moved to the strategic agenda of the country and business. Over the past year, significant changes have occurred in this area: all federal executive bodies have appointed Chief Digital Transformation Officer and a series of projects on the use of artificial intelligence in the activities of a number of federal executive bodies has started.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Provides information about the spread of COVID-19 in the country.
- Implementation of preventive measures in health protection.
- Development of public policy and legal regulation.

Ministry of Health

- Penetration of broadband services, allowing fast access to the Internet.
- Provision of public services in electronic form.
- Assurance of high rate of IT sector development.

Ministry of Digital Development, Communications and Mass Media

- Drafting and implementing government policy and legal regulation.
- Protection of the rights of legal entities and self-employed entrepreneurs.

Ministry of Economic Development

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibility.

Source: Trading Economics, OECD, Global Economy, World Bank, United Nations, Transparency, WIPO, Media Overview

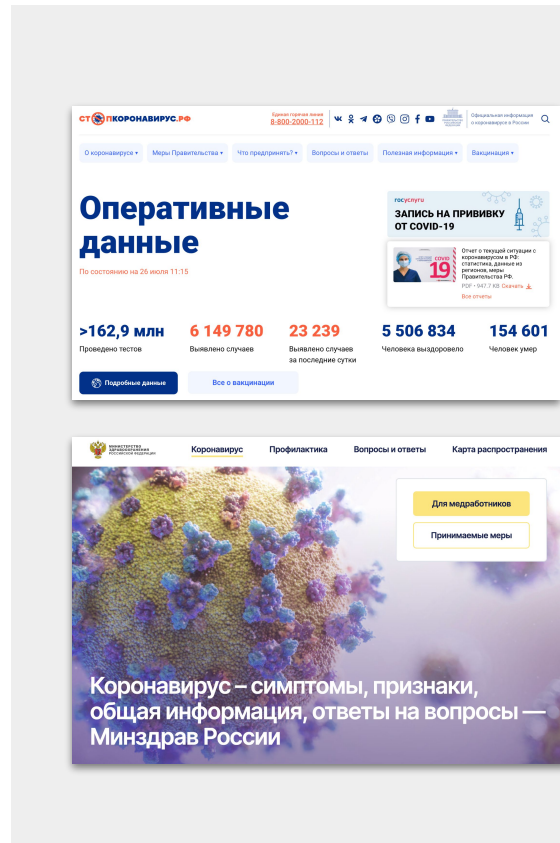# Russian Federation: Citizens' Participation and Communication

Ministry of Healthcare of the Russian Federation launched a chatbot in messengers **WhatsApp** and **ICQ New** (@minzdravbot, @covidbot), to provide COVID-19-related information 24/7. It is used as an alternative to a telephone helpline.

WhatsApp and ICQ New chatbots
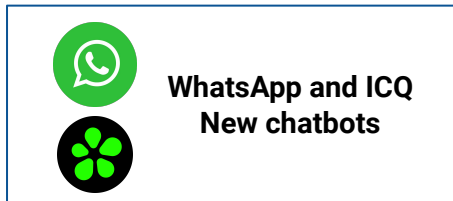
COVID-19 Information Centre provides complete and reliable information on the Coronavirus spread in Russia and steps to combat the infection, develops response measures for the authorities to provide, refutes fake information, and transmits recommendations to the regions based on positive experience in combating COVID-19 in Moscow.

COVID-19 Information Centre
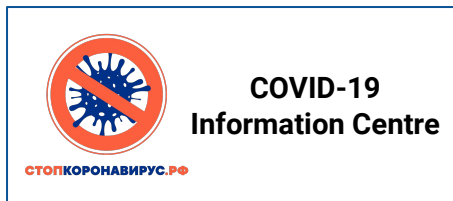
The official COVID-19 page **Ministry of Health of the Russian Federation** publishes the number of coronavirus tests performed, the total official number of cases in Russia, the number of recovered, general recommendations and answers to questions on COVID-19.

Ministry of Health of the Russian Federation

Коронавирус – симптомы, признаки, общая информация, ответы на вопросы — Минздрав России

Russian Federation: Healthcare Initiatives

Ministry of Health

The electronic medical chart was launched in 2020. People in Moscow are now able to access results of medical tests, including COVID-19 immunity, as well as information about doctor appointments and calling ambulances. Such information can be obtained at **mos.ru** or with the **IMIAS.INFO** mobile app. It can all be used to sign for a PCR and antibodies test.

All Moscow medical institutions have joined IMIAS. In addition, a **telemedicine centre** opened in 2020 as part of this system. AI became an efficient helper for doctors: today additional services that process medical images from CT, mammography and X-rays are being tested.

Electronic Medical Records (EMR) are electronic replacements for traditional paper based patient records. EMR's provide real-time records that make information available instantly and securely to medical practitioners and administrative staff when they need it.

Russian Federation: Business and Community Initiatives

As part of 'Moscow Helps!', **Small Business Subsidies** project was launched, which was designed to provide entrepreneurs with the ability to receive information and advice, apply for a subsidy from the department as part of 'one-stop shop' service.

The **check-in system with QR codes** was introduced for entertainment establishments, which helped to continue the work of the industry and warn visitors about possible contact with a confirmed carriers of COVID-19.

Business & Community

#CloudMTS | IT-GRAD

President-Service (diversified company in the field of comprehensive service for government bodies, organisations and individuals) placed part of its own infrastructure in the **IT-GRAD IaaS cloud**. The IT-GRAD cloud contains the official representation of the enterprise, the websites of individual divisions, including service booking systems and online cash registers.

mos.ru

The **system of digital passes** to travel around the city on personal and public transport became an indispensable tool to counter the COVID-19 spread. It helped to increase social distancing among people living in Moscow, flatten the illness' curve and thus lower the burden on the healthcare system.

Russian Federation: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

A **Social Monitoring mobile app** was developed for people with confirmed COVID-19 tests. It was designed for those who developed mild symptoms or no symptoms and who were treated at home. The service allows the city to monitor compliance with quarantine rules.

The '**Gosuslugi.Covid tracker**' **app**, developed by the Ministry of Digital Development of the Russian Federation allows users to learn about possible contacts with people who have been diagnosed with coronavirus, using the Exposure Notification technology developed by Apple and Google.

Stopcoronavirus. My contacts is the contact-tracing app, which relies on technologies developed by Apple and Google, is designed to track nearby mobile devices and warn the user if they have been within 10 meters of someone who has been diagnosed with COVID-19.
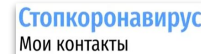
Public and Social Services

Vse.Online is online information service that is offering more than 500 and services for a comfortable life in self-insulation (including services for remote work, groceries delivery and professional development).

Public Services Portal allows citizens to apply for medical leave without visiting a hospital, grants and other forms of financial support announced by the government, an emergency flight to get back home from abroad.

'**We are together**' is the website for volunteer assistance to the elderly in an emergency. Volunteers helped with the purchase of essential products and medicines.

Russian Federation: E-Education and E-Payments

The **Ministry of Science and Higher Education** holds regular online translations on the YouTube channel and organizes webinars for universities. It has also launched a hotline and a website for universities with methodological support.

Yandex.Textbook is a free online service that allows the teacher to save time in preparing for classes and checking tasks, ensure personalization and individualization of the educational process, create sets of cards with tasks aimed at working out subject skills in children.

The **Moscow Electronic School (MES)** platform created the necessary environment for holding videoconferences and organise remote education as part of a combined service.

The **Russian authorities** have urged consumers and businesses to use digital payments rather than cash to slow down the spread of the coronavirus and advised commercial banks to limit the number of ruble notes in circulation.

The Central Bank of Russia temporarily allowed banks to open accounts remotely with simplified know-your-customer (KYC) rules, provided these accounts are opened by individuals to make or receive socially important payments or by small and medium enterprises (SMEs) to receive grants/loans to preserve jobs and ensure salary payments to employees.

E-Payments

Russian Federation: IT-Grad

Headquarters - Moscow, Russia

The **IT-GRAD** group of companies is one of the largest cloud providers in Russia, providing cloud services for the corporate sector and government agencies. IT-GRAD has implemented more than 2000 successful projects. The company is presented in Russia and Kazakhstan.

Mission: The company aims to create competitive advantages for clients through the applying of the latest information technologies and their effective use.

IT-Grad Solutions for Government and State Companies

Private cloud. Isolated virtual infrastructure for projects with high levels of reliability and security.

Public cloud. Cloud IT infrastructure with unrivaled flexibility and wide functionality for any task.

Hybrid cloud. A hybrid infrastructure that combines private installations with a provider's cloud capabilities.

Protected cloud FZ-152. Protected virtual infrastructure in compliance with the legal requirements for personal data.

Successful Cases in Education

As part of the "With care for education" campaign, IT-GRAD provided to several universities in Kazakhstan some resources to use cloud services for free of charge and also provided consulting support.

Thanks to the provision of cloud infrastructure by IT-Grad, **Kostanay State Pedagogical University named after U. Sultangazina** was able to unload its own resources and, as a result, provide educational services during the period of distance learning more efficiently.

Saudi Arabia

Country's Highlights*

$701.5B GDP	**0.3/2.5** Government Effectiveness Index
7.1/10 E-Participation Index	**8.4/10** Telecommunication Infrastructure Index
6.9/10 Online Service Index	**96%** Internet Coverage

The Kingdom of Saudi Arabia maintains a robust digital infrastructure, accelerating digital transformation. This structure has enabled the Kingdom to face a disruptive coronavirus crisis, ensuring the continuity of business and educational operations, meeting citizens' requirements, and enabling citizens to continue their everyday lives.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Providing transparent information regarding the COVID-19 outbreak.
- Performance monitoring in health institutions.
- Improvement of Saudi inhabitants health conditions.

وزارة الصحة
Ministry of Health

Ministry of Health

Human Resources and Social Development

Human Resources and Social Development

- Development of local communities and care about community committees and provincial councils.
- Formulation of the general policy for social and labor affairs.

- Supervision over the communication and information technology sector.
- Development of policies that govern the sector.
- Designing plans for the sector.

وزارة الاتصالات وتقنية المعلومات
MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY

Ministry of Communications and Information Technology

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

# Saudi Arabia: Citizens' Participation and Communication

The **Ministry of Health Portal** aims to increase awareness in the health domain, targeting citizens, residents and visitors as well as the business sector and focusing on both specialists and non-specialists. Moreover, it is deemed an effective communication channel for each of the Ministry of Health's employees and the health sector's workers in particular and the beneficiaries of public services in general.

The Ministry of Health (MOH) has created an e-platform for health awareness under the theme '**Live Well**'. The aim is to make this account the main reference point for reliable health information. The 'Live Well' page provides a variety of basic health information for all strata of society.

A **WhatsApp** service for 937 Call Center. The service features an interactive chat on the WhatsApp number 920005937. At the beginning of the chat, users are able to choose one of the following services: information on the novel Coronavirus, primary health care center (PHC) locations, 'Mawid' (Appointment) service, initiatives for health volunteering, etc.

MOH Portal

"Live Well" MOH

WhatsApp Service for 937 Call Center
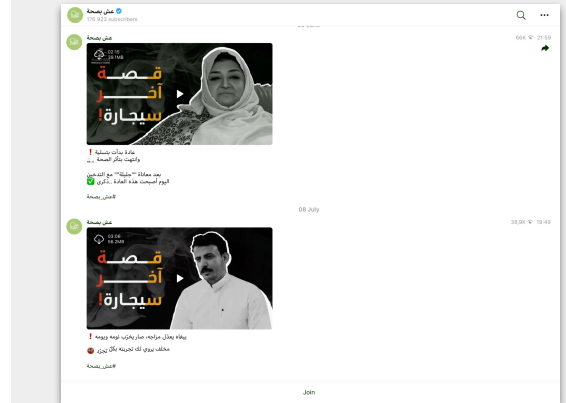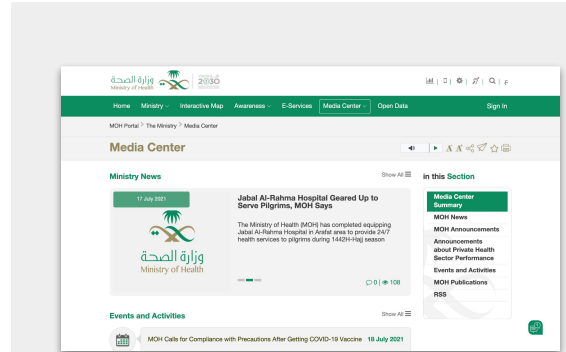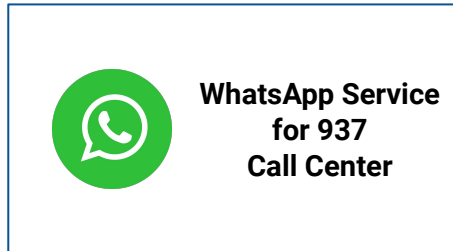
Saudi Arabia: Healthcare Initiatives

The E-Health **Seha** App is designed to provide online medical consultation services. The app allows users to get medical consultations from MOH's accredited doctors in all specialties.
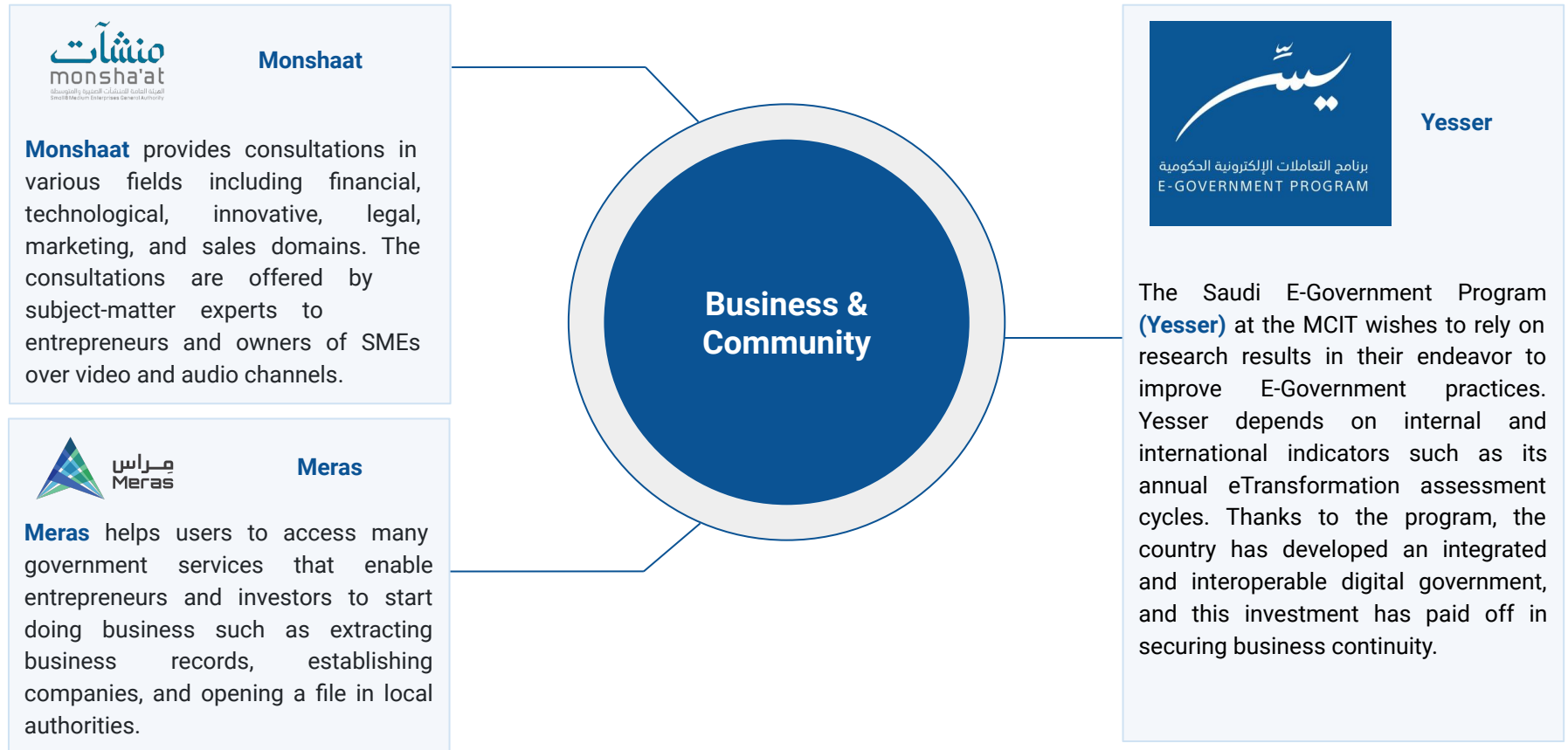
Sehhaty App aims to enable users to access health information and medical e-services provided by different health organizations in the Kingdom, such as vital signs updates, tracking prescribed medicine, retrieving and sharing sick leaves, and other services .

The E-Appointment **Mawid app** enables patients to book their appointments in primary healthcare centers in coordination with the concerned department.

Saudi Arabia: Business and Community Initiatives

Monshaat

Monshaat provides consultations in various fields including financial, technological, innovative, legal, marketing, and sales domains. The consultations are offered by subject-matter experts to entrepreneurs and owners of SMEs over video and audio channels.

Meras

Meras helps users to access many government services that enable entrepreneurs and investors to start doing business such as extracting business records, establishing companies, and opening a file in local authorities.

Business & Community

Yesser

The Saudi E-Government Program **(Yesser)** at the MCIT wishes to rely on research results in their endeavor to improve E-Government practices. Yesser depends on internal and international indicators such as its annual eTransformation assessment cycles. Thanks to the program, the country has developed an integrated and interoperable digital government, and this investment has paid off in securing business continuity.

Saudi Arabia: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

The **Tabaud app** is one of the technical solutions to track the spread of Coronavirus infection, which allows its users to know if they have been in contact with people who have been tested positive.

Tatamman is one of the MOH's apps, designed to provide protection and health care for citizens and residents referred to domestic isolation or quarantine, to maintain their safety and to enhance their recovery procedures.

Tawakkalna shows the health status of its users through coloured codes at the highest degree of safety. It also allows individuals to contribute to breaking the chain of infection by reporting infected cases or gatherings.

Public and Social Services

Tameni helps users to access authorized information about registered drugs and authorized prices for medicines. It also enables them to search for lower-cost alternatives and to browse food products and registered medical equipment.

Takhfidhat provides information about the latest authorized commercial offers and discounts in Saudi Arabia. This application also provides a search feature and enables users to access information about a product in the discount list.

Volunteer helps users to register for the volunteering service of the General Directorate of Civil Defense. Through the application, users can help others in hard times or be an active partner in volunteering projects. They also can join volunteering training courses.

Saudi Arabia: E-Education and E-Payments

E-Education

Safeer Graduates is a direct communication channel between various employers and graduates of the external scholarship programme. It also provides employer registration, talent recruitment and announcements on job and internship opportunities.

Maqbool - an electronic system that enables student admission verification services across all higher education and technical and vocational training institutions. Maqbool assists institutions in the optimization of educational seating capacities.

Madrasati - a digital learning management system that helps achieve learning outcomes of each curriculum and course to fully engage with the demands of digital learning now and in the future.

SADAD - an online system that operates by providing services for making payments and taxes for individuals, businesses and the public sector, and enables individuals to pay their electricity, water, telecommunications, and government fees.

STC Pay - a digital wallet equipped with all the means and options that enable individuals to control their payments in all, where they can transfer, receive, shop and control their financial matters through a single mobile application.

Mada Pay - an application that allows bank customers, who have Issued cards, to save all their bank cards (whether related to the current or credit account) in one application on the smartphone and pay through it.
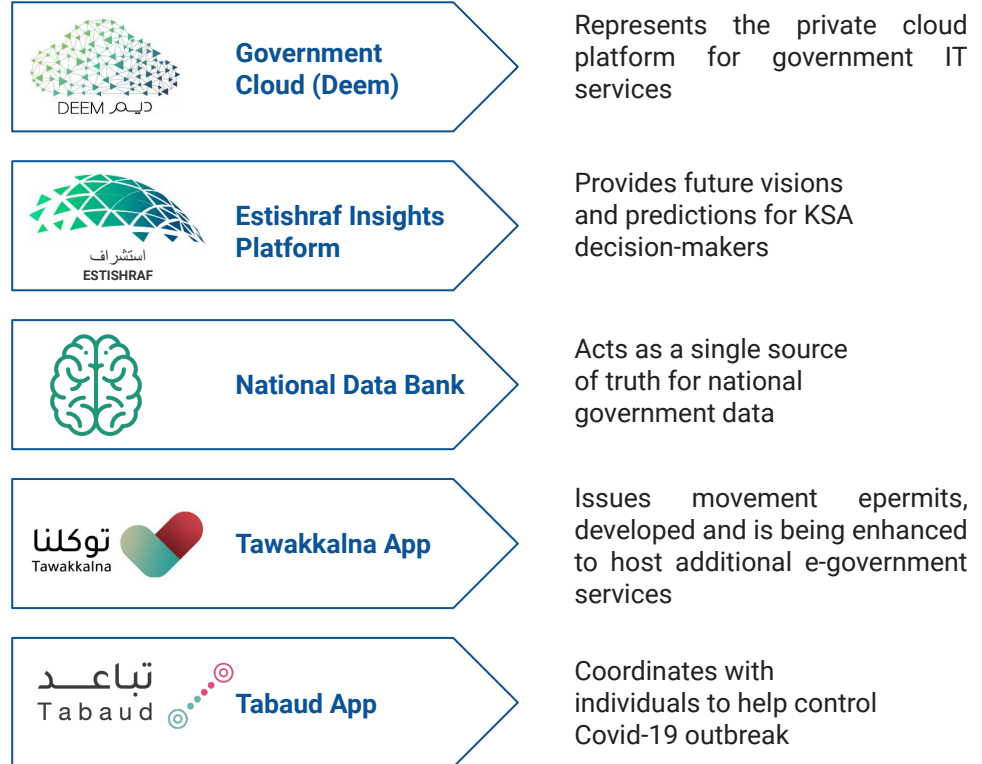
E-Payments

Saudi Arabia: SDAIA

Headquarters - Riyadh, Saudi Arabia

The **Saudi Data and AI Authority (SDAIA)** is a government agency that was established by a royal decree on 30 August 2019. To capitalize on Data & AI for the Kingdom economically and socially through national combined efforts by all stakeholders, SDAIA has developed the National Strategy for Data & AI.

Mission: Unlock the value of data as a national asset to realize Vision 2030's aspirations by setting the national data and AI strategy and overseeing its execution through harmonized data policies, data analytics and insights capabilities, and continuous data and AI innovations.

SDAIA key technology assets

Asset	Description
Government Cloud (Deem)	Represents the private cloud platform for government IT services
Estishraf Insights Platform	Provides future visions and predictions for KSA decision-makers
National Data Bank	Acts as a single source of truth for national government data
Tawakkalna App	Issues movement epermits, developed and is being enhanced to host additional e-government services
Tabaud App	Coordinates with individuals to help control Covid-19 outbreak

Republic of Singapore

Country's Highlights*

$340.0B
GDP

1.8%
Gross Domestic Spending on R&D

2.2/2.5
Government Effectiveness Index

9.8/10
E-Participation Index

8.9/10
Telecommunication Infrastructure Index

89%
Internet Coverage

The Singaporean government makes great efforts to build a smart nation, while accelerating the digital transformation in the government, economy, and society as a whole. Starting the journey in the early 1980s, the country has come to the point where most transactions between citizens and the government can be made online. Furthermore, the focus has shifted to experimenting with different approaches to be even more citizen-oriented.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Providing true information about COVID-19
- Preventing, controlling and eliminating diseases
- Ensuring access to good and affordable healthcare for all Singaporeans

MINISTRY OF HEALTH SINGAPORE
Ministry of Health

- Developing infocomm technologies
- Cyber Security
- Implementing information and public communication policies

Ministry of Communications and Information
Ministry of Communications and Information

- Facilitating economic development
- Providing a good understanding of the current state of and outlook for the Singapore economy for policy formulation and refinement

MTI MINISTRY OF TRADE AND INDUSTRY SINGAPORE
Ministry of Trade and Industry

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

Source: Trading Economics, OECD, Global Economy, World Bank, Developer Tech, GovTech Singapore, United Nations, Transparency, WIPO, Media Overview

Republic of Singapore: Citizens' Participation and Communication*

The official **Gov.sg WhatsApp** account provides citizens with timely and trusted updates on the COVID-19 situation. This service is available in 4 languages, and the system has been optimised to send multi-lingual messages to all subscribers within 30 minutes.

As of December 2020, **Gov.sg Info Bot** addressed over 865k COVID-19 related queries to help the public stay updated on credible COVID-19-related news and information.
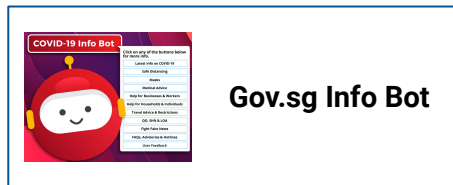
SupportGoWhere, a LifeSG initiative, provides citizens with a single portal to determine which assistance schemes they would be eligible for. It also has an Eligibility Checker, which lists the schemes that might be available when answering a few questions.

The SGUnited Telegram channel disseminates the latest updates on content and community initiatives by Singaporeans stepping up to support one another.

Gov.sg WhatsApp

Gov.sg Info Bot

SupportGoWhere

SGUnited Telegram Channel

Notes: *Here and further in the presentation, selected Government initiatives are mentioned
Source: Developer Tech, Gov.sg, Ministry of Finance, United Nations, GovTech Singapore; Smart Nation
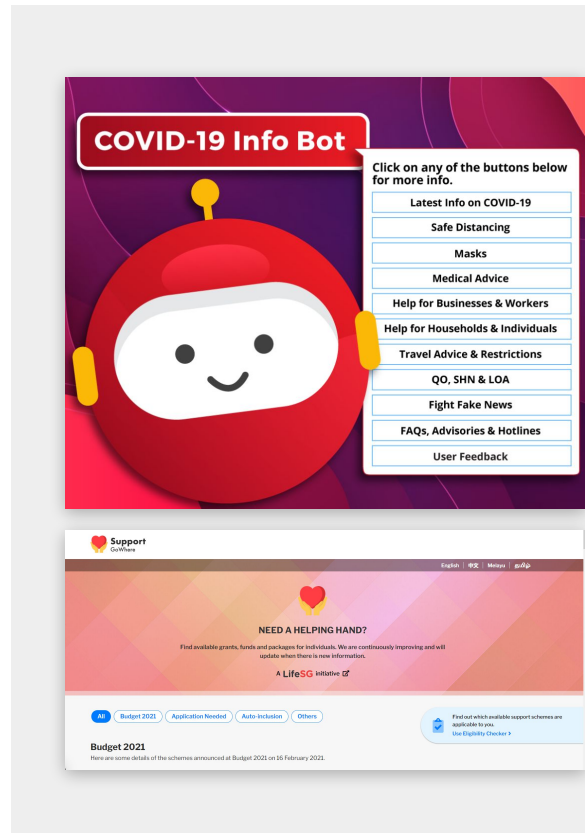
Republic of Singapore: Healthcare Initiatives

The COVID-19 Symptom Checker, hosted on sgcovidcheck.gov.sg, allows citizens to determine if they need medical treatment.

MOHT is rolling out a **telehealth programme** to enable hypertension patients to monitor their blood pressure levels from home.

Ask Jamie is a virtual assistant designed to answer queries within specific domains on Government agency websites. In addition, citizens could access the chatbot via Messenger and Telegram.

AI bot, **Wysa**, in the mindline.sg helps citizens to learn more about their mental health during the pandemic.

Vigilant Gantry is an AI-driven automated temperature screening tool that augments existing thermal systems to enhance contactless screening and saving time.

MINISTRY OF HEALTH
SINGAPORE

Republic of Singapore: Business and Community Initiatives

The chatbot for Biz addresses questions from businesses related to COVID-19, including information on measures to help businesses in Budget 2020/2021. The chatbot is developed by GovTech in collaboration with the Ministry of Trade and Industry (MTI).

The COVID-19 GoBusiness portal exists to support the application, approval, and management process for businesses applying for essential worker permits and to assist officers with the enforcement and identification of such workers.

Business & Community*

Stay-Home Notice (SHN) Reporting System

The Leave of Absence & Stay-Home Notice Tracking Solution is an SMS and mobile web-based solution that allows people serving out their Leave of Absence (LOA) or Stay-Home Notice (SHN) to report their locations to the Ministry of Manpower quickly and accurately.

Self-Help Temperature Scanner is retrofitted with a motion-sensing camera and it does a temperature scan without human intervention. This system is deployed to Government Buildings and community facilities.

Notes: *Here and further in the presentation, selected Government initiatives are mentioned
Source: Govinsider Asia, Developer Tech, GovTech Singapore, Gov.sg

Republic of Singapore: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management*

The **Leave of Absence (LOA) & Stay-Home Notice (SHN) Tracking Solution** is an SMS and mobile web-based solution that allows people serving out their LOA or SHN to report their locations to the Ministry of Manpower quickly.

TraceTogether is a mobile app that supports Singapore's efforts to mitigate the spread of COVID-19 through contact tracing.

Space Out is a map-based website that provides the public with regular updates on crowd levels in malls and other public facilities across Singapore.

Public and Social Services*

FluGoWhere is a website allowing users to conveniently and easily search through a list of Public Health Preparedness Clinics (PHPCs) providing special subsidies for those diagnosed with respiratory illnesses.

As the TraceTogether Token collection was launched in batches, **TokenGoWhere** allowed citizens to check when the Community Centres closest to them would begin distribution and operating hours.

SafeEntry is a national digital check-in system that logs the name, mobile number of individuals visiting hotspots and venues that provide essential services, as well as information about people working at providing essential services.

Notes: *Here and further in the presentation, selected Government initiatives are mentioned
Source: Govinsider Asia, Developer Tech, GovTech Singapore, Gov.sg

Republic of Singapore: E-Education and E-Payments

E-Education*

When schools had to be closed during the circuit breaker period, MOE tapped on the **Student Learning Space** to ensure that learning could continue while the world battled COVID-19.

E-Payments*

With the **Singapore Quick Response code**, merchants only need a single QR code to receive mobile payments from customers, and customers will only need to scan one QR code to make payment for the various e-payment applications they use.

PayNow allows citizens to do peer-to-peer digital transfers with the use of either the NRIC or mobile numbers. It is driven by the Monetary Authority of Singapore (MAS) and supported by the Smart Nation and Digital Government Office (SNDGO).

GovTech Singapore developed a tool **Government QR Payment** for payment of government services and bills. It allows citizens to scan the QR code on their government bills, both physical and electronic.

South Korea

Country's Highlights*

$1,630.5B
GDP

1.4/2.5
Government Effectiveness Index

10/10
E-Participation Index

9.7/10
Telecommunication Infrastructure Index

10/10
Online Service Index

96%
Internet Coverage

In light of the overall quality of Korea's e-government, the country has ranked high for a decade. Amidst the COVID-19 pandemic, the country has been regarded as the success story for measures and response, where e-Governance has played a critical role ranging from innovative screening and contact tracing capacities to economic intelligence assessment for adjusting tightened and loosened policy measures.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Set, manage, and evaluate science and technology policy, support scientific research and development
- Plan national informatization and information protection strategies

I-KOREA 4.0
사람 중심의 4차산업혁명 실현

Ministry of Science, ICT and Future Planning

- Strengthen emergency response capabilities
- Keep the nation safe from disease threats;
- Standard biomedical research data and build a relevant infrastructure

KCDC
Korea Centers for Disease Control & Prevention

- Responsible for innovations, administrative efficiency, e-government, personal information protection and support for elections

Ministry of the Interior and Safety

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

Source: Trading Economics, OECD, Global Economy, World Bank, United Nations, Transparency, WIPO, Media Overview

South Korea: Citizens' Participation and Communication

The Korean government established an **official website on COVID-19**, where all relevant information is available for the public. Information such as daily case counts, quarantine process data, regular briefings by the government, and other are provided.

Developed by the Seoul Public Health and Medical Foundation, the **COVID-19 guide search mobile app** is based on about 30 guidelines related to COVID-19 response provided by the government, including the Central Quarantine Countermeasures Headquarters.
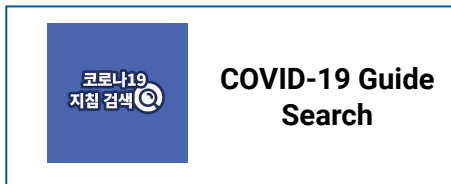
The Korea Centers for Disease Control and Prevention (KCDC) hosts its **Twitter account** where it posts last news about COVID-19 situation, governmental steps, recent implementation and developments, COVID-19 cases, and vaccination status.

The government strengthened public-private partnerships to facilitate fact-checking, including by funding **Fact Checker Net**, an open platform for experts and ordinary citizens to confirm the veracity of COVID-19 reporting.

Coronavirus Disease-19 **Official website**

COVID-19 Guide Search

KCDC Twitter

✓ 팩트체크넷 **Fact Checker Net**
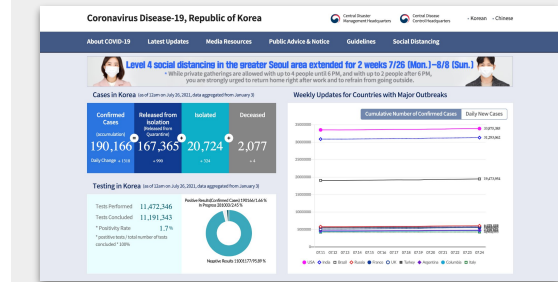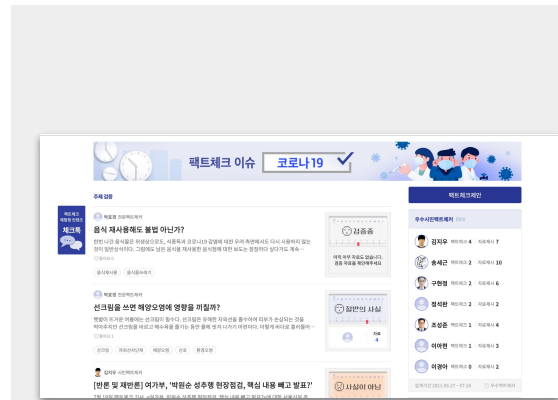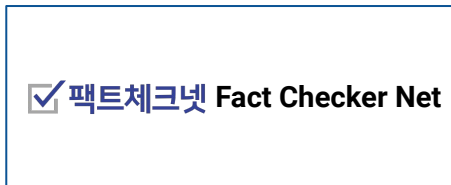
South Korea: Healthcare Initiatives

KDCA

Korea Disease Control and Prevention Agency

Self-quarantine safety protection app is an app that supports self-quarantine monitoring tasks such as self-diagnosing the health status of self-quarantine, automatically notifying dedicated officials, and sending a notification when they leave the quarantine area.

The Ministry of Health and Welfare starts **providing emergency medical-related information** using smartphones in order to respond to the growing demand for emergency medical care and the rapidly changing IT (information technology) environment.

The **self-health check app** enables everyone entering Korea to report their health status to the Korean health authorities via their smartphones. This allows the health authorities to manage the health of inbound travellers.

KMA Corona Fact was launched by the Korean Medical Association, a trade union representing a majority of Korean doctors. It provides the number of confirmed patients, suspected patients and deaths from the coronavirus.

South Korea: Business and Community Initiatives

When entering Korea, People with A visas (Diplomat (A-1), Government Official (A-2)) or Self-Isolation Exemption Certificate issued by the Embassy of the Republic of Korea should install the **Self-Check Mobile App** and record their daily health status on the app for 14 days.

Corona Map plots the locations where people known to have had COVID-19 have been, to make avoiding these areas easier.

Business & Community
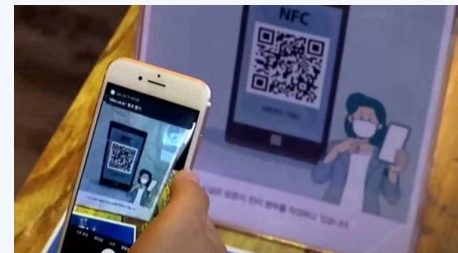
Visitors of nightclubs, bars, karaoke clubs, daytime discos, indoor gyms that hold group exercises, and indoor standing concert halls, will be required to use any of a number of commercially available apps to generate a one-time, **personalized QR code** that can be scanned at the door to track coronavirus cases and prevent further spread of the disease.

South Korea: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

The Korean government discloses the sales data of masks with complete transparency. Based on this data, Korean companies and citizens have created **MAMA app** that alert users of mask availability at pharmacies in close proximity.

KI-Pass (Korea Internet Pass)', which is QR codes based entry log system was introduced in order to keep record of visitors to the facilities with a high risk of mass infection, such as entertainment facilities, private academies, Internet cafes, etc.

Social distancing guide is an informational app where people can check detailed information about social distancing. The steps of a 'keep social distance' broken down into five stages separated, step-by-step tips, etc.

Public and Social Services

GOV.KR for Foreigners

South Korea launches integrated administrative services website for foreigners. **Government 24** offers nearly 100 services that several government bodies had controlled separately. Registered expats can apply for 20 "critical" state certificates.

The Ministry of Health and Welfare **alternative authentication app** provides an authentication function for users within the administrative disposition system for health care workers. By providing various authentication methods.

Welfare mobile app is Korea's representative welfare portal application serviced by the Ministry of Health and Welfare and the Korea Social Security Information Service. The main functions include the ability to request help.

South Korea: E-Education and E-Payments

The Korean government is offering **science content online** to minimize disruptions in students' learning and expand their opportunities for learning activities. Content-oriented classes allow students to watch video recorded lectures and learning content, while the teacher monitors and gives feedback.

EBS, Korea Educational Broadcasting System, is a public broadcasting organization that aims to inform, educate, engage, and enlighten people for all walks of their lives. Complementing public education in Korea, EBS is dedicated to ensure accessibility and openness in education for all.

With **Wedorang**, developed by KERIS teachers can open an online classroom where they can post online assignments, surveys, and group instant messaging services for open class discussions.

Tmoney Automated fare collection (AFC) system means automatic payment way for public transportation channel such as bus or metro using RF(Radio frequency) contactless smart card - an automated version of manual fare collection by cash.

KakaoPay is a mobile payment and digital wallet service by Kakao that allows users make mobile payments and online transactions. The service supports contactless payments using near-field communications and QR codes.

E-Payments

Switzerland

Country's Highlights*

$748.0B GDP	**2.0/2.5** Government Effectiveness Index
9.0/10 E-Participation Index	**9.5/10** Telecommunication Infrastructure Index
8.3/10 Online Service Index	**93%** Internet Coverage

Launched in 2020, the Digital Switzerland Strategy sets out guidelines for government action and delineates how authorities, businesses, the academic community, civil society, and political systems must work together to shape the transformation process for the good of all. Switzerland is making an important contribution to the international discussion about the future of digital space and governance.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Responsible for public health
- Develops Switzerland's health policy
- Ensures that the healthcare system remains efficient and affordable

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Federal Office of Public Health

- Responsible for the budget, financial planning, financial policy, federal treasury
- Responsible for human resources management, personnel policy

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Federal Department of Finance

- Promotes e-participation projects at communal and cantonal levels
- Strengthens the public and businesses' trust in e-government services
- Supports innovative projects

egovernment
schweiz·suisse·svizzera
eGovernment Switzerland

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibility.

Source: Trading Economics, OECD, Global Economy, World Bank, United Nations, Transparency, WIPO, Media Overview

Switzerland: Citizens' Participation and Communication

The **COVID-19 Switzerland dashboard** provides official statistics regarding confirmed hospitalisations, deaths, vaccinations, and other relevant virus variants. The dashboard is located on the FOPH website and, besides providing statistics, also reveals information on the current situation, publishing reports and providing news updates.

The FOPH launched an **Infochannel on WhatsApp**, where you can receive a wide range of information about the coronavirus. Navigating through the channel, the following topics are covered: Contact Tracing, the SwissCovid app, Masks, Precautionary Measures, Travel, the Situation in Switzerland, and Background Knowledge.

The **COVID-19 Civil Society Point of Contact** platform serves as a connection between the Federal Administration and initiatives of Swiss civil society. It sends specific needs and requests from civil society to the Federal Council Coronavirus Crisis Unit (KSBC). It also provides a platform for a targeted exchange between KSBC and initiatives from Swiss civil society.

BAG OFSP UFSP — COVID-19 Switzerland Dashboard

FOPH Infochannel on WhatsApp

COVID-19 Civil Society Point of Contact

COVID-19 Switzerland

Information on the current situation, as of 2 August 2021

Overview | Epidemiological course | Vaccinations | Hospital capacity | International situation

Status report, Switzerland and Liechtenstein

Previous 14 days ▾

Laboratory-confirmed cases	
Source: FOPH – Status: 02.08.2021, 07.50h	
Difference to Friday	2019
Total since 19.07.2021	9945
Per 100 000 inhabitants	115,04

Laboratory-confirmed hospitalisations	
Source: FOPH – Status: 02.08.2021, 07.50h	
Difference to Friday	24
Total since 19.07.2021	133

COVID-19 CIVIL SOCIETY POINT OF CONTACT

Switzerland: Healthcare Initiatives

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Office of Public Health

The **Electronic Patient Record (EPR)** is a personal collection of treatment-related documents. By having access to the EPR, healthcare professionals can get important information easily and quickly.

Pocketcoach is a platform for behavioural interventions, alleviating fears, and improving mental health. It operates in the form of a dialogue between the user and a chatbot, so that citizens can ask questions and receive advice regarding their mental health during the COVID-19 pandemic.

Coronavirus check is an online survey, developed by the Federal Office of Public Health. The coronavirus check is not a substitute for professional medical advice, diagnosis or treatment. When people finish their survey, they will be given a recommendation on what to do.

Switzerland: Business and Community Initiatives

EasyGov a secure and reliable platform that allows companies to electronically process authorization, application and reporting procedures in a single location. EasyGov relieves and saves costs - for both companies and the authorities.

Corona Immunitas is monitoring the SARS-CoV-2 antibody development in the Swiss population to find out whether there is protection against reinfection after a Coronavirus infection and, if so, how long this protection lasts.

Business & Community

COVID Certificate Check is the official app for checking COVID certificates. It is developed by the Federal Office of Information Technology, Systems and Telecommunication on behalf of the FOPH and allows to check whether a COVID certificate is valid in Switzerland.

Switzerland: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

SwissCovid is the official contact tracing app operated by FOPH. It helps to contain the coronavirus, complementing the conventional contact tracing carried out by the cantons to track new infections.

COVID-19 Tracking Switzerland collects and maps flu-like symptom reports. It is designed as an online survey and is based on the collection of de-identified health information related to COVID-19. Covidtracker is a joint nonprofit initiative by Swiss scientists and startups.

The **Covid Care app** helps to provide care to people who are in isolation in the canton of Basel. It also offers a feature where people who are in contact with the patient can be entered and monitored for the purpose of contact tracing, which is being encouraged by FOPH.

Public and Social Services

eUmzug serves to fulfill the personal reporting requirement when private individuals move within Switzerland. It was developed before the pandemic; however, use of the website has increased during Switzerland's COVID-19 outbreak..

Chatbot Maxi of the social security fund SVA Aargau was created together with the digital agency Previon Plus. Since its introduction, it has handled 30% of online inquiries. The chatbot can answer general enquiries.

Participer is an online platform for citizen participation in the canton of Geneva. Citizen participation take place through online surveys and workshops. It was expanded to take into account personal data protection.

Switzerland: E-Education and E-Payments

In 2020 **Zoe** came to children in Switzerland, with the name **#2030**. It is a learning platform allowing students to build their own interactive experiences. Teachers are able to create virtual classrooms and have the students come and engage in class activities from wherever they are in the world.

German-language channels have launched the **SRF mySchool** series, which features content in line with the Lehrplan 21 for primary and high school students.

Classtime Inc. is a solution for classrooms that complements in-class teaching with immediate feedback on students' level of understanding. Classtime Premium package was provided free of charge to schools while they were closed.
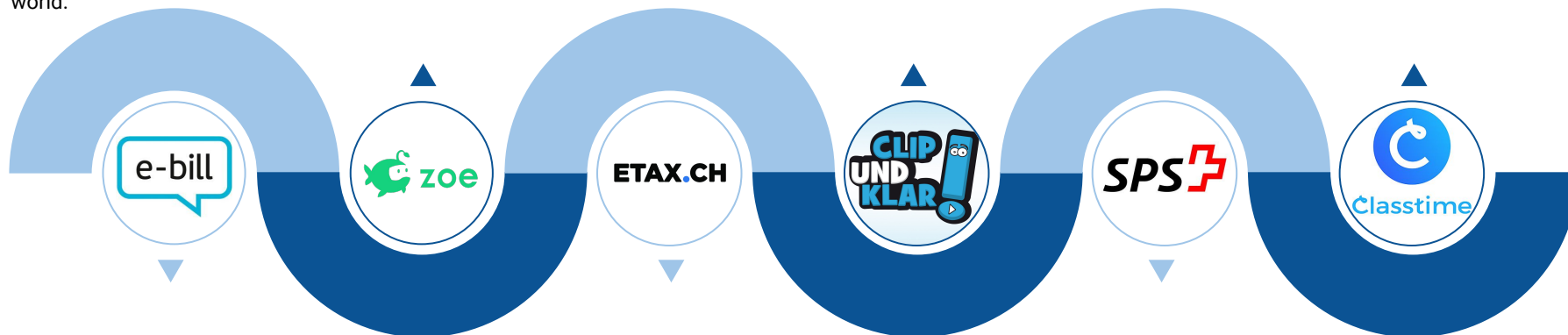
Electronic billing (e-billing) is an easy and safe way to issue a bill. Instead of printing the bill and sending it by post to the Federal Administration, customers send their billing information electronically.

With **eTax** users can create their tax returns safely, quickly and free of charge. The company also develop the official declaration solutions for 9 cantonal tax administrations.

Swiss Post's comprehensive e-payment solution for public authorities, non-profit organizations and operators of online shops: bill fees online, collect donations, take online shop payments and more, including payment collection and creditworthiness checks.

E-Payments

Switzerland: E-Government Schweiz

egovernment
schweiz · suisse · svizzera

Headquarters - Bern, Switzerland 🇨🇭

eGovernment Switzerland is the organisation of the Confederation, the cantons and the communes for the expansion of electronic government services. It steers, plans and coordinates the joint e-government activities at the three government levels.

Mission: Manage the digital transformation. Authorities will improve access to their electronic service offering, ensure their accessibility and rely on end-to-end electronic processes, while safeguarding the right to informational self-determination.

E-Government's projects 2021:

Innovations	E-participation
Project CH+ Games for Democracy (Zurich University of the Arts)	**"Lausanne participates" – citizen participation platform** (city of Lausanne)
iciGov (city of Biel)	**Enabling collaboration via a digital, standardised platform** (canton of Zug)
Pilot project on RPA in the city administration (city of St Gallen)	**Online community meetings** (villages of Bitsch, Täsch and Salgesch)
Digital literacy: using simulations to boost media skills (canton of Zurich)	**E-participation platform for collaborative processes on meinthurgau.ch** (city of Arbon)
Budget: > $220K	**Budget: > $165K**

United Arab Emirates

Country's Highlights*

$421.1B GDP	**1.4/2.5** Government Effectiveness Index
9.4/10 E-Participation Index	**9.3/10** Telecommunication Infrastructure Index
9.0/10 Online Service Index	**99%** Internet Coverage

The United Arab Emirates has developed strong strategies around digitalisation and transformation that promote innovation, investing in R&D, and embracing ground-breaking technologies. In terms of digital competitiveness, the government has gradually made more services available online, so now, for instance, it is ranked among the top-10 countries by Online Service index worldwide, and first in the Arab region.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

- Aligning on federal-level health I&R priorities
- Facilitating know-how transfer for drug and medical devices agency

Ministry of Health & Prevention

- Collaborating in the creation of HealthTech innovation ecosystem
- Providing advisory for health I&R investments

Ministry of Economy

- Raising the quality of government services
- Conducting research and studies relevant to the Federal Government strategy and vision

Ministry of Cabinet Affairs
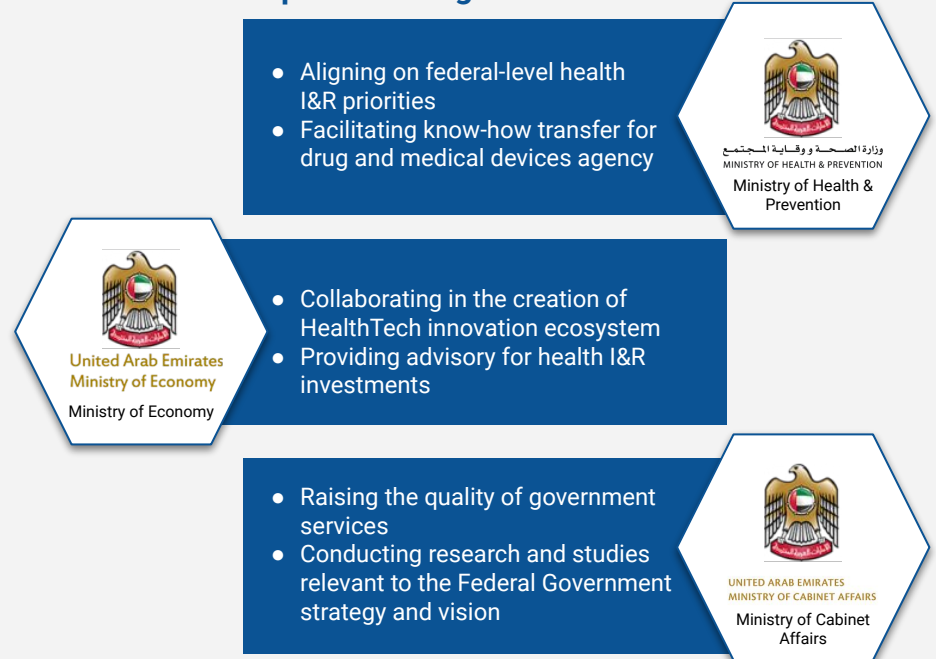
*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibility.

United Arab Emirates: Citizens' Participation and Communication

An **official website** to keep the public informed about the coronavirus outbreak. The new platform includes interactive features, updates from official sources, and answers in English and Arabic to queries related to the coronavirus through an AI chatbot.

The National Emergency Crisis and Disasters Management Authority launched **"Weqaya"** – a Platform designed to raise public health issues and spread awareness among UAE citizens.

The Ministry of Health and Prevention launched an awareness section on their website. The section, titled, **'Your Health, Our Priority'**, publishes information about COVID-19, its prevention and treatment.

Emirates News Agency – WAM, the UAE's official news agency, has allocated a **separate section to cover all national and global updates related to COVID-19.**

Official COVID-19 Website

Weqaya
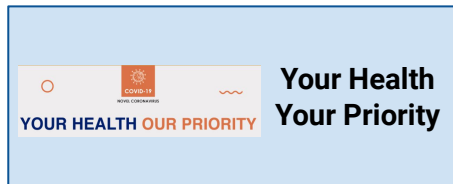
Your Health Your Priority

Emirates NewsAgency
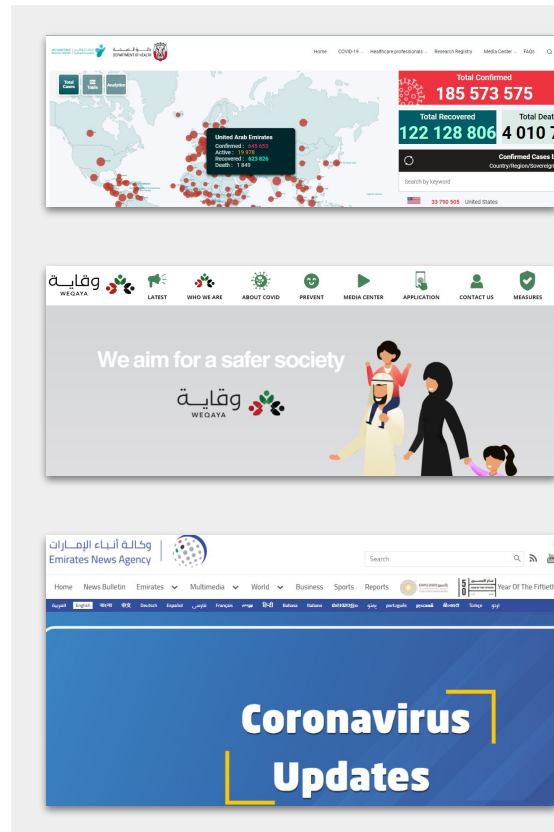
United Arab Emirates: Healthcare Initiatives

وزارة الصـــحـــة و وقـــايــة الـمـجـتـمـع
MINISTRY OF HEALTH & PREVENTION

The **ALHOSN UAE app** is the official integrated digital platform through which individuals can receive COVID-19 test results on their smartphones.

Abu Dhabi: **Malaffi platform** is the Population Risk Management project that safely and securely connects all public and private healthcare providers.

Dubai: **DHA App** enables residents to access DHA's Smart Services i.e., Manage Appointments, Lab Results and Medications. Users can also check for Medical Fitness Application Status, Register and Volunteer for Blood Donation services.

Dubai: **Dubai Health Experience (DXH) App** offers access to hundreds of doctors' profiles, hospital/clinic listing, and comprehensive medical packages.

United Arab Emirates: Business and Community Initiatives

Abu Dhabi: The **TraceCovid** app detects other devices that have the same app and shares proximity data with it. When two users come in contact with one another, a 'Secure Tracing Identifier' (STI) is exchanged and stored. This STI list contains the records of individuals that a user had close contact with.

Abu Dhabi: The **StayHome** app ensures that people directed to self-quarantine are complying with the quarantine requirements. Through the app, a person can share his self-quarantine status and his location with Department of Health - Abu Dhabi (DoH).

Business & Community

Smart Mazad allows investors and companies to view all the biddings offered by DHA and submit their bids on any of DHA Biddings. Users will be able to submit a registration form to be registered as investor in DHA, view all Biddings, and pay document fees to participate in any of the biddings.

Dubai: Developed by 01GOV, **CoDesk** is a digital platform designed specifically to enable leaders and employees of the government sector to work and innovate remotely in the post-pandemic time.

United Arab Emirates: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

Abu Dhabi: The Abu Dhabi Government is using electronic wristbands as part of its effort to enforce isolation and reduce the spread of COVID-19. The device serves as a tracing and monitoring tool and is linked to the COVID-19 testing and tracing app, **Al Hosn**.

Coronavirus contact tracing system – the first coronavirus contact tracing system, launched by ADPHC. It is designed to conduct a virtual chat with positive COVID-19 cases and aims to expand the scope of virus investigations to be more comprehensive.

Abu Dhabi: The Abu Dhabi Emergency, Crisis and Disasters Committee has approved a pilot of **advanced scanners** to identify COVID-19 cases. The scanners will be used at entry points to the emirate and will screen for COVID-19, providing immediate results and denying entry to positive test results.

Public and Social Services

Abu Dhabi: **TAMM** harnesses the latest technologies and digital solutions to provide seamless service experiences for customers. Operated ADDA, it provides its customers with a comprehensive range of government services through one single point of access at any time and place.

DOH launched the **Abu Dhabi's Health Workforce Management System**, a new digital platform through which clinical staff from across the UAE can register to work full or part-time as a volunteer in the emirate's healthcare sector.

UAE PASS enables all registered individuals to access more than 5,000 government, private and semi-government sector entities' services through their respective websites and apps. It allows them to digitally sign and authenticate documents and transactions.

United Arab Emirates: E-Education and E-Payments

E-Education

Diwan eBook reader — an app that facilitates the downloading of books and online study. It allows teachers and students from overnment schools to view and interact with the learning curriculum electronically.

Duroosi is a YouTube channel with 600 tutorials, covering a variety of subjects based on the national curriculum, and intended to help families cut back on the high cost of private tuition.

The 'Remote Exam Service (**OnVUE Proctoring**)', which facilitated the process of having a professional examination by conducting it remotely under DoH's supervision.

In Abu Dhabi, people can pay for public bus fares by **Hafilat card**. Citizens need to load it with money and swipe it before and after every trip. The fare is calculated automatically based on the distance of the passenger's journey. Weekly and monthly passes are also available.

In Abu Dhabi, citizens can pay for public parking fares by **Mawaqif card**. These cards also need to be pre-loaded with currency and swiped at the parking fees' kiosk for getting a ticket. These cards are rechargeable.

The 'eDirham Instant' — this app enables card-less and cashless payment for government transactions across the UAE, without the need for a physical card. Through the app, people can make instant payments using a One Time Password (OTP) or a QR code.

E-Payments

United Arab Emirates: Department of Health Abu Dhabi

Headquarters - Abu Dhabi, UAE

Department of Health (DoH) in Abu Dhabi is the regulative body of the Healthcare Sector in the Emirate of Abu Dhabi. DoH defines the strategy for the health system, monitors and analyses the health status of the population and performance of the system.

Main Functions:
- Align health I&R strategy with Abu Dhabi health sector strategy
- Collaborate on improving of patient safety & quality of care
- Leverage the DoH network of local & global partner

Mission: A healthy life in Abu Dhabi with globally leading preventive and curative services.

DoH's Main Initiatives

Medical Tourism

Digital platform that provides visitors to Abu Dhabi with all medical offerings and healthcare facilities available.

AI Lab

Space for co-creation, allowing the people to develop innovative ideas infused with the latest technologies and aligned with Abu Dhabi's innovation agenda.

Malaffi

Health Information Exchange platform, that safely and securely connects public and private healthcare providers in the Emirate of Abu Dhabi.

Technology Innovation Pioneers

TIP Healthcare Awards provides in the form of investment, sponsorship, partnerships and technical support for individuals and business entrants

United Arab Emirates: 01GOV

01GOV

FUTURE NOW

Headquarters - Dubai, UAE

As a unique GovTech startup in the region, **01Gov** strives to empower the public sector across the Arab world to be future-ready. The company has been incessantly offering a rich range of products and services. Through online innovation labs, training, capacity building, video libraries, reports, written guides and more, the startup is disseminating traditionally niche skills across public sectors.

Mission: Inspire the public sector leaders and employees and provide them with the needed skills, attitudes, knowledge and tools to make the shift into the digital era.

01GOV's Key Technology Assets

استشارات حكومة 01

- Consulting and innovation management systems
- Development if specialised reports and guides
- Implementation of projects through remote digital work and personal communication

منصة حكومة 01

- First Arab platform specialised in government innovation
- Database of more than 2,000 innovative ideas
- Providing a series of specialised webinars

أكاديمية حكومة 01

- Government academy with training programmes and events
- Innovation labs and brainstorming centre

CoDesk

- Remote work and innovation platform
- Direct connection with government academy platform
- Team management

United Kingdom

Country's Highlights*

$2,707.7B GDP	**1.8%** Gross Domestic Spending on R&D
1.4/2.5 Government Effectiveness Index	**9.8/10** E-Participation Index
9.2/10 Telecommunication Infrastructure Index	**93%** Internet Coverage

The UK government had grown online presence with each government department and agency having their own website. The transformation of how governmental departments deliver services has improved citizens' experience of a significant number of services, but in many cases it has not changed the way government organisations operate. The UK government aims to build on the shared components and platforms to assemble business capabilities.

*Last Available Data

Selected Ministries that Participated in GovTech Development during COVID-19*

GOV.UK
- Provides users with relevant information about COVID-19 restrictions and news
- Provides official information from Parliament

NHS — National Health Service
- Reduce pressure on frontline services
- Make health and care services more efficient
- Improve health and care outcomes, people's experiences

FindBusinessSupport.gov.scot — Find Business Support
- Offers an overview of all funding and services offered by public sector organisations across Scotland
- Provides businesses with information, advice and support

*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

Source: Trading Economics, OECD, Global Economy, World Bank, NHS, GOV.UK. Find Business Support. Scottish Enterprise. Welsh Govt

United Kingdom: Citizens' Participation and Communication

A **WhatsApp coronavirus 'chatbot'** service was launched by the Government to provide Britons with answers to commonly asked questions about the disease. The free-to-use service is aimed at providing "official, trustworthy and timely information.

WhatsApp chatbot
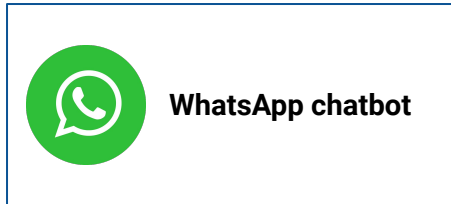
nidirect is the official Government website for Northern Ireland residents, providing a single point of access to public sector information and services. The website provides relevant and up-to-date information about COVID-19 and vaccination, including videos on different topics.

nidirect

The Government actively shares information regarding the COVID-19 outbreak in UK with citizens through social media accounts such as **Twitter, LinkedIn**, etc. to keep people aware and up-to-date.

Governmental Social Media
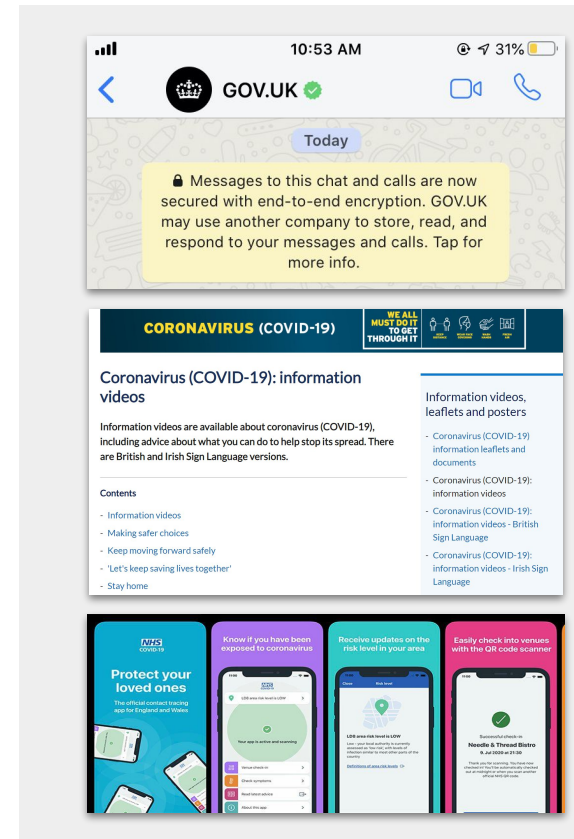
United Kingdom: Healthcare Initiatives

Through the **NHS website**, the UK's biggest health website, citizens can book vaccinations or get tested for COVID-19 (it will transfer the user to the GOV.UK website). Moreover, one can find information regarding vaccination centres, hospital hubs, vaccination sites, and other on the website.

On the **GOV.UK website**, citizens are able to register on the free PCR test, registering a test kit or reporting a result. Moreover, the website provides the latest news regarding the COVID-19 outbreak, number of cases, current numbers of patients in hospital and patients on ventilation, etc.

C19 CONTROL is a free, easy-to-use and secure method of tracking COVID-19 infection statuses in both service users and staff, as well as recording personal protective equipment (PPE) needs across care settings.

The **NHS COVID-19 app**, available to download in England and Wales, is the fastest way to see the risk from coronavirus. The app has a number of tools to protect citizens, including contact tracing, information on local area restrictions and venue check-in.

United Kingdom: Business and Community Initiatives

GOV.UK

The Government has launched support for businesses in the UK. Coronavirus support is available both to employers and the self-employed. Through the official website **GOV.UK** everyone can check if their business follows the requirements to get financial support and what schemes could be used.

Business & Community

GOV.UK

The **coronavirus (COVID-19) support from your business** service allows businesses to tell the government how their organisation might be able to help with the response to coronavirus.

FindBusinessSupport.gov.scot

Find Business Support provides Coronavirus support and advice for businesses in Scotland, providing the latest information about the changes in legislations and other business news.

Scottish Enterprise

Scottish Enterprise, the national economic development agency and a non-departmental public body of the Scottish Government, is helping businesses manage the impacts of coronavirus.

United Kingdom: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

The **NHS COVID Pass Verifier app** is a secure way to scan an individual's NHS COVID Pass and check that they have been fully vaccinated against COVID-19, had a negative test. The app supports international travel into foreign countries, or large-scale venues within England.

Care Leavers App is a secure messaging service to any organisation that needs to stay in touch with isolated vulnerable people, at no cost, during the COVID-19 pandemic. The app is already used by local authorities to communicate and engage with young people leaving care.

The free **Beach Check UK** app enables users to check which of its beaches are the least congested, with a traffic light system to warn visitors away from crowded sections and information on lifeguard status, and the bye-laws for cycling and walking dogs along the promenade.

Public and Social Services

Be My Eyes has partnered with the UK **Department of Health and Social Care** to give citizens who need visual support with their at-home COVID test direct access to the NHS Test & Trace service.

Based on Lanterne's core technology – designed to help people in conflict zones to navigate safely – the **Crowdless app** provides anonymised real-time data. It enables people to choose the best place and time to visit busy places such as supermarkets and pharmacies.

Log my Care has developed a brand **Coronavirus Monitoring Tool** and are making it completely free to use. The tool is able to regularly record the three key warning signs of the virus for their service users: temperature, breathing rate and noticed symptoms.

United Kingdom: E-Education and E-Payments

E-Education

Show My Homework from **Satchel** is an online learning platform that is a partner to 1 in 3 UK secondary schools, supporting them in content delivery, behaviour and classroom management, and communicating with families.

Firefly is the secure, collaborative platform for schools. Simplifying school communications, lesson management and progress tracking, Firefly engages the whole school community and ensures that everyone can keep learning.

My Learning Cloud is offering 10 e-learning courses (including the Care certificate), fully-funded through Skills for Care's COVID-19: Essential Training Initiative. This is available to any care organisation in England.
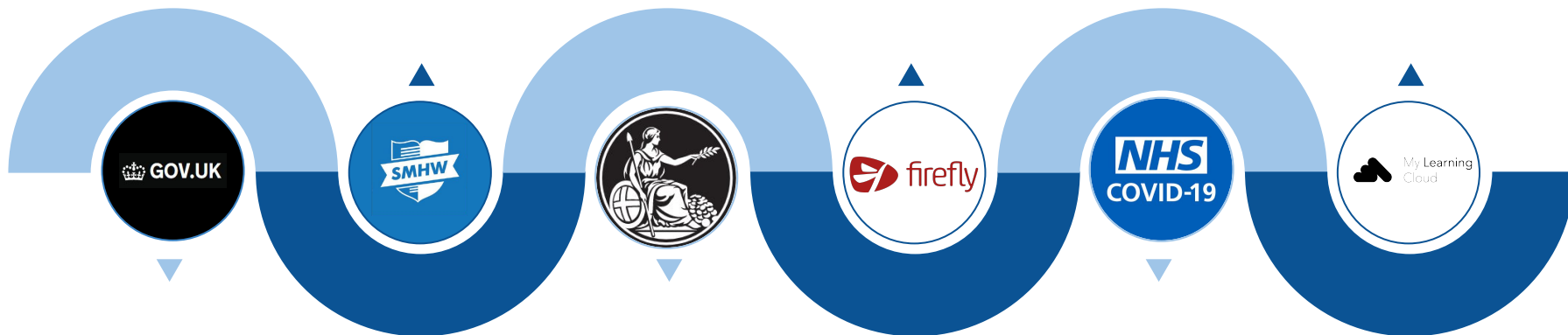
The Home Office has added GOV.UK Pay's **standalone payment links** to invoices to support payments typically taken over the phone by staff at the Shared Service Centre.

In April 2021, the **Bank of England** announced the development of the Central Bank Digital Currency (CBDC). This would allow households and businesses to directly make electronic payments using money issued by the Bank of England.

NHS COVID-19 app offers self-isolation payments. It provides a way to apply for a £500 grant if it gives a self-isolation order. Before, those on low incomes were only offered the payment if they had been told to stay at home.

E-Payments

United States of America

Country's Highlights*

$20,936.6B
GDP

3.1%
Gross Domestic Spending on R&D

1.5/2.5
Government Effectiveness Index

10/10
E-Participation Index

9.2/10
Telecommunication Infrastructure Index

88%
Internet Coverage

The US government developed Digital Government Strategy aimed at delivering better digital services to the americans in 2012. Since then, the government aims to improve the lives of the public and public servants by transforming how government uses technology. This means not only focusing on technology solutions, but also on creating momentum and sustainability, fostering a technology-first philosophy across agencies within the federal government.

*Last Available Data

Selected Ministries and Agencies that Participated in GovTech Development during COVID-19*

- Providing reliable answers and concrete information regarding COVID-19 and vaccination
- Protecting and promoting the health and well-being

Department of Health & Human Services

- Hiring top technologists into term-limited 'tours of civic service'
- Developing human-centered solutions

U.S. DIGITAL SERVICE

- Helping governments and nonprofits deliver responsive, people-centered services with modern and resilient technology
- Developing technologies in the COVID-19 response

US DIGITAL RESPONSE
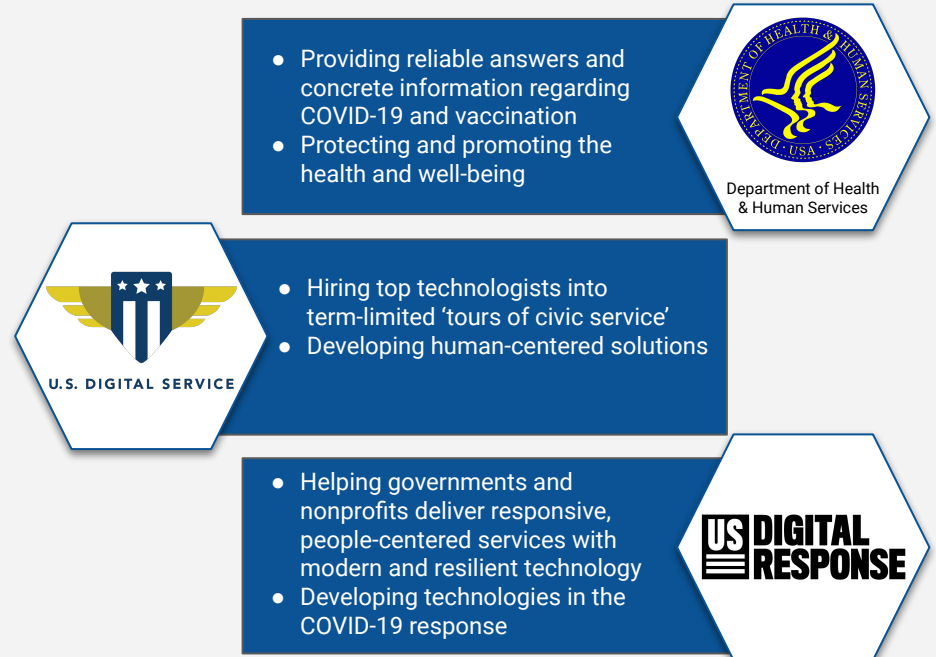
*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

United States of America: Citizens' Participation and Communication

Zencity, a startup that gathers sentiment and input from residents and feeds it to their government, found itself at the center of a new, sudden, urgent need to help the public sector tap into the public conversation.
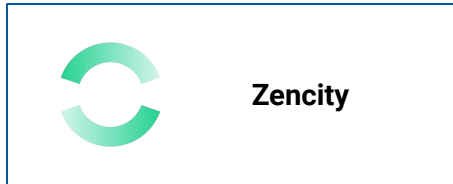
Since launching an agency-wide response to the COVID-19 pandemic on January 21, 2020, **CDC** has been preparing healthcare workers, learning more about how the disease spreads, and supporting state, local, tribal and territorial governments on the front lines of public health.
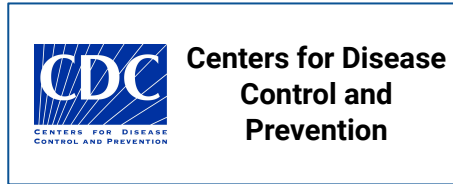
The **Center for Systems Science and Engineering** at Johns Hopkins University developed an **online dashboard** to visualize and track the reported cases on a daily timescale. They also made the complete set of data downloadable as a Google Sheet. The map shows new cases, confirmed deaths and recoveries.

Zencity

Centers for Disease Control and Prevention

Center for Systems Science and Engineering
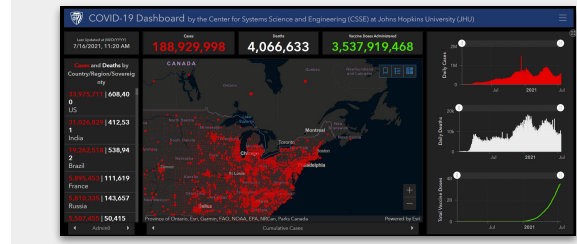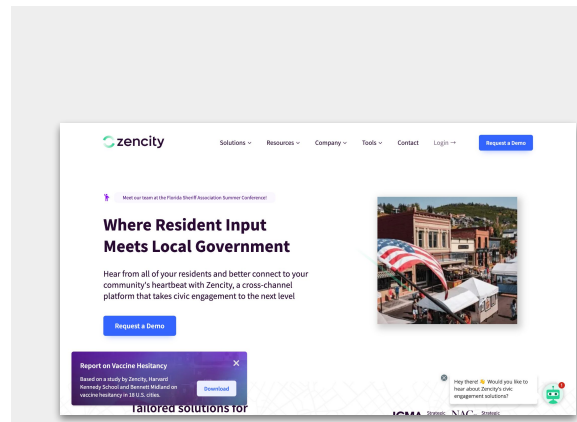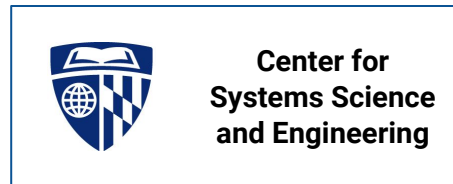
United States of America: Healthcare Initiatives

Department of Health & Human Services

US Digital Service has partnered with Centers for Medicare & Medicaid Services (CMS) to stand up a new cloud environment to continue processing claims, which positions Medicare systems to scale and adapt rapidly.

COVIDTracer and **COVIDTracer Advanced tools** are spreadsheet-based applications that allow health officials and policy makers to compare the effectiveness, and the resources needed, monitor strategies and contact tracing.

Infection Control Assessment and Response (ICAR) tool is intended to help assess IPC practices for nursing homes without an active outbreak of COVID-19.

The **Coronavirus Self-Checker** is an interactive clinical assessment tool that will assist individuals ages 13+ on deciding when to seek testing or medical care if they suspect they contracted COVID-19 or has come into close contact with someone who has COVID-19.

United States of America: Business and Community Initiatives

Google Find Food Support

Find Food Support site is a tool features a Google Maps locator tool to help people find food bank, food pantry or school lunch program pickup site in the nearest community.

10x

10x provides funding for new technology projects or products across government, from the TTS office of investments.

USDR COVID-19 Communication Toolkit

COVID-19 Communication toolkit offers detailed, step-by-step guidance to help health communicators, content developers, educators, and health promotion leaders put health equity recommendations into COVID-19 communication action.

US DIGITAL RESPONSE

US Digital Response has developed a tool to help states more easily identify federal grant opportunities, coordinate application processes internally, and efficiently access funds for their communities.

Business & Community

United States of America: Social Distancing and Crowd Management, Public and Social Services

Social Distancing and Crowd Management

Unacast, a location data and analytics company, released its **Social Distancing Scoreboard**, which uses smartphone data to measure reductions in travel distance at the county level and grades states on how well their residents are maintaining physical distancing.

COVID Alert NJ is New Jersey's free and secure mobile app that anonymously alerts users if they have been in close contact with someone who has tested positive for COVID-19.

The **New York City Police Department** was using its network of surveillance cameras in the city's fight against the coronavirus to make sure people are obeying rules not to congregate.

Public and Social Services

The Home Energy Assistance Program (HEAP) helps low-income people pay the cost of heating their homes. It provides federally funded assistance in managing costs associated with home energy bills, energy crises, weatherization, etc.

Supplemental Nutrition Assistance Program (SNAP) provides nutrition benefits to supplement the food budget of needy families so they can purchase healthy food and move towards self-sufficiency.

The mindfulness app **Headspace** was offering its premium tier of meditation sessions for free to people who was unemployed in the US. The app offers guided meditations, animations, articles and videos all focused on mental wellness.

United States of America: E-Education and E-Payments

E-Education

Tuition-free and aligned with state educational standards, **Connections Academy** partners with parents to give students the support they need to find fulfillment, adapt to challenges and embrace their full potential.
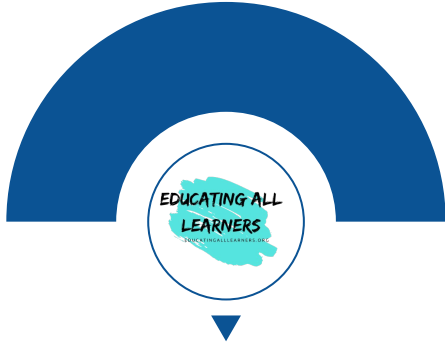
The Educating All Learners Alliance (EALA) is a coalition of organizations committed to resource sharing and community-building that supports the efforts of the education community to meet the needs of students with disabilities during the COVID-19 pandemic.

Khan Academy is an American non-profit educational organization, with the goal of creating a set of online tools that help educate students. Its website also includes supplementary practice exercises and materials for educators.

E-Payments

PayIt modernizes property tax collection and processing by integrating your agency's system of record into a unified digital platform. Residents can search and link their properties, pay home and vehicle property taxes, set up payment methods and more, allowing the agencies to speed the tax collection process with fewer delinquent tax payments.

GovTech / E-governance Analytics Dashboard

GovTech / E-governance Global Industry Landscape in the Post-Pandemic World Dashboard

About the GovTech Division of Deep Knowledge Analytics

The [GovTech Division of Deep Knowledge Analytics](#) researches the trajectory of the GovTech industry by focusing on factors driving the ongoing transformation of different states, the main sectors to be changed, the barriers to this process and ways to overcome them. It also provides information on the main types of technologies used by GovTech including AI and machine learning, IoT, blockchain, robotic automation, and geospatial data analysis, with emphasis on the best examples of their implementation including saving time and reducing complexit in public-private information exchanges, reducing bureaucracy and corruption, and improving automation, transparency, and accountability of information.

About Deep Knowledge Analytics

[Deep Knowledge Analytics](#) is a DeepTech-focused agency producing advanced analytics on DeepTech and frontier-technology industries using sophisticated multi-dimensional frameworks and algorithmic methods that combine hundreds of specially-designed and specifically-weighted metrics and parameters to deliver sophisticated market intelligence, pragmatic forecasting and tangible industry benchmarking.

It is an analytical subsidiary of [Deep Knowledge Group](#), an international consortium of commercial and non-profit organizations focused on the synergetic convergence of DeepTech and Frontier Technologies (AI, Longevity, MedTech, FinTech, GovTech), applying progressive data-driven Invest-Tech solutions with a long-term strategic focus on AI in Healthcare, Longevity and Precision Health, and aiming to achieve positive impact through the support of progressive technologies for the benefit of humanity via scientific research, investment, entrepreneurship, analytics and philanthropy.
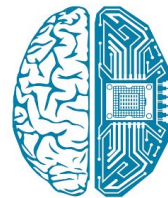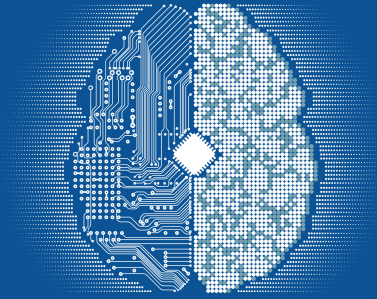
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