GovTech Development During COVID-19: How Technologies Have Helped

Special Edition Teaser

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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.
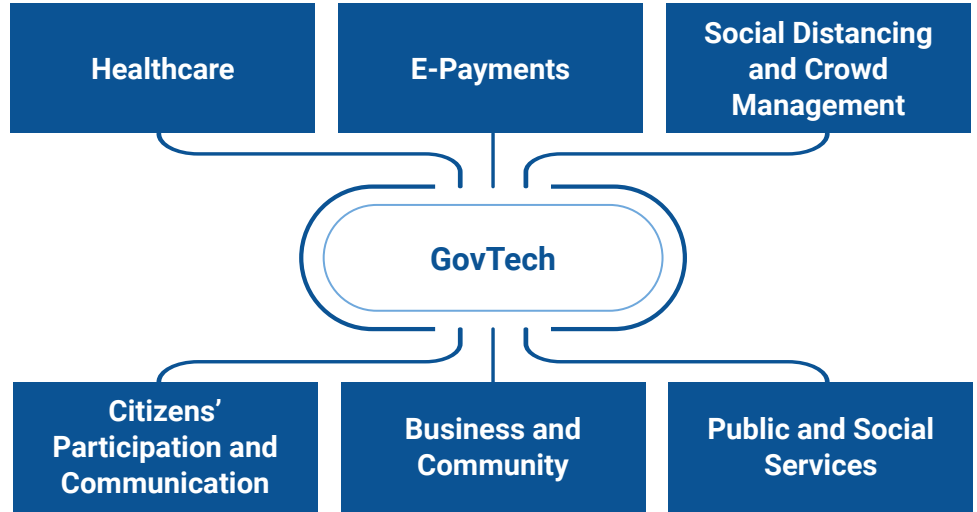
Executive Summary

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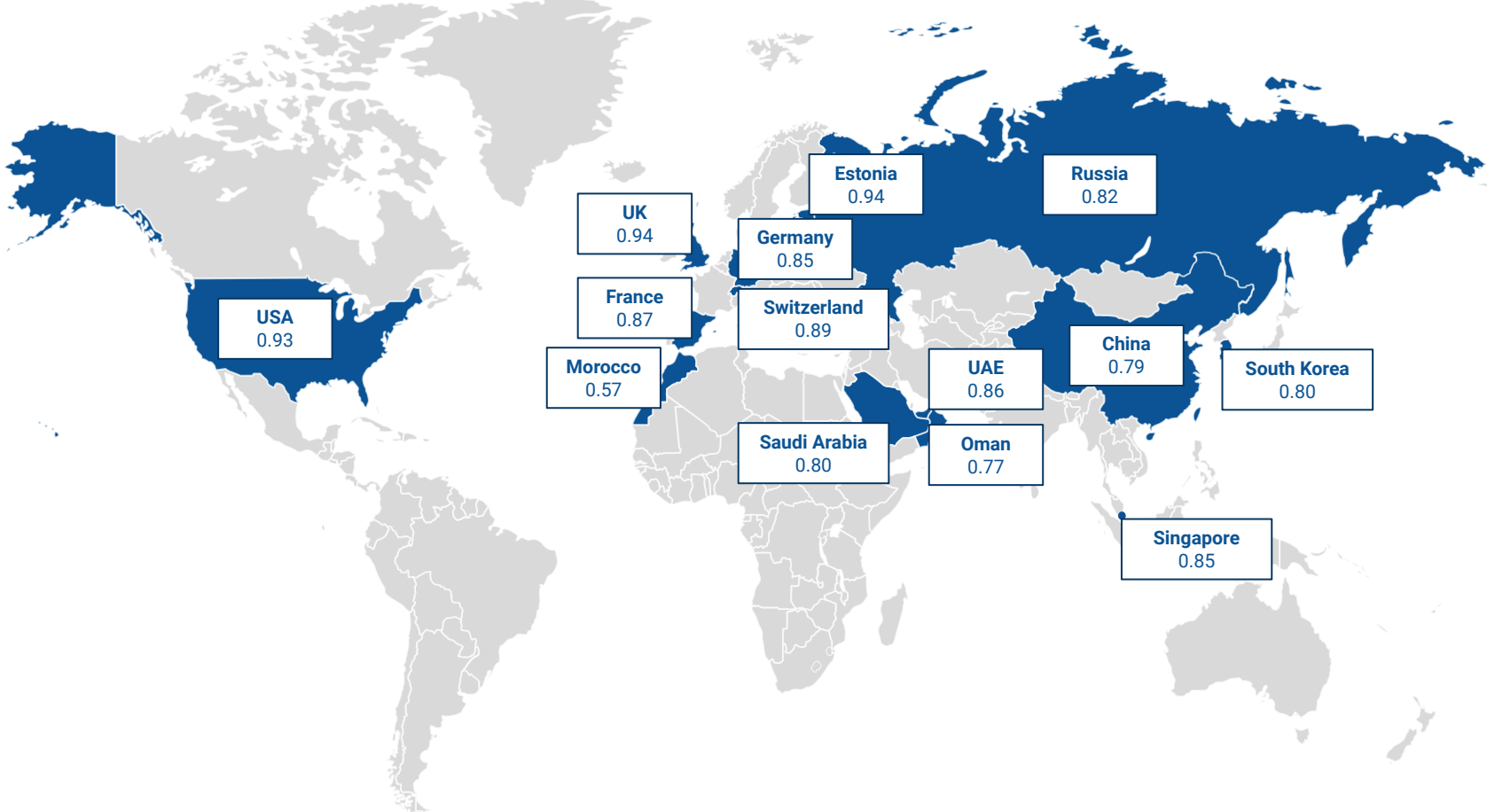
The second assessment includes volume of Gross Domestic Product, volume of Gross Domestic Spending on R&D, Internet access in countries, E-Participation Index and Telecommunication Infrastructure Index by United Nations, Government Effectiveness Index by Global Economy.

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.

E-Government Index 2020 in Observed Countries

UK
0.94

Estonia
0.94

Russia
0.82

Germany
0.85

France
0.87

Switzerland
0.89

USA
0.93

China
0.79

South Korea
0.80

Morocco
0.57

UAE
0.86

Saudi Arabia
0.80

Oman
0.77

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

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

衞生署
Department of Health

- 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: 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.
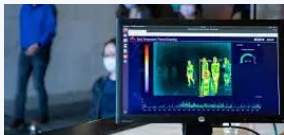
Hong Kong: Hong Kong launched **temperature screening** in crowded places to stop the spread of COVID-19.

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.
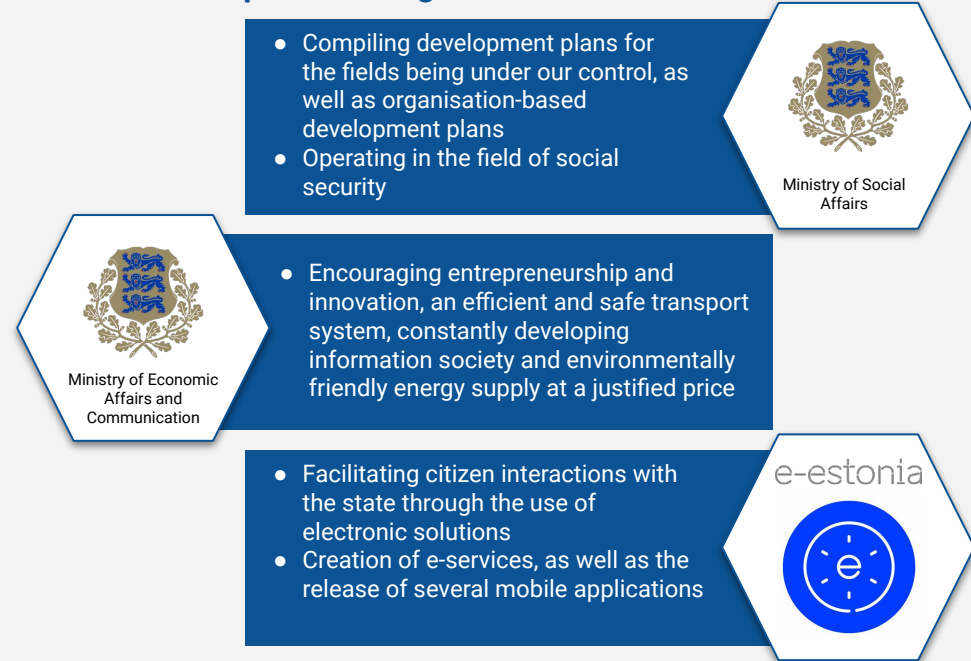
Source: GovHK; Hong Kong Monetary Authority; National Health Commission of the PRC; Accenture - How China is Using Digital and Technologies to Combat COVID-19 - [April 2020]

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: 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.
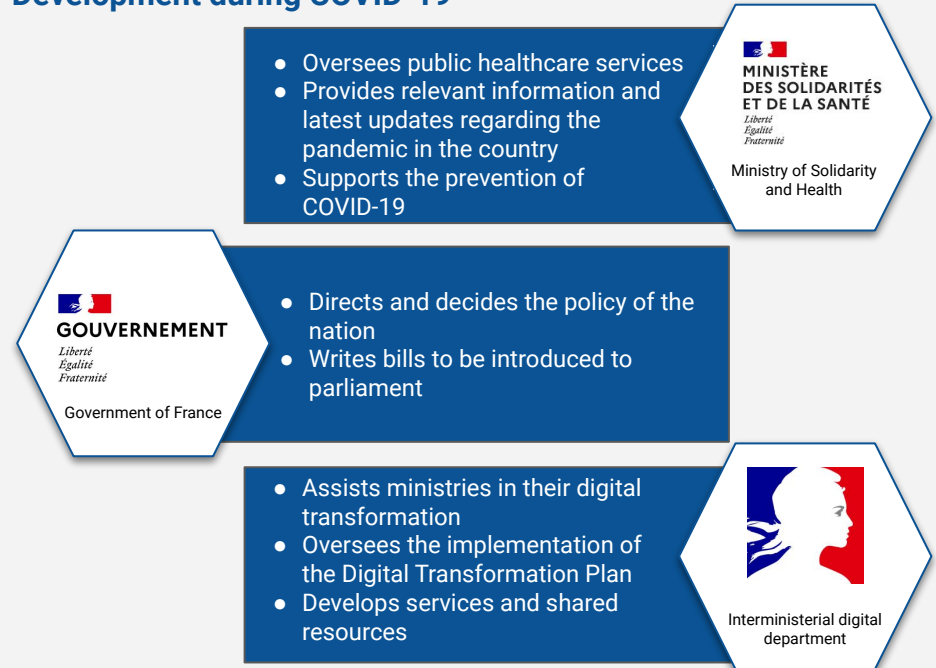
France

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

GOUVERNEMENT
Liberté Égalité Fraternité
Government of France

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

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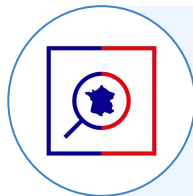- Develops services and shared resources

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: Healthcare Initiatives

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).
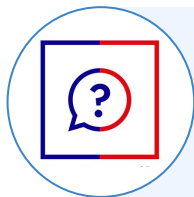
To know the behavior adapted to each individual situation, the Ministry of Solidarity and Health set up **MesConseilsCovid**, which gives personalized advice to act against the virus, depending on the situation and health of each one.

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

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 all 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.

Business & Community

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.

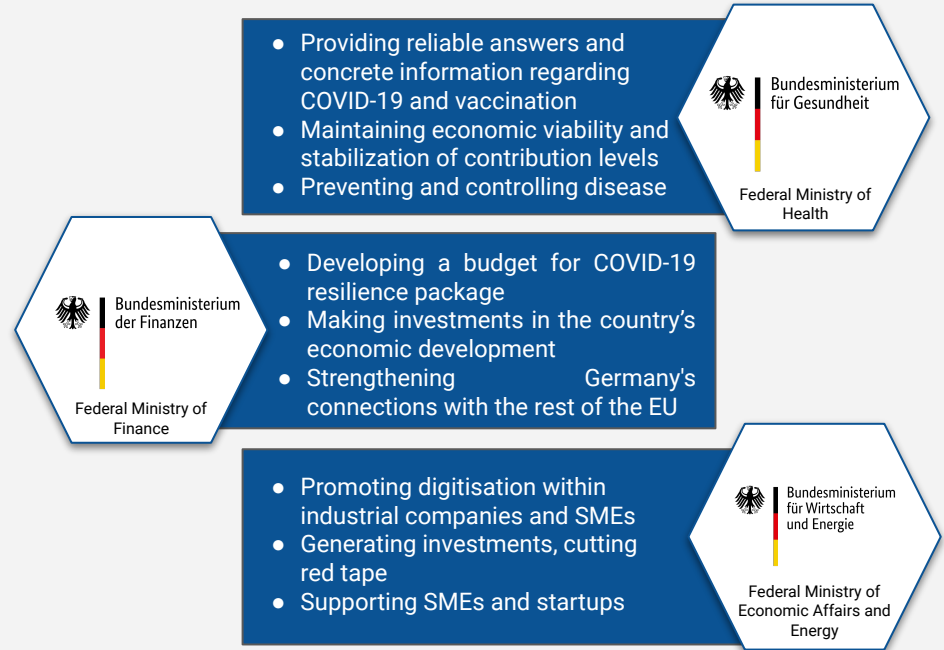Source: Tchap, WebConf, FranceConnect, Osmose

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
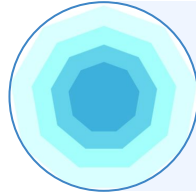Federal Ministry of Economic Affairs and Energy

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

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.
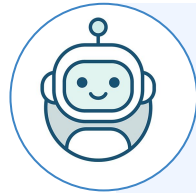
C-19 Chatbot is the first chatbot that the federal government has issued for providing reliable information on COVID-19. It collects data from 10 different federal agencies in order to support citizens with questions on the pandemic in a text-based dialogue scenario.

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.
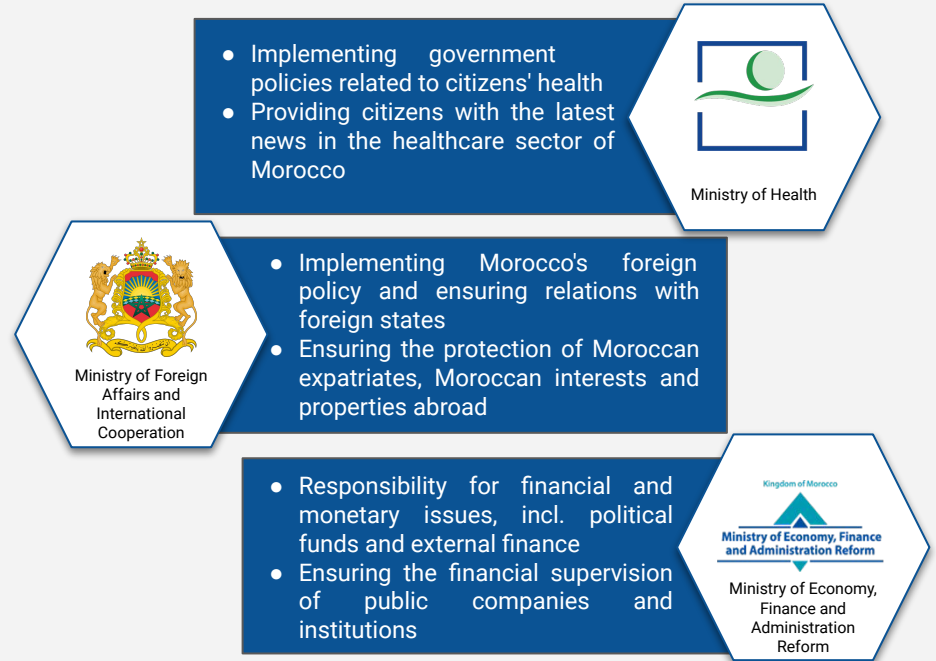
Morocco

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: 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.
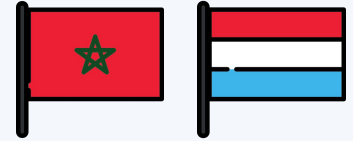
Morocco: Business and Community Initiatives

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.
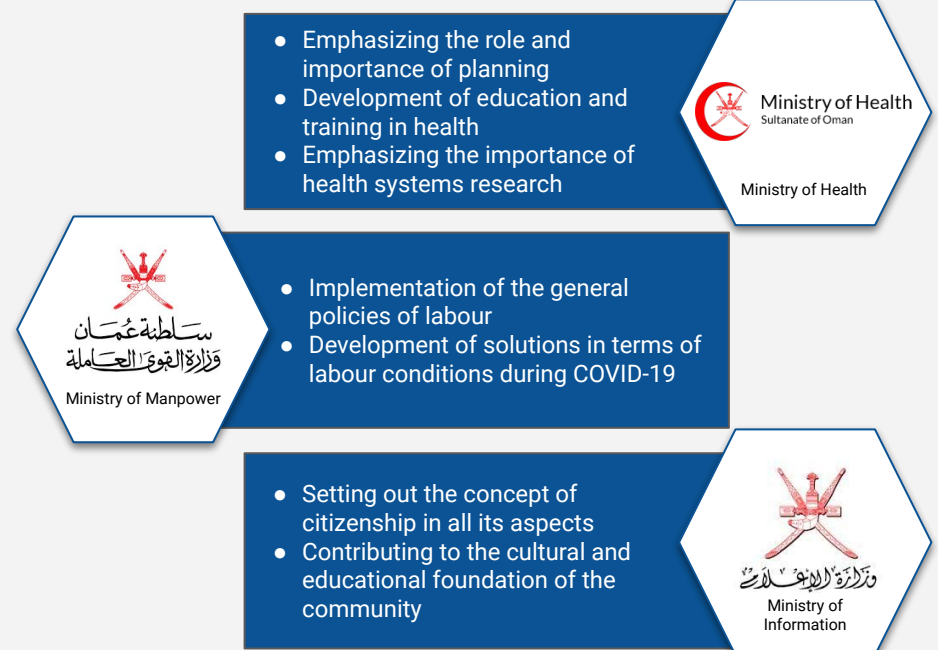
Oman

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

Ministry of Manpower

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

Ministry of Information

*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

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.

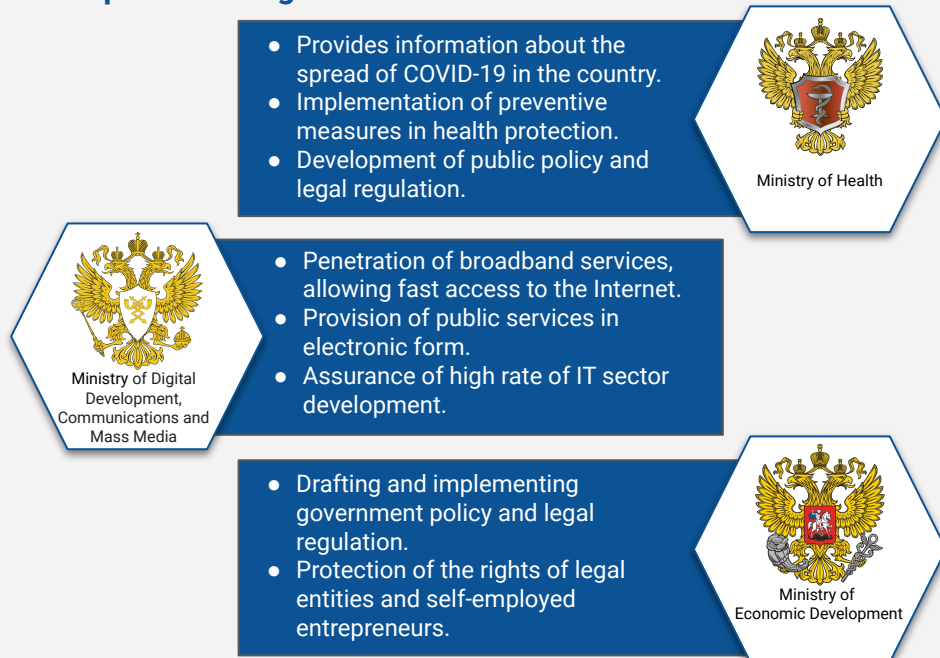Source: Apple Store, Omanuna, Google Play Store, Customs of Oman

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: 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.

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

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

Human Resources and Social Development

Human Resources and Social Development

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

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.

Source: Trading Economics, United Nations, Transparency, WIPO, Media Overview

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.
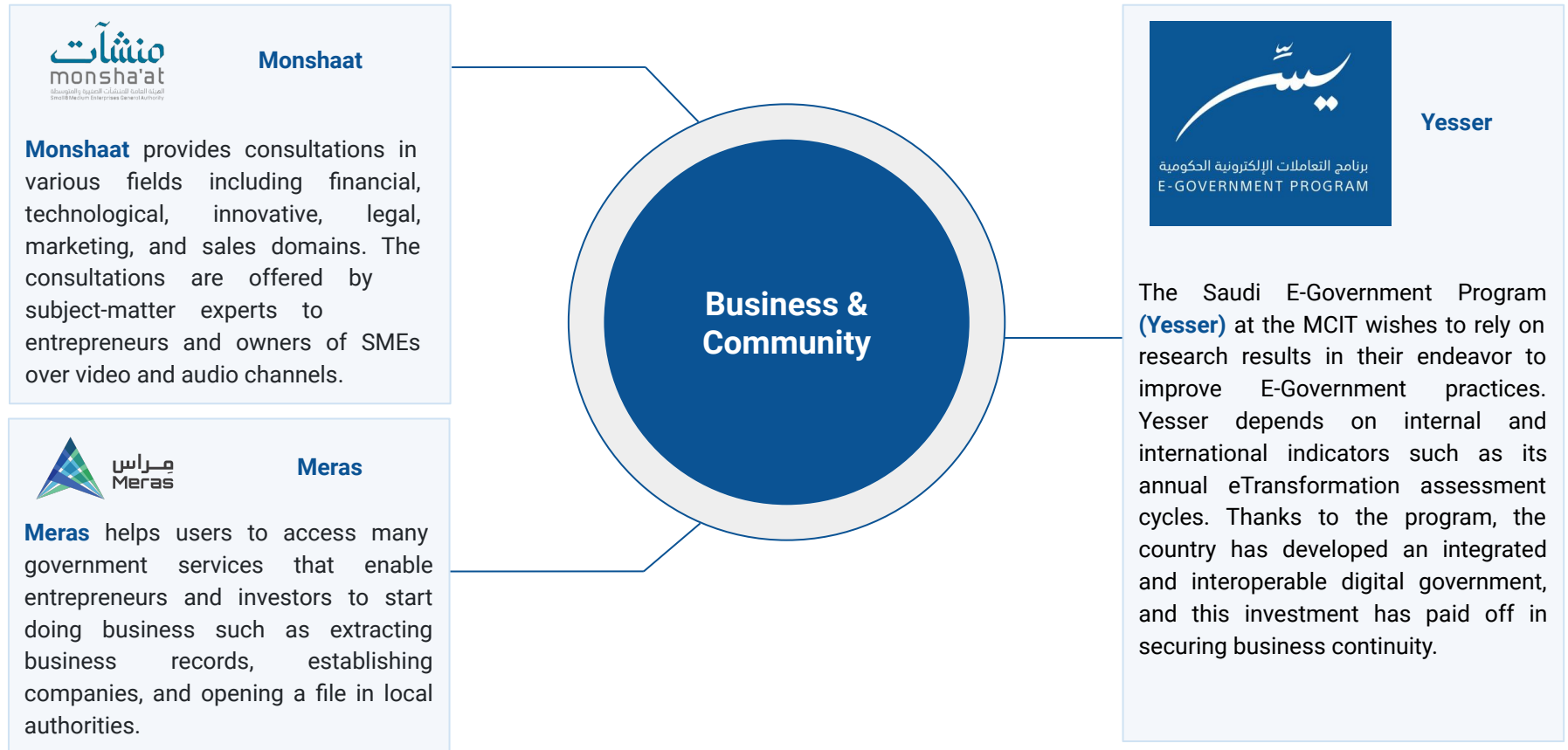
Sehhaty App aims to enable users to access health information and medical e-services provided by different health organizations in the Kingdom, such as vital signs updates, tracking prescribed medicine, retrieving and sharing sick leaves, and other services .

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.

Source: Worldbank, my.gov.sa

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: 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).

MINISTRY OF MANPOWER
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.

Business & Community*

gb gobusiness SINGAPORE

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.

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

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*

I-KOREA 4.0
사람 중심의 4차산업혁명 실현

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

Ministry of Science, ICT and Future Planning

KCDC
Korea Centers for Disease Control & Prevention

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

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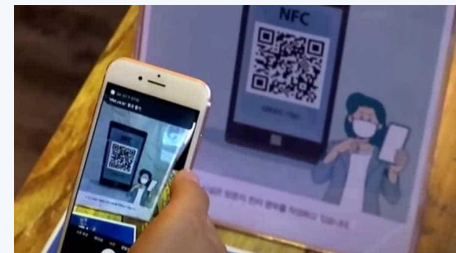
Visitors of nightclubs, bars, karaoke clubs, daytime discos, indoor gyms that hold group exercises, and indoor standing concert halls, will be required to use any of a number of commercially available apps to generate a one-time, **personalized QR code** that can be scanned at the door to track coronavirus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

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: 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.

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

وزارة الصحة ووقاية المجتمع
MINISTRY OF HEALTH & PREVENTION
Ministry of Health & Prevention

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

United Arab Emirates
Ministry of Economy
Ministry of Economy

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

UNITED ARAB EMIRATES
MINISTRY OF CABINET AFFAIRS
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.

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

United Arab Emirates: Healthcare Initiatives

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.

وزارة الصـــحـــة و وقــايــة الـمـجـتـمـع

MINISTRY OF HEALTH & PREVENTION

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 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*

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

GOV.UK

- Reduce pressure on frontline services
- Make health and care services more efficient
- Improve health and care outcomes, people's experiences

NHS
National Health Service

- Offers an overview of all funding and services offered by public sector organisations across Scotland
- Provides businesses with information, advice and support

FindBusinessSupport.gov.scot
Find Business 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: 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.

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.

Business & Community

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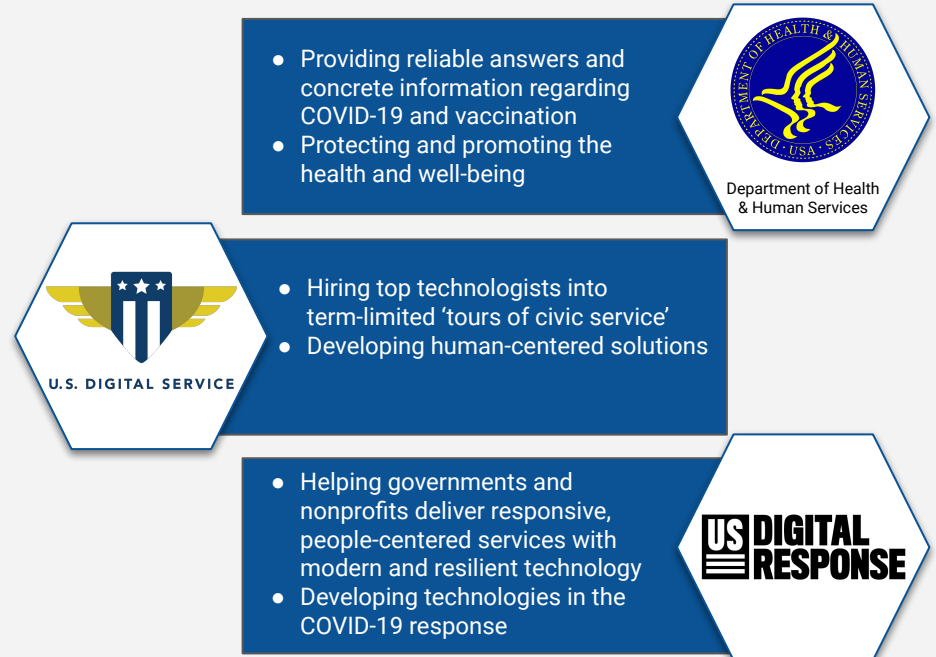
*This list does not include all ministries; all government bodies take part in the digital transformation within their areas of responsibilities.

United States of America: 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

Contributors

"Government of Abu Dhabi is responsible for the development of GovTech strategy and aims to enable rapid digital transformation of government services."

"ADD is dealing with the digital transformation of the Moroccan administration through the "Smart Government" that concerns the development of digital public services"

"01Gov is the Arab platform for government innovation, that has designed and delivered the first virtual government innovation lab in the Middle East as a response to the COVID-19 outbreak."

"WIN Solutions aims to support governmental entities. It was approached by a government in the MENA region in order to develop a software to monitor the performance of the ministries."

"SDAIA aims to create a data-driven and AI-supported government and economy to help achieve Vision 2030's goals, as well as Saudi Arabia's highest potential."

"GovMind enable public administrations to make use of the full potential of GovTech through the development of scalable knowledge offerings that make GovTech understandable and accessible, such as the GovMind Insights Service."

"IT-Grad is dealing with the creation of cloud IT infrastructure to accelerate tasks and digitalize the public sector."

"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."

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.
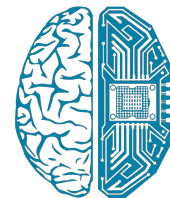
DEEP KNOWLEDGE ANALYTICS
GOVTECH DIVISION
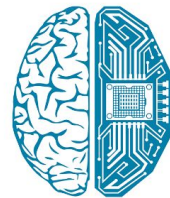
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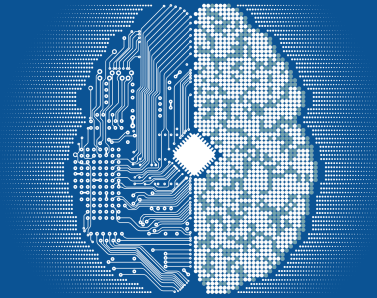
Link to the Report: www.govtech.global/govtech-special-edition-q3-2021	
E-mail: info@govtech.global	Website: www.govtech.global