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# China’s rise in digital governance

## Deploying technology to deliver public goods at home and abroad

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# Unpacking China's digital governance ambitions: development and control

| | At a glance | Details |
|---|---|---|
| **Digital governance in China** | ▪ Making government affairs and public services **more efficient** through digital technologies | The Chinese Communist Party (CCP) has put great effort into enhancing its governance capabilities through ICT. Under the previous Five-Year Plan (FYP), the **"Internet Plus" strategy** set in motion policies aimed at digitalizing public services (e.g., health, education) and applying technology to solve challenges that could threaten the leadership's legitimacy |
| **Key features** | ▪ **Convenience and social control** go hand in hand | Under Xi Jinping, the CCP has greatly expanded efforts to modernize social and urban governance through new technologies such as AI and Big Data. Chinese leaders view digital technologies as key ingredients of "social management" (社会管理), i.e., organizing political and social control in such a way as to **prevent risks to stability and regime security** |
| **Example tools: smart cities** | ▪ **500 projects** "ready or under construction" as of January 2019, according to state media | One of several e-government programs, the **smart city (智慧城市) campaign** originated from urban informatization and policing programs in the 1990s and it has been accelerated since the 13th FYP. In China, as elsewhere, smart cities can improve public welfare and streamline public service provision, but they are also linked to intrusive surveillance programs, like Safe Cities (平安城市) and Skynet (天网) |

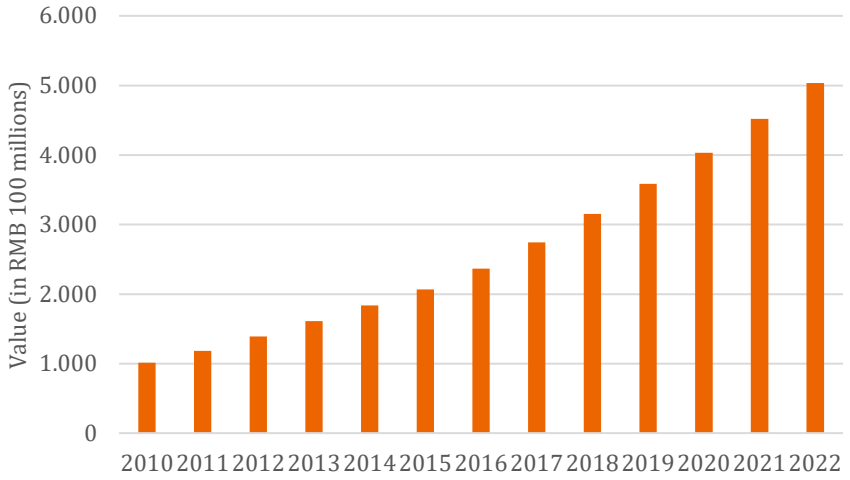
## Exporting e-government services

- **Exporting smart cities** is an explicit component of China's Belt and Road Initiative (BRI), Xi's signature foreign policy initiative.
- **398** instances of Chinese firms exporting smart city technologies, according to the U.S.-China Economic and Security Review Commission
- From **policing platforms** to projects seeking to **improve utility management and reduce traffic**, Chinese technologies are now deeply present in the lives of many urban residents around the world
- In addition to integrated smart city platforms, more and more public administrations across the Global South are choosing Chinese providers for:
  - **E-government** systems
  - **Smart health** solutions
  - **Digital education** tools and services
- Increasingly, China is **financing technology-enabled development** and sharing its domestic experience with other countries

# China continues to invest in e-government and smart city construction at home

## China's total investment in e-government grows by more than 15% YOY...

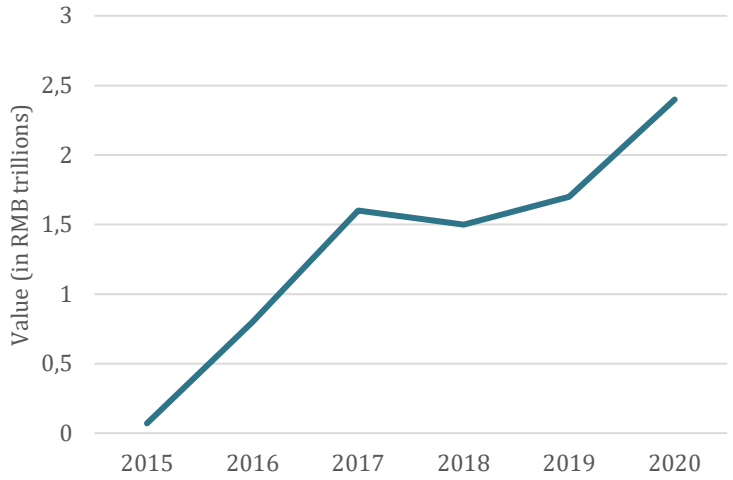
Actual and projected scale of investment, 2000-2022




- According to market research firm Qianzhan, the annual growth rate of e-government investment surpasses the growth rate of overall IT expenditure. By 2022, the market size is expected to exceed **RMB 500 billion (EUR 70 billion)**
- Building on existing initiatives, Beijing seeks to turbocharge the integration of digital technologies and government services over the next five years, as a new plan for government informatization makes clear. A priority is to overcome fragmentation and data islands **to create a unified government information system**

## ... And smart city spending is being ramped up

Scale of investment in Chinese smart city projects, 2015-2020




- A survey by the China Academy for Information and Communications Technology (CAICT), the MIIT's top think tank, says that total investment in smart city projects reached **RMB 2.4 trillion (EUR 334 billion)** in 2020, with the health and education sectors making the largest contribution
- Local governments are jumping on the bandwagon as Beijing has identified the digital transformation of the real economy and governance as a **policy priority under the new FYP**. While this could spur growth and make urban governance and public services more efficient, there is a looming risk of wasteful investments and inefficiencies

*Sources: Qianzhan; CAICT (2021), Research Report on New Smart City Industry Atlas; central and local government documents*



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# Beijing is also promoting its model overseas...

## Policy support and outreach through technology-focused summits

### Policy support for international cooperation

| | |
|---|---|
| The State Council's **13th Five-Year National Informatization Plan (2016-2020)** encourages cooperation with BRI countries on smart cities and telemedicine | Dec 2016 |
| During the **first Belt and Road Forum**, Xi Jinping calls for cooperation on "smart city construction" as part of building a Digital Silk Road (数字丝绸之路) | May 2017 |
| The **China-Africa Cooperation Beijing Action Plan (2019-2021)** affirms China's support in building African smart cities, with a focus on safeguarding public safety and countering crime and terrorism | Sep 2018 |
| Chinese and ASEAN leaders launch a **Smart City Cooperation Initiative** to exchange best practices, harmonize standards, and implement joint projects and city partnerships | Nov 2019 |
| Strengthening smart city cooperation with ASEAN is listed as a task in the **14th Five-Year Plan for the Development of the Digital Economy** | May 2021 |

### World AI Conference

- Under the theme "Intelligent Connectivity, Inspirational Cities", the 2021 edition of the WAIC (世界人工智能大会) focused on the **digital transformation of urban management**. Like at the WIC the year before, anti-epidemic solutions took center stage
- Representatives from several countries learnt about **Shanghai's e-government platform,** which has attracted 14 million monthly active users within a total population of over 24 million, allowing for the online handling of administrative procedures. Shanghai won the award of smart city of the year at the 2020 Smart City Expo World Congress
- In addition to the 2021 WAIC, several **expos**, such as the China Smart City Expo 2021, are devoted to smart cities. In normal times when international travel is possible, they target both domestic and international audiences

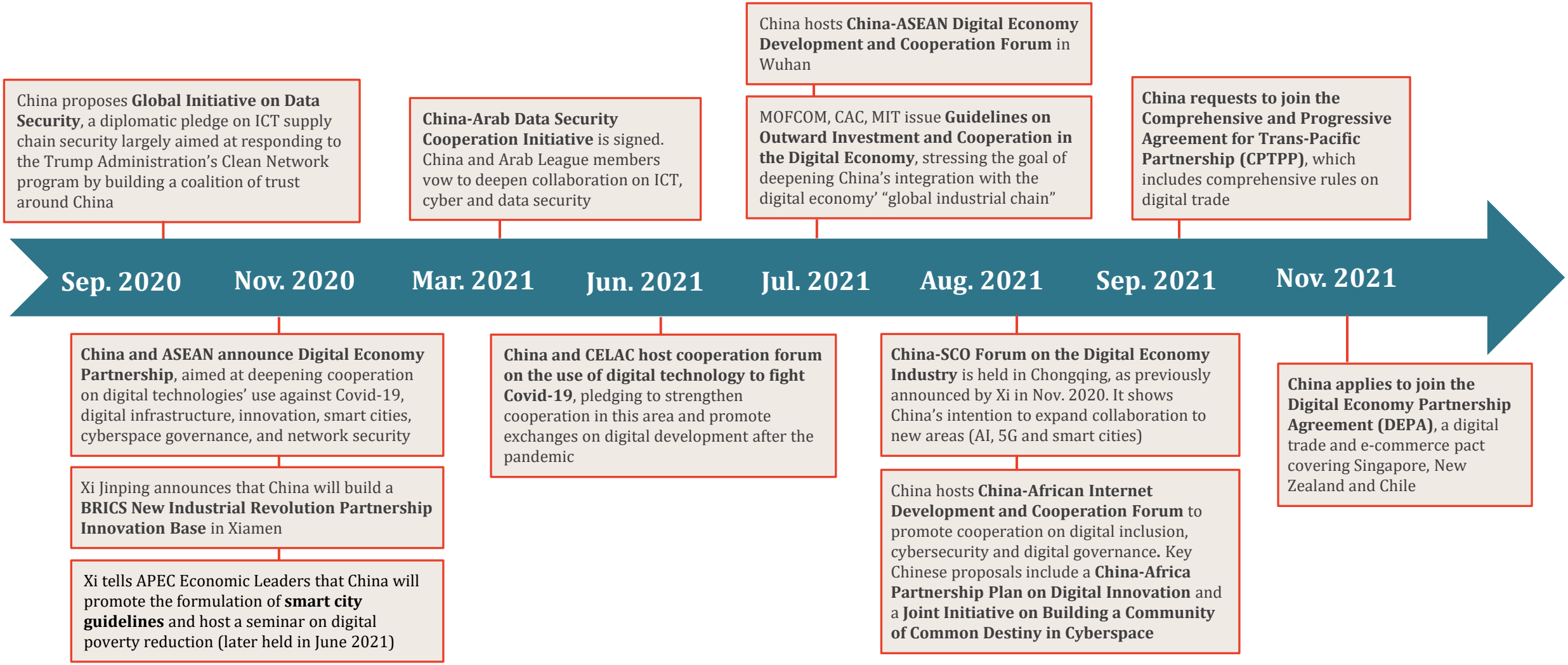
### World Internet Conference

- The WIC (世界互联网大会), an annual forum launched in 2014, represents the main platform through which the party-state strives to **promote its vision for global internet governance**
- A centerpiece of China's vision is the concept of "**community of common destiny in cyberspace**" (网络空间命运共同体), which stresses, *inter alia*, closing the digital divide in line with the UN's 2030 Agenda
- **Covid-19 took center stage** during the 2020 edition, with government officials and companies showcasing China's success at containing the pandemic with technology
- The 2020 communique mentioned the **use of ICT to upgrade public services** including "cultural education, environmental protection, urban planning, community management and healthcare", and sharing experiences in the use of digital tools to respond to emergencies such as outbreaks and natural disasters

*Sources: MERICS based on conference reports, summit readouts and policy documents*

# … and investing heavily in "digital" diplomacy towards the Global South

Key events, official pronouncements and diplomatic initiatives on digital economy cooperation (2020-2021)




*Source: MERICS*



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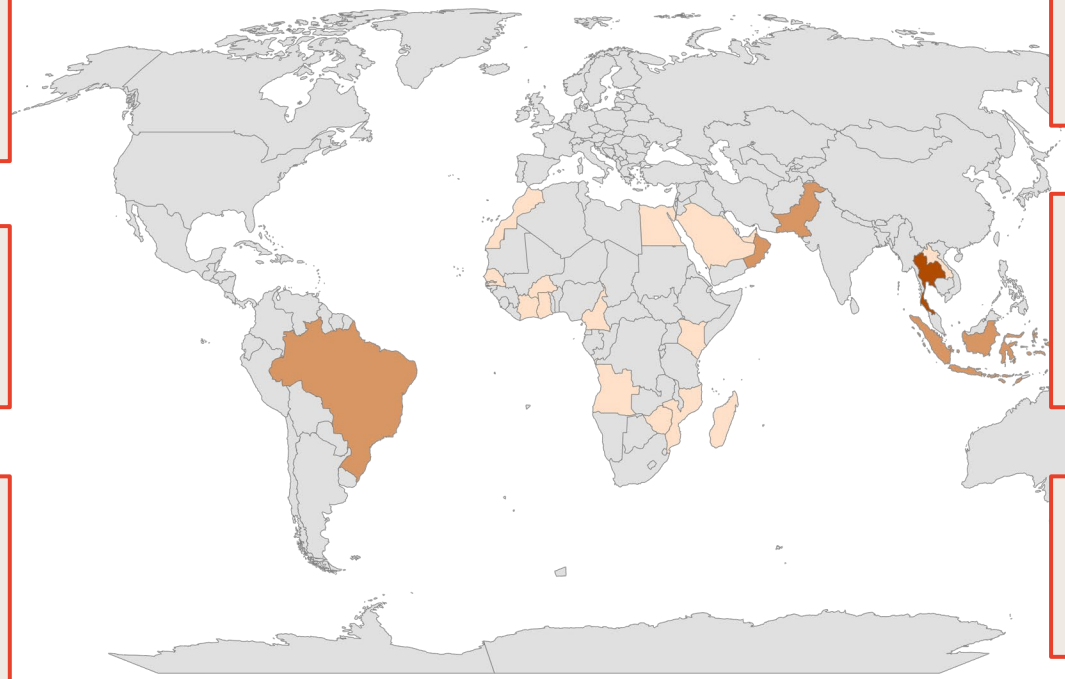
# Chinese actors supply digital solutions for a range of public services and utilities

## Huawei leads the charge

**Ghana:** The parliament approves a EUR 88 million loan from China's Development Bank to fund the construction of an intelligent traffic monitoring system in Accra. Implemented by Huawei, the project aims to support the police in identifying traffic violators

**Burkina Faso:** Backed by a EUR 85 million loan from China's Exim Bank, the country will deploy 800km of optical fiber and a Huawei-powered smart city system. Around 900 surveillance cameras will be installed to tackle urban crime and Jihadist terrorism

**Senegal:** The president announces that all government data and platforms will be transferred to a EUR 70 million national data center, which was built by Huawei and backed by a Chinese government loan. The data center is touted as strengthening Senegal's digital sovereignty



**Pakistan:** Eastern Punjab signs an MoU with Huawei to build a safe and smart city on the Ravi River, which includes the installation of sensors to monitor reforestation. In Islamabad, Huawei will provide trainings on cloud computing, Big Data and AI

**Saudi Arabia:** Huawei inks a contract with a Chinese construction and engineering company to build a solar PV battery energy storage project in Saudi Arabia. The company is also involved in the construction of a solar-powered data center in the UAE

**Thailand:** Huawei announces that it will open its third data center in the country. It also unveils a 5G Ecosystem Innovation Center and was picked by the national carrier to build Southeast Asia's first OTN premium private line network

*Note: Selection of announced or completed projects implemented and/or funded by Chinese actors, 2020-2021*

*Source: MERICS*

# Countries across the Global South are choosing Chinese e-government technology

## Public administrations make their own calculations in choosing priorities and providers

### Zimbabwe

- **Description**: The government partnered with Inspur in 2018 for a multi-million program to modernize the public sector through ICT. A data center for storing all government data opened in February 2021. Inspur had previously supplied technology and training for digitizing the taxation administration
- **Concerns:** Digital rights experts worry about the non-transparent centralization of citizens' data in the country. After working with Chinese AI firm CloudWalk on a national facial database, the government has now picked an undisclosed private provider to create a national biometric database linked to digital ID cards and passports
- **Provider:**

inspur 浪潮

### Cape Verde

- **Description**: With funding from China's Exim Bank, the Operational Nucleus for the Information Society "developed more than 150 websites and 77 types of eGovernment software, covering social security, electronic elections, budget management, distance education and healthcare, and Enterprise Resource Planning (ERP)"
- **Concerns**: In November 2020, the e-government network went offline for days following a malware attack. Huawei had already investigated and acted upon the responsible ransomware when it spread across the world three years earlier, which raises questions about the cybersecurity standards of the company's solutions for government clients
- **Provider:**

HUAWEI

### Bangladesh

- **Description:** Government agencies use a national data center built by ZTE and funded by Exim Bank. Exim also funded part of the national ICT infra-network project, in which Huawei extended the network backbone to government offices at county level and deployed terminal safety management and video conferencing systems
- **Concerns**: China's role in the implementation of the Digital Bangladesh vision can bring tangible benefits, but it also raises questions of potential technological dependencies. In 2021, the small country once again sought Chinese investment to reduce the digital divide between rural and urban areas through expanded 4G connectivity
- **Providers:**

ZTE HUAWEI

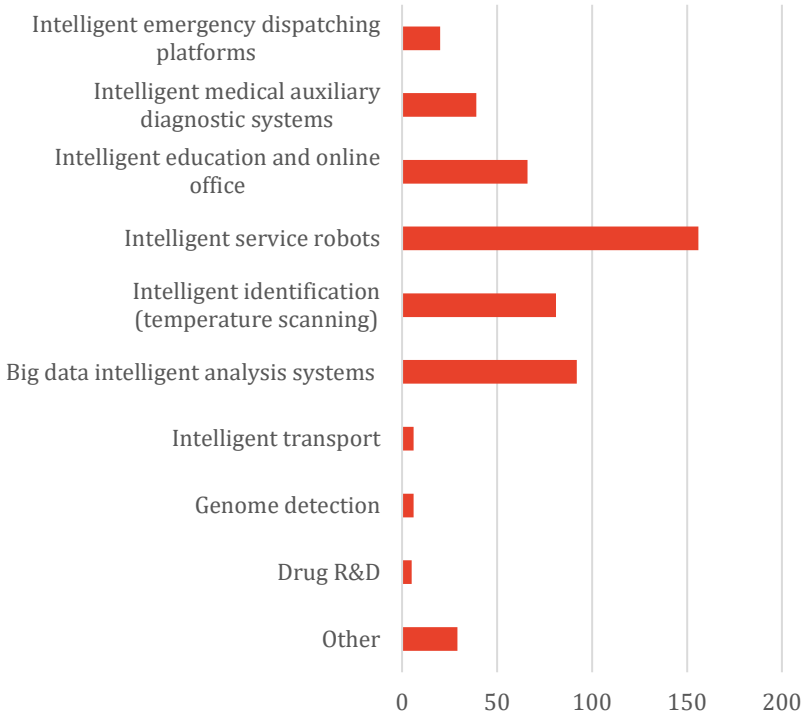
*Source: MERICS based on media reports and company websites*

# Healthcare: tech solutions for “epidemic prevention and control” go global

## Technologies that contain Covid-19 grew out of China’s surveillance state

### Data-driven technologies were instrumental to China’s Covid-19 fight...

Analysis of 500 AI solutions submitted to the AIIA




### ... tech firms capitalized on the opportunity to export their solutions

- **Ecuador**: Two hospitals use an AI-assisted auxiliary diagnostic system developed by Huawei Cloud and Huiying Medical Technology for rapid Covid-19 screening
- **Italy**: A hospital in Rome is the first in Europe to license an AI-enabled CT scanning software developed by Beijing-based startup Infervision and the Wuhan Tongji Hospital
- **Morocco**: DJI drones are used for the disinfection of public spaces, public service announcements and aerial surveillance
- **South Korea**: iFlytek works with a local partner to help health authorities check citizens’ health status through AI-powered phone calls
- **Malaysia**: Sensetime’s combined system of thermal scanning and facial recognition is deployed to spot people without a mask
- **Uganda**: The Ministry of Health and several hospitals use videoconferencing equipment donated by Huawei

### There are human rights costs to the export of Chinese health tech

- Many of the companies that supplied Covid-19-related solutions are complicit with **human rights violations in China’s Xinjiang region**, where they play a major role in supplying systems used for the monitoring and extra-judicial detention of Muslim minorities
- Surveillance hardware makers like **Hikvision and Dahua**, for example, repurposed their thermal cameras (which often form part of China’s smart city infrastructure) for Covid-19 tracking
- The access control solution developed by AI firm **Megvii**, which cooperates closely with police authorities across Xinjiang and has patented software that can spot Uyghur faces, was approved for import into the EU Single Market

*Source: MERICS; Artificial Intelligence Industry Alliance (AIIA, 2020), Research Report on AI Assisting Epidemic Prevention and Control for Covid-19; media reports*



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# Education: Chinese ed-tech firms make inroads into foreign schools

## NetDragon's exports along the Digital Silk Road are not politically neutral

### The digitalization of education is accelerating: NetDragon leads the way

- NetDragon Websoft (网龙网络) is a **leading Chinese online game developer and operator** headquartered in Fuzhou and listed on the Hong Kong stock exchange
- In 2013, Baidu acquired NetDragon's major online app marketplace and mobile game operator **91 Wireless** for nearly USD 2 billion
- In recent years, the company **has increasingly focused on the digital education business**, applying a combination of emerging technologies (VR, AR, AI, 3D, 5G and Big Data) to the development of smart classrooms and other EdTech products

### … exporting ed-tech products along the Digital Silk Road

- NetDragon claims to have provided education services to more than 2 million classrooms and 100 million users in **192 countries and regions worldwide**
- **Recent examples** include a partnership with Egypt's Ministry of Education and the establishment of a Robotics and AI Education Center with the Serbian government, which will also train teachers on education informatization
- Entrusted by the Fujian provincial government, NetDragon is expanding **digital education cooperation with BRI countries**
  - For four years in a row, it has organized an education-focused **Digital Silk Road sub-forum** at the Digital China Summit in Fuzhou
  - NetDragon is building a **digital education base in Fuzhou** to "propose China's digital education solutions to the world", including by creating content on behalf of foreign governments

### Education is a key part of the party-state's cultural export push

- Despite being a private company, NetDragon professes to **adhere to "core socialist values"** and advocate a "civilized cyberspace"
- These statements are not a mere lip service to regulators in response to the recent crackdown on ed-tech and video gaming in China: NetDragon was designated as a **"Key Enterprise of National Cultural Export"** (国家文化出口重点企业), a program jointly overseen by the CCP Central Propaganda Department with the Ministry of Commerce and other state departments and aimed at boosting China's soft power globally
- NetDragon is one of **several Chinese companies implementing digital education solutions abroad**. Tianwen Media (天闻数媒), which is controlled by the Hunan provincial government, has supplied cloud systems for smart classrooms in Macedonia and Uzbekistan, and consulted education ministries in Cameroon and Cambodia

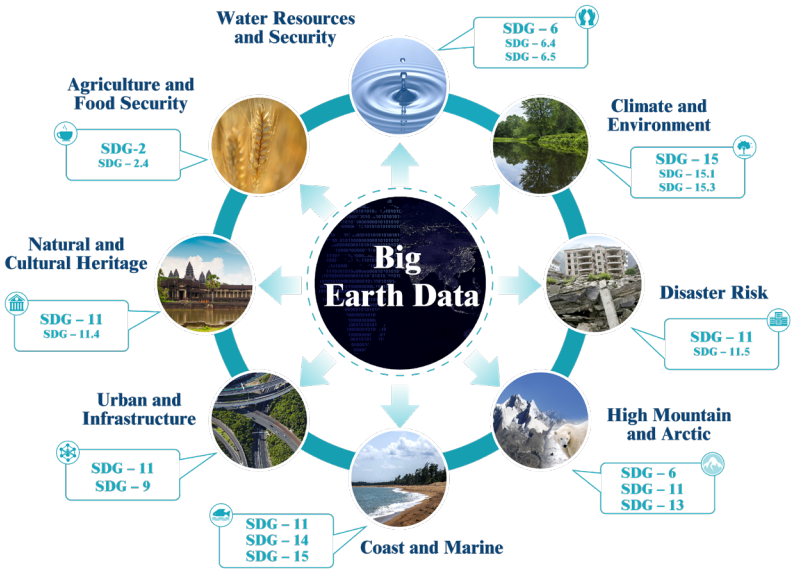
*Source: MERICS; company websites*

# Remote sensing: China applies Big Data to support sustainable development

## The Chinese Academy of Sciences has a program which mirrors the EU's Copernicus

### CAS uses Big Data to tackle global challenges…

Research foci as they relate to the UN's SDGs*




### … and is building a global Earth observation data-sharing platform

- In 2018, the Chinese Academy of Sciences launched the **Big Earth Data Science Engineering Program (CASEarth)** (地球大数据科学工程), a five-year endeavor to address sustainable development challenges through the creation of a Big Earth Data sharing and cloud services platform
- In 2021, the program progressed with the launch of a dedicated **Earth science satellite**, the Guangmu 1 (SDGSAT 1), and the opening of an **International Research Center of Big Data for Sustainable Development Goals (SDGs),** which will gather data from satellites, aircraft, drones, and ground arrays and sensors
- CASEarth both builds on and supports the **Digital Belt and Road Program (DBAR)** which pools data from a range of sources (communication, navigation and remote sensing satellites, as well as oceanic and ground-based stations) to monitor phenomena such as floods and the loss of wildlife; DBAR has established cooperation centers in eight countries, including in Europe (in Italy and Finland)

### Development dividends come with security overtones

- China's initiatives in the field of Earth sciences bring tangible benefits in terms of **promoting environmental sustainability**, particularly across the Global South. CAS' program has helped, among others, study desert locusts in Somalia and Ethiopia, and mangroves in Southeast Asia
- The EU has long utilized and shared Earth observation (EO) data to tackle global challenges through its **Copernicus Program**
- Through the **Dragon 4 cooperation program** jointly run by the European Space Agency and MOST, Chinese and European scientists have used EO data across various scenarios, from disaster risk reduction to the monitoring of oceans and crops
- The **People's Liberation Army (PLA)** is heavily invested in strengthening its remote sensing capabilities. This led the Swedish Defense Research Agency to voice concerns around a CAS-run remote sensing ground station in Kiruna

*Note: *CAS illustration*

*Source: MERICS; CASEearth; Digital Belt and Road (DBAR)*



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# Europe needs to step up its game to support digital development across the globe

## Implications and recommendations for the EU's digital strategy

### China and Europe are advancing competing visions for digital transformation and development

- In its **digital strategy**, further fleshed out in the March 2021 Digital Compass, the EU stressed its ambition to make its "human-centric vision" a global standard, using international partnerships to promote normative and regulatory alignment on issues like e-government and data protection
- The message is echoed in the **Global Gateway**, the EU's global infrastructure initiative. The bloc intends to combine infrastructure, regulatory cooperation, capacity building, and cooperation on digital innovation and research to forge stronger digital partnerships with developing and emerging economies
- As China makes an appealing proposition to governments looking to close the digital divide, **the EU cannot take the influence of its own model for granted**

**D4D Hub**

The **African Union-European Union Digital for Development (D4D) Hub**, a platform for multistakeholder initiatives in support of digital transformation, is a very good step, but the EU's financial commitment (EUR 8 million) seems lacking

### Opportunities and challenges

- Insofar as they **enable growth and sustainable development in third countries**, Chinese digital projects are not at odds with European interests
- Europe-China cooperation in Earth observation and sustainable urbanization, for example, is already underway. Another area where synergies could be explored is **smart grids**, as proposed in the 2016 EU-China Joint White Paper on the Internet of Things
- However, given the **influence that the party-state can exert over private companies**, the involvement of Chinese technology in the digitalization of government services expose recipient countries to enhanced data security risks
- The international expansion of firms implicated in human rights violations or advancing the party state's propaganda, coupled with the Chinese government's efforts to promote its regulatory and governance model, will pose **growing challenges**

### Clearer policy linkage and work with partners are needed

- Recognizing that projecting regulatory power alone is not sufficient, the EU's **new approach to coalition-building in the digital sphere** more clearly links digital innovation with connectivity and development cooperation policies
- The **D4D Hub**, launched in December 2020 and recently expanded to cover Latin America and the Caribbean, is a step in the right direction
- The EU should further **clarify the relationship between its Global Gateway and digital strategy**, also considering that the planned publication of a Global Digital Cooperation Strategy in 2021 did not materialize
- European efforts should build synergies with the initiatives of partners such as Japan and the United States, particularly in the Indo-Pacific



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