Carlos Cantú carlos.cantu@bis.org
Gong Cheng gong.cheng@bis.org
Sebastian Doerr sebastian.doerr@bis.org
Jon Frost jon.frost@bis.org
Leonardo Gambacorta leonardo.gambacorta@bis.org

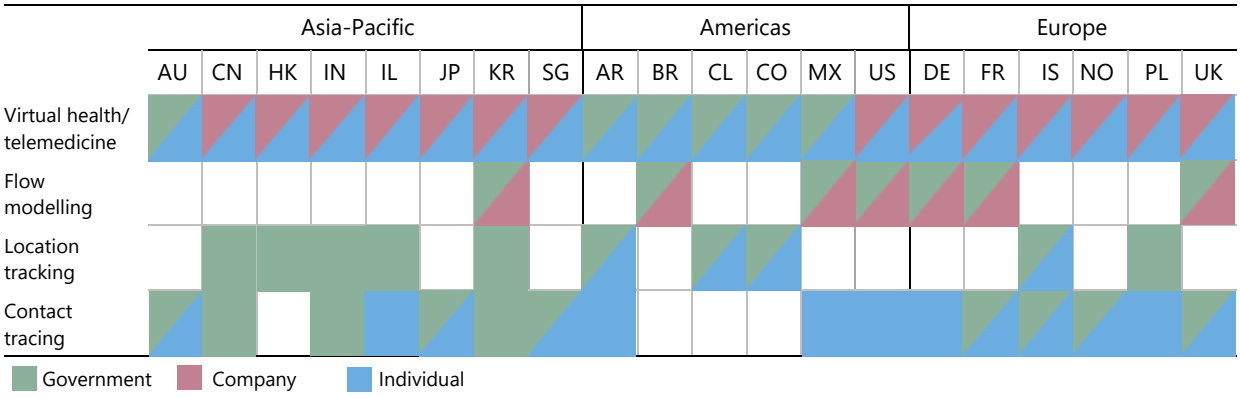
Technology to combat the pandemic: online appendix

This online appendix gives further details on the selected technological applications in Table 1 (below). Applications to combat the pandemic have been classified into four categories by country:

- **Telemedicine** applications provide remote medical consultation and counselling. The exact coverage of telemedicine varies across countries, ranging from new apps to record symptoms and provide Covid-19-related or other medical advice, to hospitals, clinics and new intermediaries offering video consultation with doctors on non-critical situations.
- **Flow modelling** applications detect aggregate movements of people or how many people pass through places and how quickly. This technology often uses aggregated and anonymous geolocation data to generate heat maps, which show if people are abiding by social distancing measures.
- **Location tracking** uses global positioning system (GPS) data or geofencing for individuals who are subject to a quarantine. They can be used to monitor adherence to quarantine measures or, if location information is stored, to create maps that track the virus.
- **Contact tracing** applications track the points of contact between infected people and others. The technology uses GPS and/or Bluetooth. GPS cross-checks the location history of infected people, while Bluetooth stores information on proximity to other phones.

For each case, it is possible to establish – sometimes based on plausible assumptions – which entity controls the data: governments (green), companies (red), individuals (blue) or a combination of entities (for instance, when individual consent is required, or when companies and governments jointly access personal data). Table 2 provides the selected list of applications listed by country in alphabetical order.

Overview of selected technological applications: who controls personal data? Table 1



Colours denote which entities have control over personal data. Where governments and companies both access personal data, or access by governments or companies is conditional on individual consent, the cell displays both colours. Colours within cellsare arranged in the same order as in the legend. Hyperlinks in the table give information on specific applications. Table 2 gives a full list of applications; some are pending or have been discontinued.

Sources: BIS; public data sources.

Overview of selected technological applications: tabular format

Table 2

Category:	Country	Application name[1]	Data[2]	Category:	Country	Application name[1]	Data[2]
Telemedicine	AR	Cuidar Covid-19 Ar	I/G	Location tracking	AR	Cuidate en casa	I/G
	AU	(Telehealth services)	I/G		CL	CoronApp	I/G
	BR	Coronavirus SUS	I/G		CN	Alipay/Tencent Health C	G
	CA	Canada Covid-19 App	I/G		CO	CoronApp	I/G
	CL	CoronApp	I/G		HK	StayHomeSafe	G
	CN	(Various)	I/C		IL	(Mobile phone tracking)	G
	CO	CoronApp-Colombia	I/G		IN	CVD tracker	G
	DE	Health Innovation Hub	I/C		IS	Rakning 19	I/G
	FR	Covidom	I/C		KR	Self-quarantine safety p	G
	HK	(Various)	I/C		PL	Home Quarantine	G
	IL	Sheba TeleTent	I/C	Contact tracing	AR	CoTrack	I/C
	IN	(Various)	I/C		AU	Covidsafe app	I/G
	IS	Sidekickhealth	I/C		CH	DP-3T	I
	JP	Mediplat, LINE, etc.	I/C		CN	Alipay/Tencent	G
	KR	SNUH	I/G		DE	Healthy Together	I
	MX	Covid-19MX	I/G		FR	StopCovid	I/G
	NO	Covid-19 Telemedicine	I/C		IL	Hamagen	I
	PE	Smart Doctor	I/C		IN	Aarogya Setu	I/G
	PL	Medicover	I/C		IS	Rakning 19	I/G
	SG	Doctor Anywhere	I/C		IT	Immuni	I
	UK	NHS 111 Online	I/C		JP	(To be released in May)	I/G
	US	Teladoc	I/C		KR	Corona 100m	G
Flow modelling	BR	InLoco	C/G		MX	CovidRadar.mx	I
	DE	Corona Datenspende	I/G		NO	Contagion Stop	I/G
	FR	(Telecom company info)	C/G		NZ	(To be determined)	TBD
	KR	Coronamap	C/G		PL	ProteGo	I
	MX	(Telecom company info)	C/G		SG	TraceTogether	I/G
	UK	(Telecom company info)	C/G		UK	NHSX	I/G
	US	Google	C/G		US	Google and Apple	I

C = consumer; G = government; I = individual.

[1] The application name includes a hyperlink to the official website or government announcements. Where no official website was available, the hyperlink refers to a news article. Blue shading denotes applications that have been announced but are not available yet. Grey shading denotes an application removed from the market. [2] Refers to the agent who has control over the data collected by the app or technology.

Note: This list provides information on selected technological applications developed to combat the Covid-19 pandemic. It is based on publicly available information, is not meant to be comprehensive and is subject to change. All errors are those of the authors.