CORONA CONTACT TRACING
THE ROLE OF GOVERNMENTS AND TECH GIANTS

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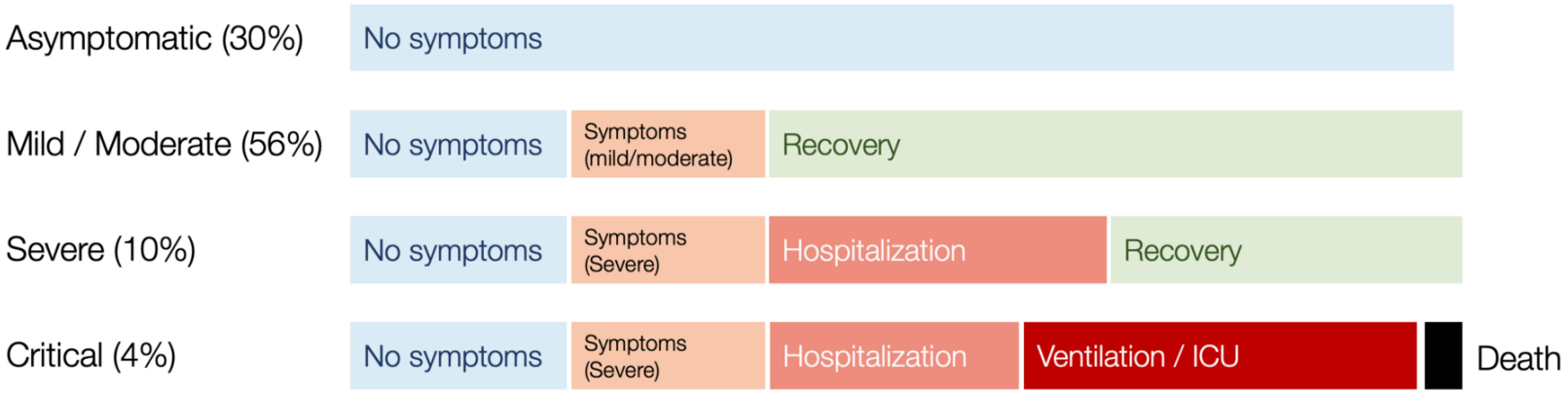
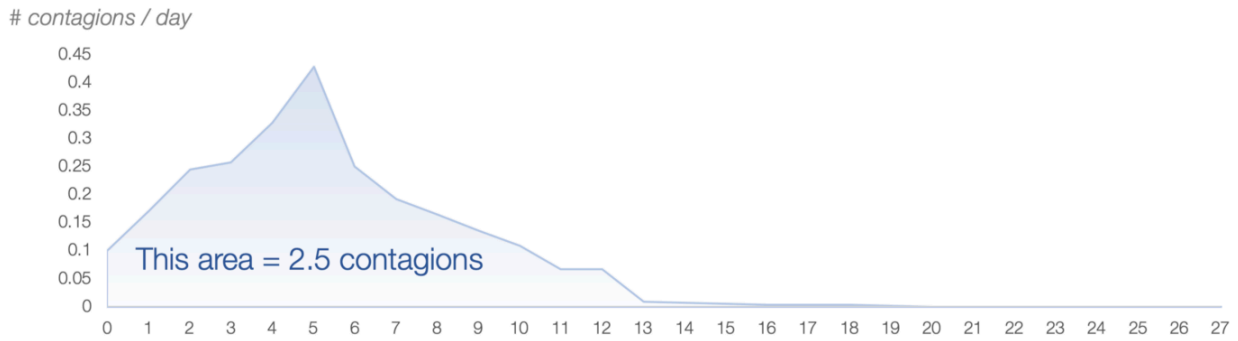
DIGHUM – JULY 2020

A DECEPTIVE ENEMY



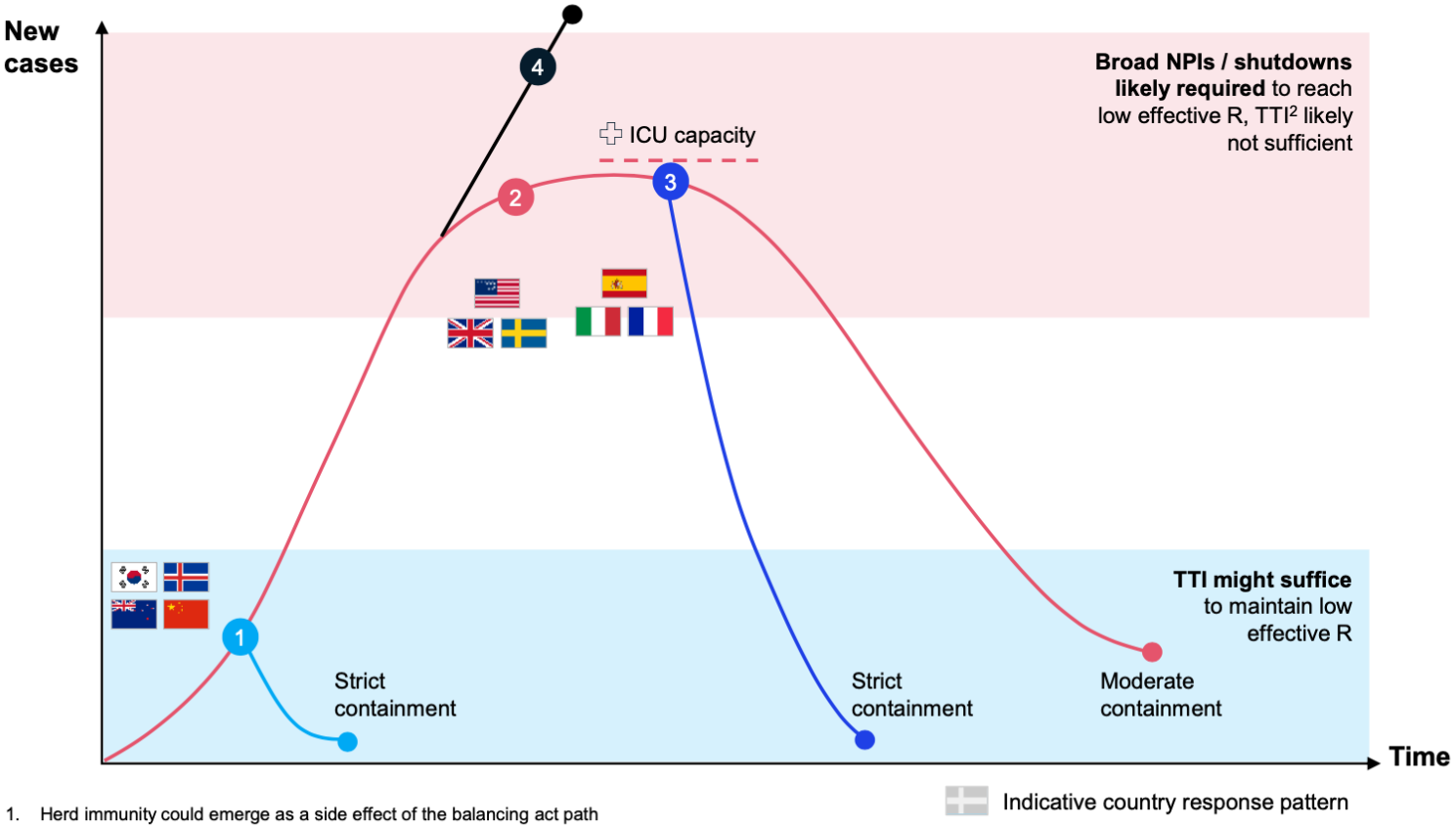


Source: Tomas Pueyo, John Hsu, WHO, Eurosurveillance, Medrxiv, ECDC, The Lancet, Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand, The Incubation Period of Coronavirus Disease 2019 (COVID-19) From Publicly Reported Confirmed Cases: Estimation and Application, Mixing patterns between age groups in social networks.

As of June 4, 2020

Countries are at different parts of the epidemic curve and have chosen different response patterns

Illustrative disease trajectories and potential end-state strategies



1. **Near-zero virus**
   Opening the economy while imposing virus-control measures that stop short of a lockdown

2. **Balancing act: Gradual**[1]
2. **Balancing act: Cycles**[1]
   Staged reopening of the economy, controlling the virus spread within the capacity of the healthcare system

3. **Transition Act**
   Switching from a balancing-act path to a near-zero-virus path by implementing elements of near-zero-virus packages as soon as they are ready

4. **Rapid growth**
   Control responses severely hampered by severe economic, political, societal, or security disruption

1. Herd immunity could emerge as a side effect of the balancing act path
2. Test, Track and Isolate strategy

Source: McKinsey article "Crushing coronavirus uncertainty"

THE ONLY POSSIBLE STRATEGY (WITHOUT A VACCINE):

REDUCE THE ELAPSED TIME BETWEEN SYMPTOMS AND TREATMENT OF PEOPLE AT RISK

THE MANUAL PROCESS IS TOO SLOW AND REQUIRES A LOT OF RESOURCES

TECHNICAL REPORT Resource estimation for contact tracing, quarantine and monitoring activities for COVID-19 cases - EU/EEA

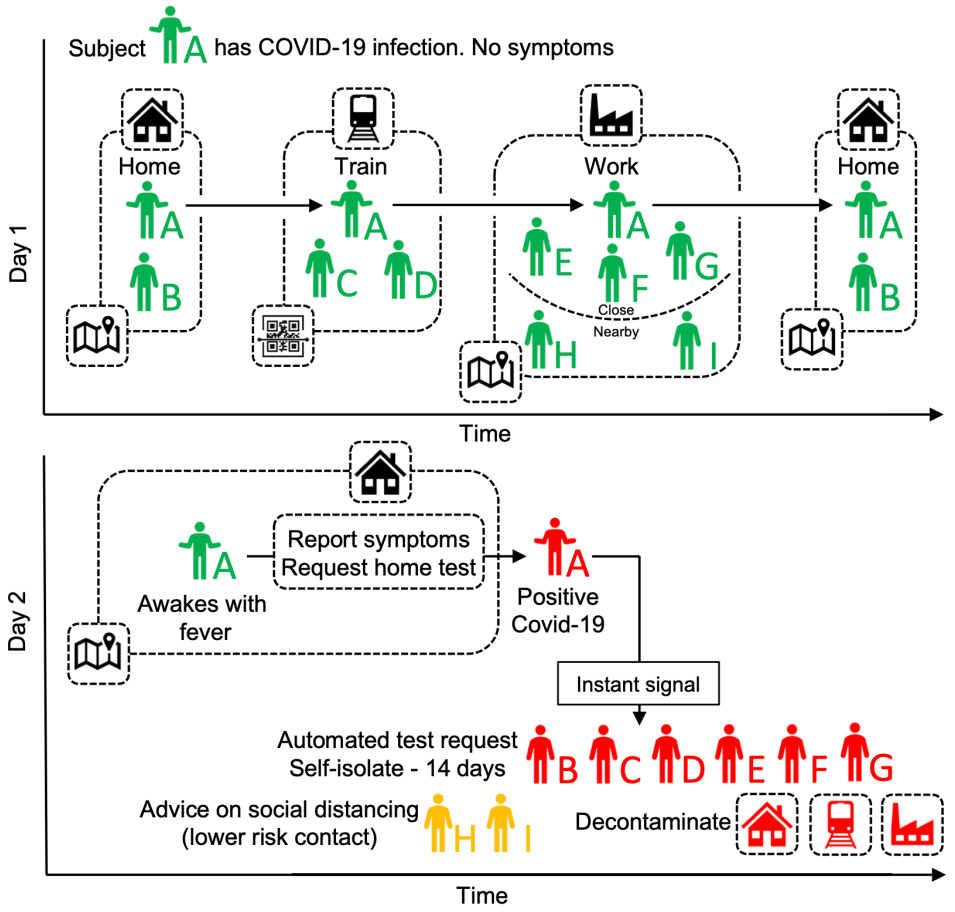
Table 1. Estimated resources needed for contact tracing

Activity	Human resources			Material
	Staff profile	Number of staff	Time (per staff)	
Interview case (*)	HCW/public health staff	One	Two hours	• Phone • Questionnaire • Translation services (if necessary)
Create contact list and retrieve personal information. This may require collaboration with other entities, including transport authorities, companies, and hospitals.	Administrative or other services	One	Six hours	
Enter interview in the system (e.g. electronic information system or excel file)	HCW/ public health staff	One	One hour	• Database
Classification of contacts as high or low-risk exposure; including prioritisation of whom to contact.	Two HCW/ public health staff One administrative or other services	Three	Two hours	
Initial interview by phone with contacts. Through this interview, staff will establish the contacts' level of exposure, ask about symptoms and other personal information. Staff will also provide information about infection control measures, symptom monitoring and other precautionary measures.	HCW/ public health staff	One	45 min.	• Phone • Questionnaire
Enter information from interview into database	HCW/ public health staff	One	15 min.	• Database

HCW= healthcare worker; min= minutes.

Source ECDC

DIGITAL CONTACT TRACING



Source: Univ. of Oxford.

ISSUES AND PROBLEMS

EFFECTIVENESS

- Most solutions are based on BLE (Bluetooth Low Energy) only
- Bluetooth is not enough
  - Precision
  - False positives
  - GPS would help identify critical spots

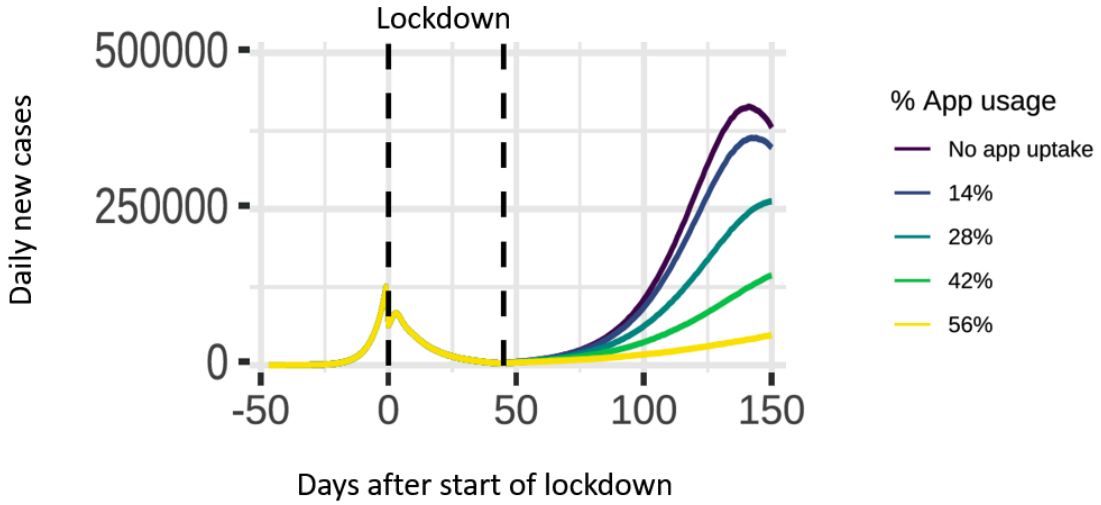
PRIVACY

- Telco Operators, social networks, and service providers in general already know a lot about us
- Nevertheless, tracing performed by governments has raised a lot of concerns
  - Exposure notification
- In reality, no critical data are collected

ADOPTION

- It is not necessary to have a 100% adoption of the tracing app
- However, effectiveness increases with adoption

If we reduce potentially infectious contacts by 20%, and 56% of the population use the app, we can considerably slow the epidemic. The app has an effect at all levels of uptake.

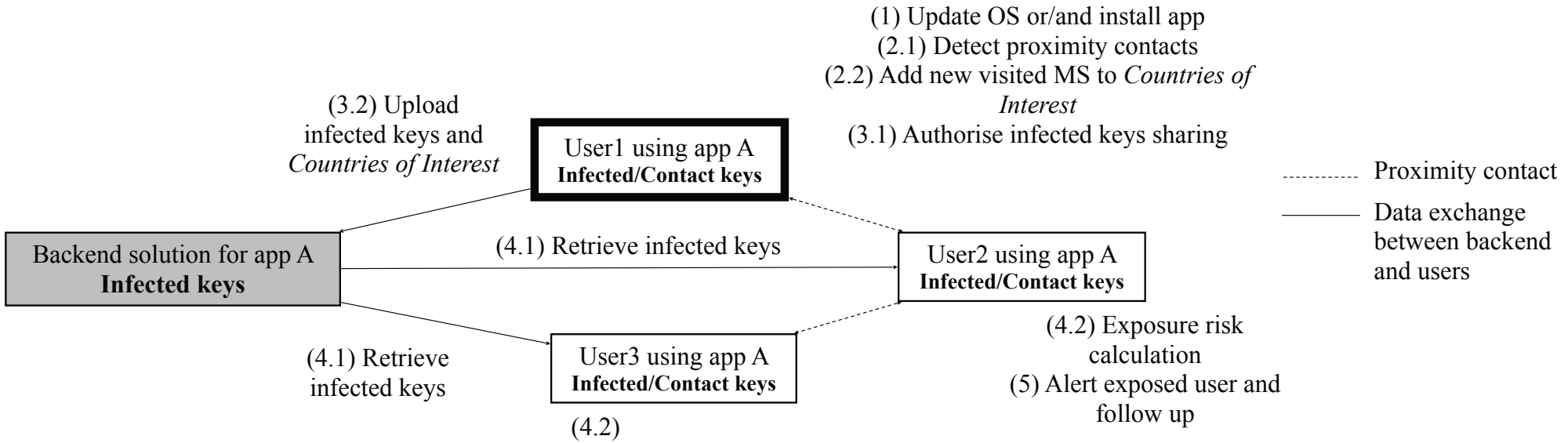


Source: MIT Technology Review

INTEROPERABILITY

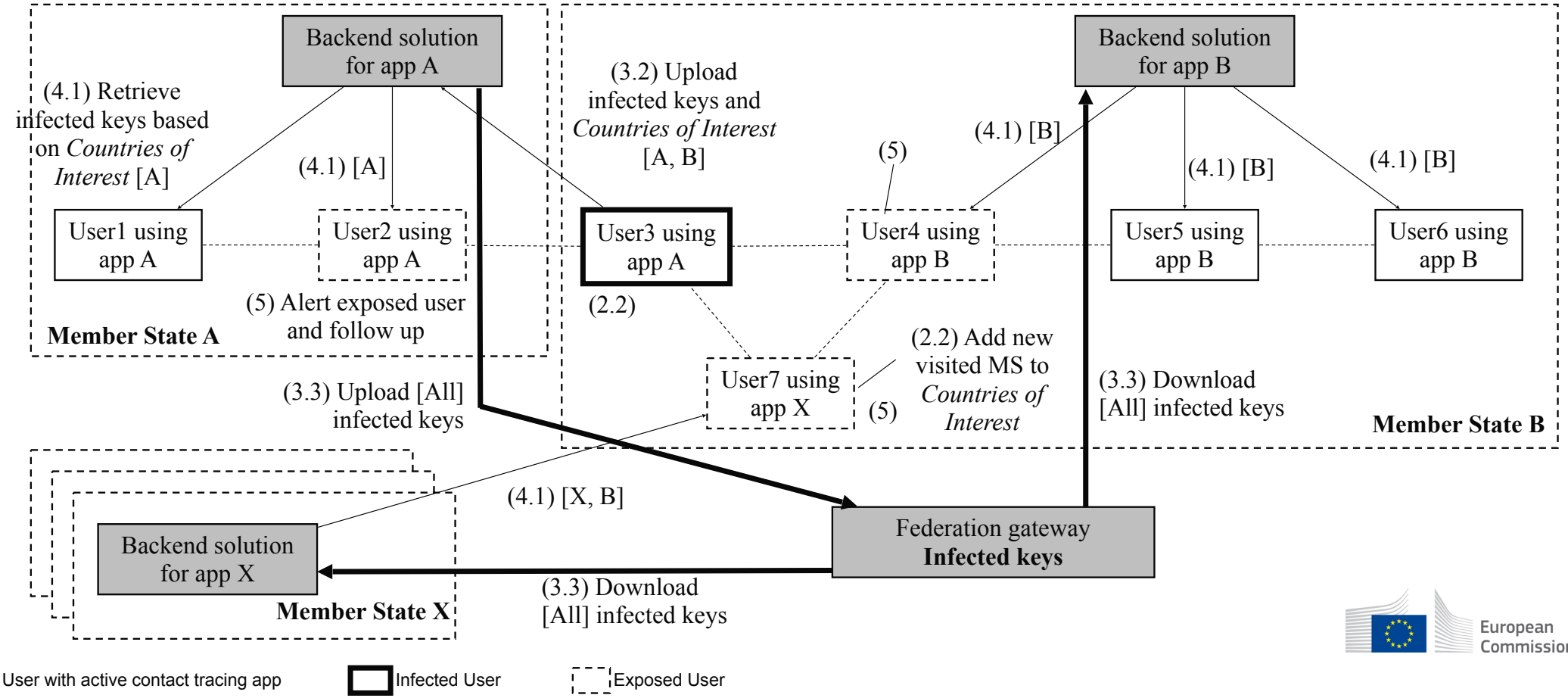
- What will it happen when we open borders?
- Different countries use different approaches and apps
  - Decentralised (in particular, Apple - Google protocol)
  - Centralised
- Not so easy to define an universal interoperability framework
  - Technical issues
  - The role of Apple - Google

Decentralised - Contact tracing flow



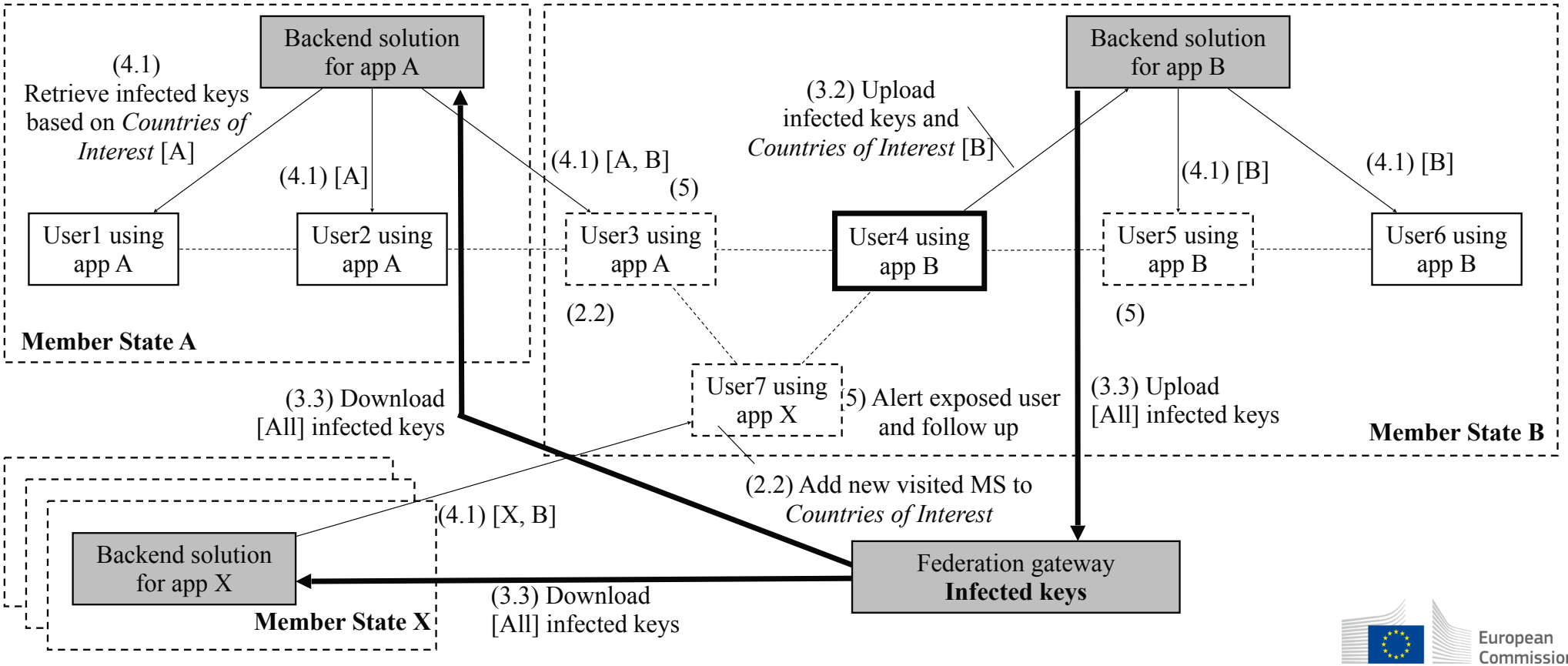
European Commission

Federation gateway (visiting user infected)



European Commission

Federation gateway (home user infected)



European Commission

CHALLENGES

INABILITY TO ENSURE PUBLIC TRUST AND CONFIDENCE

- Do we trust companies more than our governments?
- How do we address people's concerns?
  - Communication is not enough as bad communication is overwhelming

AN INEFFECTIVE AND CONFLICTING RELATIONSHIP BETWEEN INSTITUTION AND TECH GIANTS

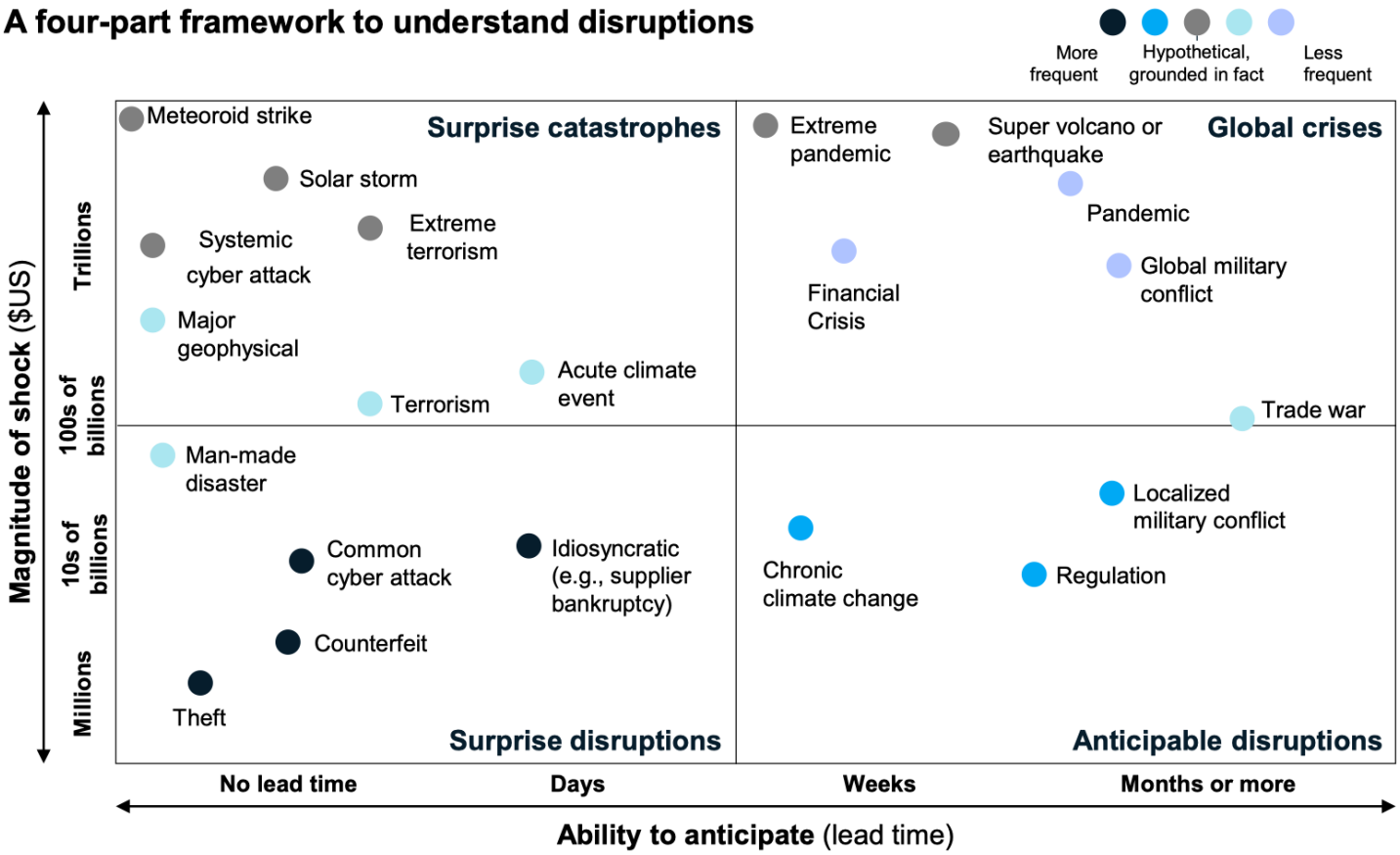
- Tech giants operate globally
- Nations do not have a unique proposition and position
- Who is weaker?

A WORLD WITH GLOBAL PROBLEMS AND LOCAL POLICIES/POLITICS

- The failure to institutionalize globalization:
  - International relations and foreign affairs
  - Coordination among economic boards and national policies
  - Health management
- The virus does not recognize our national borders

Disruptions of operations are often impossible to predict, but happen with regularity

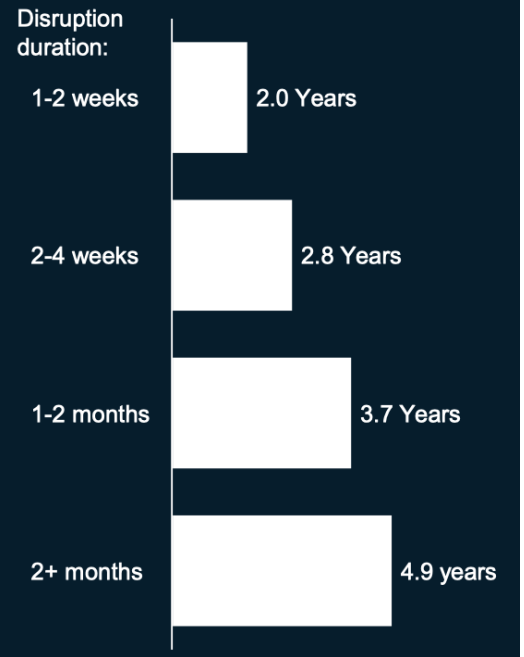
A four-part framework to understand disruptions



Source: Expert interviews, literature reviews, McKinsey Global Institute analysis

Expected frequency of a disruption (in years) by duration

Based on expert interviews, n=35



A LOT TO LEARN!

THANKS

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