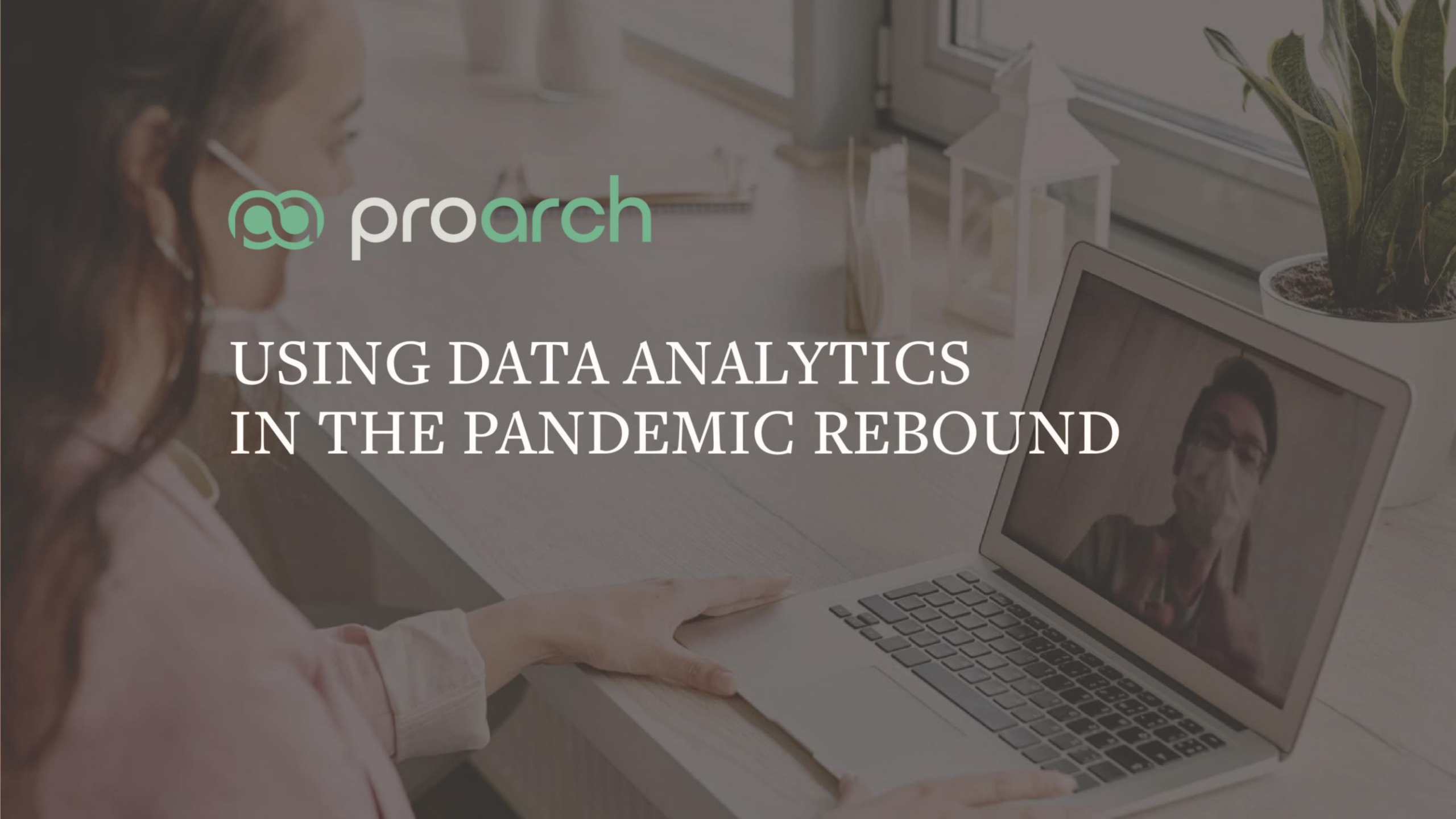

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USING DATA ANALYTICS IN THE PANDEMIC REBOUND

ProArch & iV4

We accelerate value and increase resilience for our clients with consulting and technology- enabled by cloud, guided by data, fueled by apps, and secured by design.

- Cloud
- Data & AI
- Product Engineering
- Managed IT Solutions
- Security
- Consulting

the proarch companies

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Presenter

Murray Foxcroft

Chief Technology Officer, Product Engineering and Data

Agenda

- How have businesses been affected
- Shape up your data strategy
- Understand Covid-19 datasets
- New sources and perspectives
- The right tools for the job
- Planning ahead

How have businesses been affected?

Impact

FTSE all share:	-20%
NASDAQ composite:	-20%
Norwegian cruises:	-75%
Amazon:	+50%

- What did you wish you knew?
- What could you have been tracking better?
- Could you have prepared differently?
- Could you respond quickly to new data?
- Were there any single points of failure?
- How did you make decisions?

What role did your data play?

Did you have access to all data needed for decisions?

How quickly could you respond to change?

Did you set baselines and create new KPIs?

How many people were actively leveraging data?

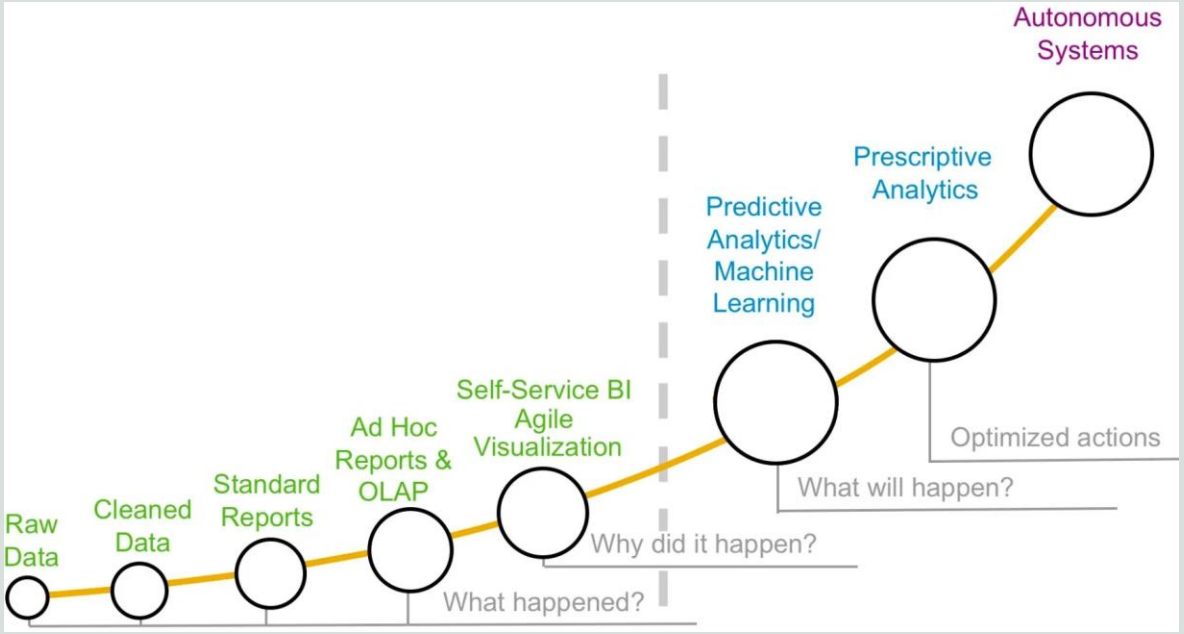
Did you know what to plan for?

Could you predict effect based on cause?

Could you have got more from your data?

Shape up your data strategy

Understand your current maturity



Goals could include:

- Fostering a culture that supports data-driven analytics
- Liberating data from silos
- Appling governance whist increasing access
- Identifying “data champions” who can lead change
- Ensuring you have a modern data platform in place

Source: https://timoelliott.com/

Use Hindsight

20th January 2020

The **first confirmed cases outside mainland China** occurred in Japan, South Korea and Thailand, according to the WHO.

21st January 2020

The **first confirmed case of the virus in the US** in Washington State, where a man in his 30s developed symptoms after returning from a trip to Wuhan.

30th January 2020

WHO declares a **global health emergency** amid thousands of new cases in China.

4th February 2020

The UK directs its citizens to **leave China** if possible.

11th February 2020

WHO announces that the new coronavirus disease will be called "**COVID-19**."

24th February 2020

The Trump administration asks Congress for **$1.25 billion for coronavirus response** – the US had 35 confirmed cases and no deaths.

28th February 2020

The **first British victim dies** of coronavirus onboard the cruise ship the Diamond Princess.

UK authorities confirm the first case of the illness to be **passed on inside the country**.

4th March 2020

Cases of Covid-19 **surge in the UK**, as officials announce the biggest one-day increase so far as 34 cases bring the total to 87.

16th March 2020

Boris Johnson **begins daily press briefings**, urging everybody in the UK to work from home and avoid pubs and restaurants to give the NHS time to cope with the pandemic.

The UK's death toll rises to 55, with 1,543 confirmed cases, though it is believed 10,000 people have already been infected.

17th March 2020

The UK Chancellor announced an unprecedented package of government-backed and guaranteed loans to support businesses, making available an initial £330bn of guarantees – **equivalent to 15% of GDP**.

18th March 2020

The UK government announces most **schools across England will be shut** down from Friday until further notice. Wales and Scotland announce they will also close schools.

20th March 2020

The UK government orders pubs, restaurants, gyms and other **social venues across the UK to close**. The chancellor announces the government will pay up to **80% of wages** for workers at risk of being laid off.

The Bank of England (BOE) has announced a **series of policy measures** designed to help U.K. financial market participants deal with the effects of the coronavirus (COVID-19) pandemic.

26th March 2020

UK Chancellor Rishi Sunak unveils a package of measures to **help self-employed workers during the economic downturn**, giving those earning less than £50,000 a taxable grant equal to 80 percent of their average profits.

29th March 2020

The European Commission announces that it will **revise its proposal for the EU's next seven-year budget**.

30th March 2020

UK Foreign Secretary Dominic Raab announces the government is to spend £75 million on charter flights and airline tickets to **repatriate up to 300,000 Britons stranded abroad** as countries have closed their borders to limit the spread of the coronavirus.

2nd April 2020

The number of worldwide coronavirus cases passes **one million**.

5th April 2020

The UK Prime Minister **Boris Johnson is admitted to hospital** for testing after his coronavirus symptoms persist.

6th April 2020

UK Prime Minister Boris Johnson is admitted to an **Intensive Care Unit** as his coronavirus symptoms worsen.

Initial Infection	Lockdown	Social Distancing	Re-Opening Phases	Return to Normal

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And foresight

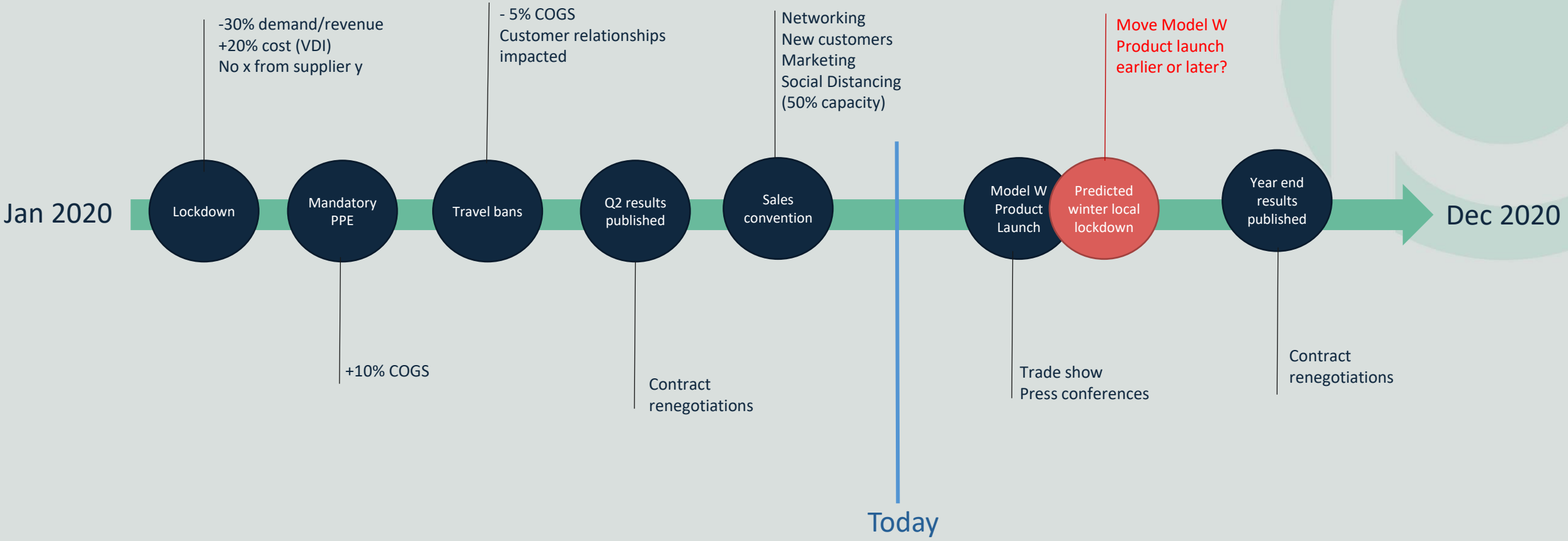
What is likely to happen?

- In our business
- More granular lockdown
- End of stimulus
- New ways of working
- Legislation and best practice
  - Local
  - Country wide
  - For your organization
  - For your competitors
  - For your suppliers
  - For your customers

What is unlikely to happen?

- A second wave like the first
- Continuous government bailouts
- Sustained government intervention

Build your own timelines



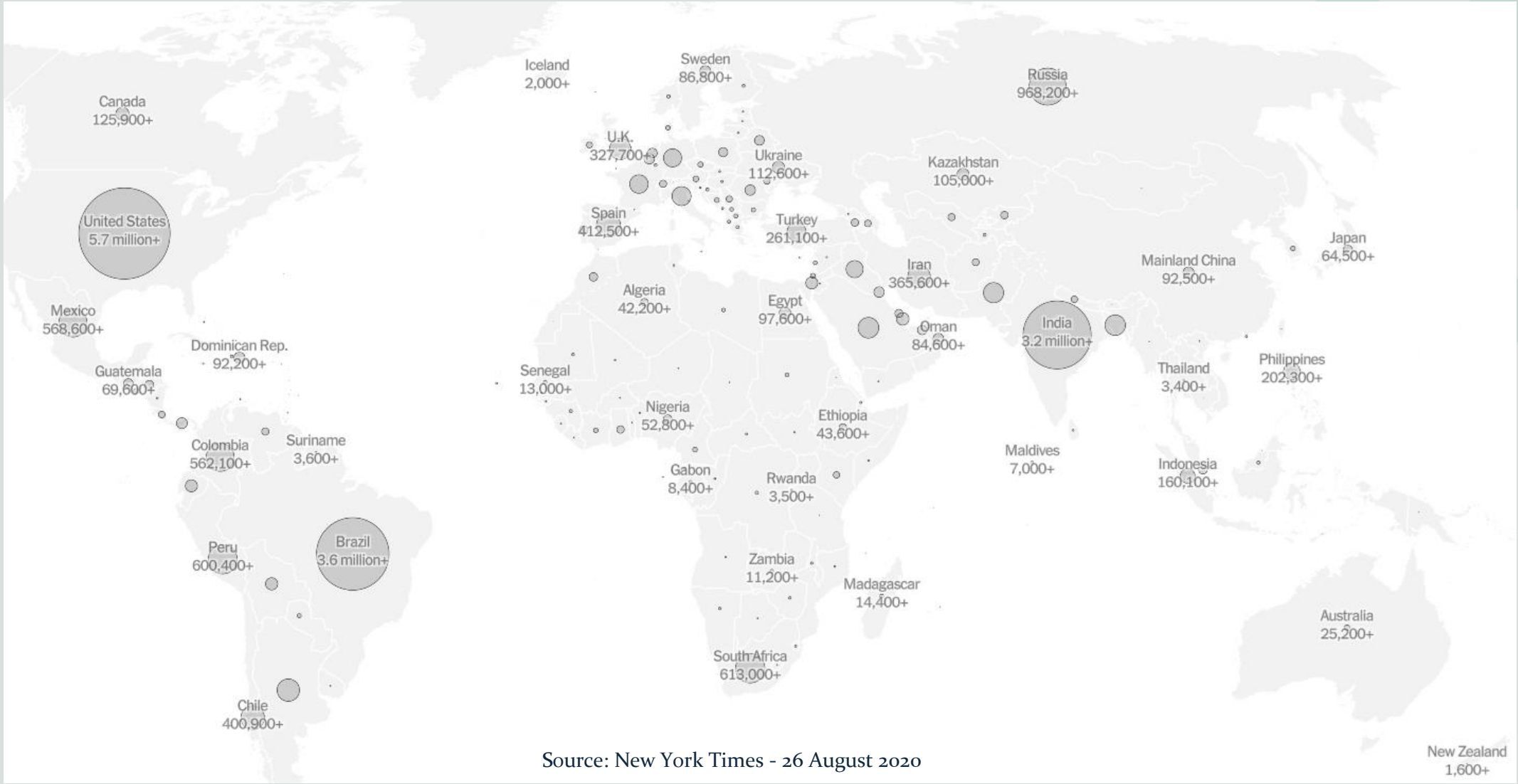
What-if. Predict. Plan. Perform. Review. Reset. Repeat.

Understand Covid-19 datasets

To find signals in data, we must learn to reduce the noise – not just the noise that resides in the data, but also the noise that resides in us.

Stephen Few

Raw facts...



Source: New York Times - 26 August 2020

The 4Vs of COVID-19 Data

Volume

- Largely aggregated data
- Low volume, both over time and in total

Veracity

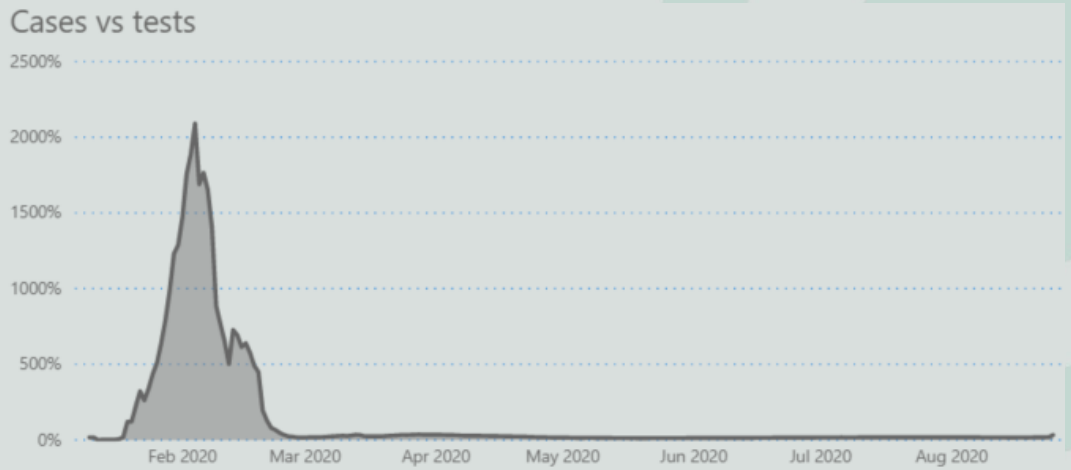
- Human driven processes
- Changing rules (e.g. reporting methods)
- Varying factors

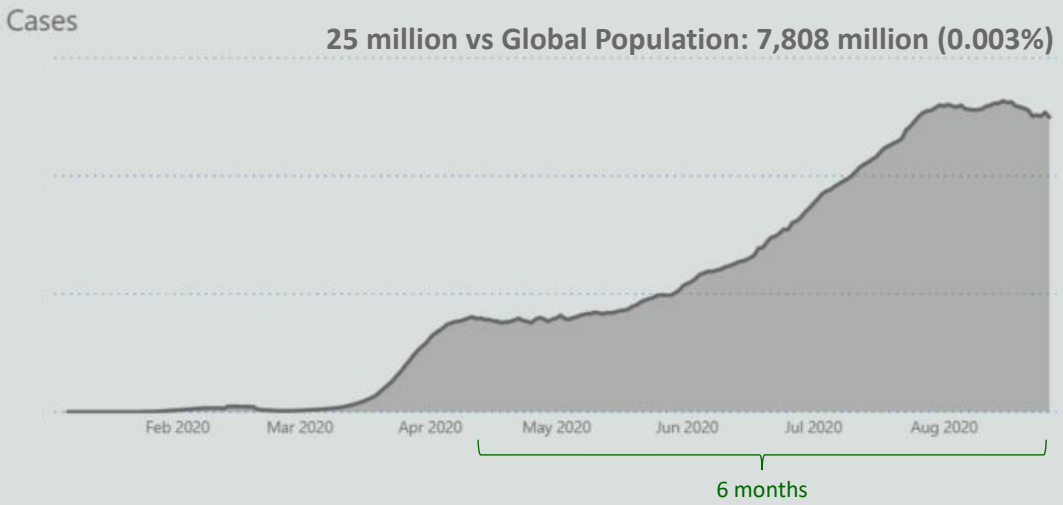
Variety

- Initially all over the place
- WHO, CDC, OWID and Governments all publishing similar numbers

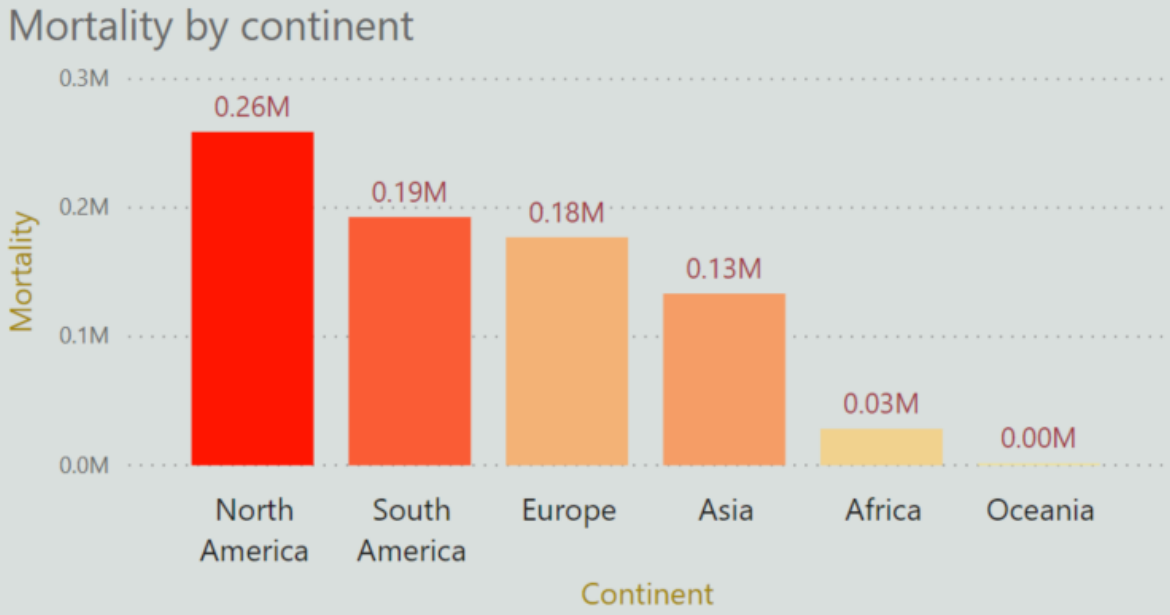
Velocity

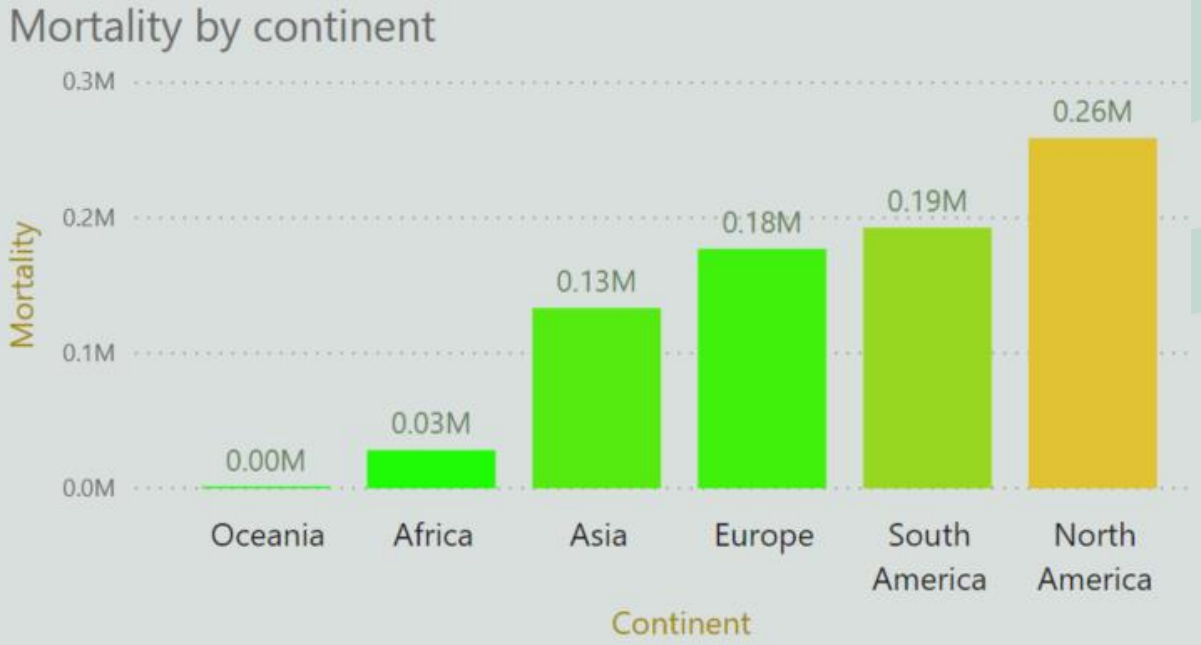
- Daily





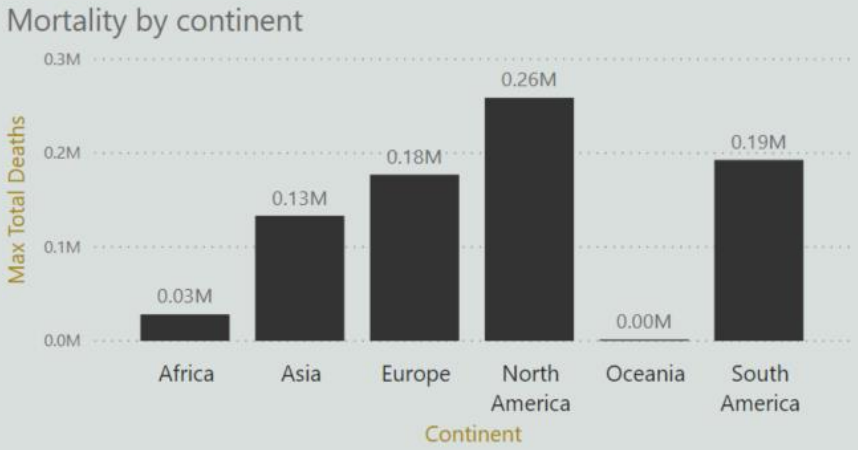
A tale of two charts

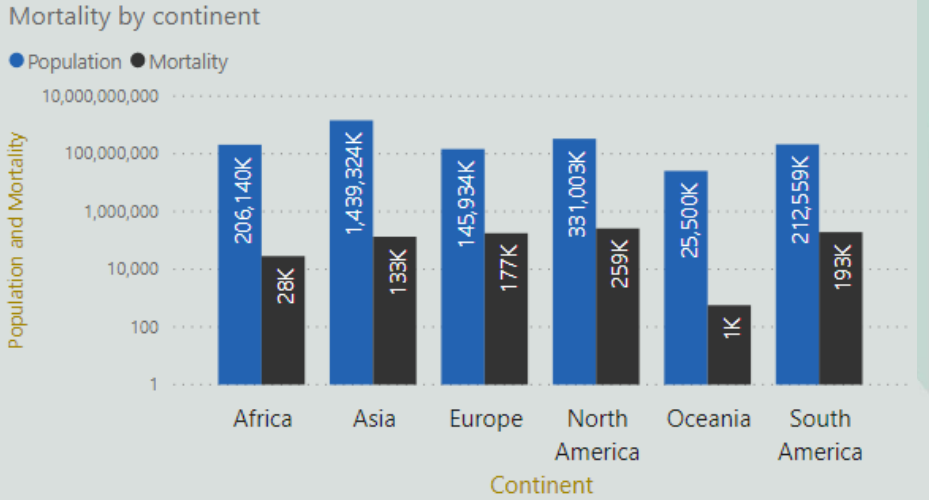


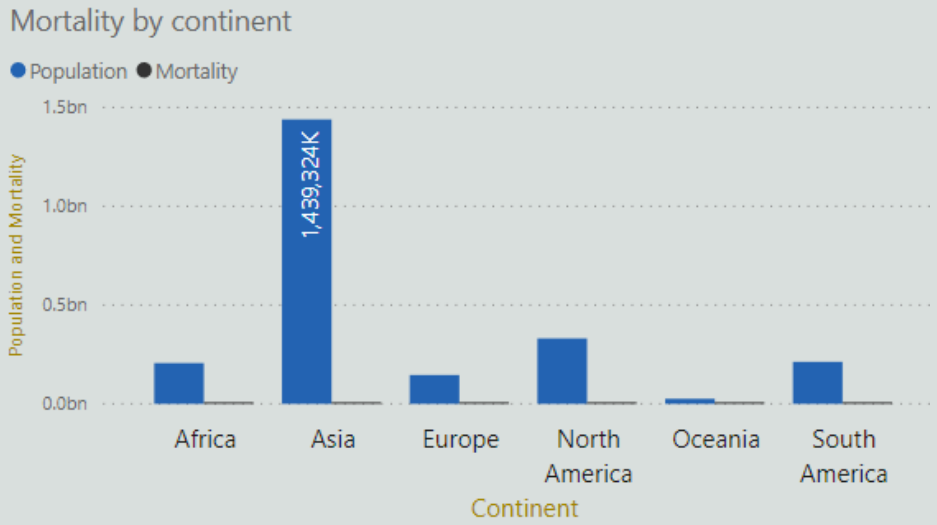


The same data through two lenses

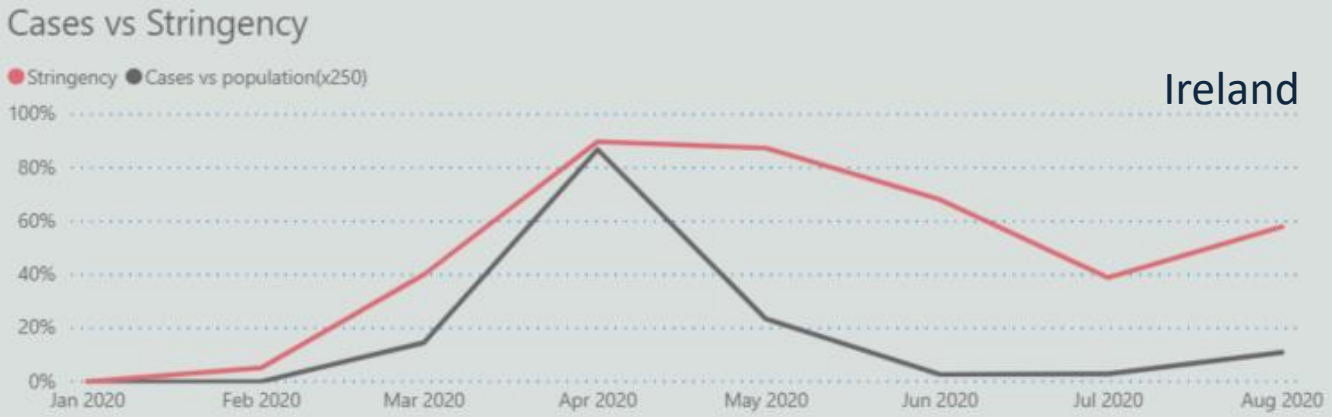
The effects of scale

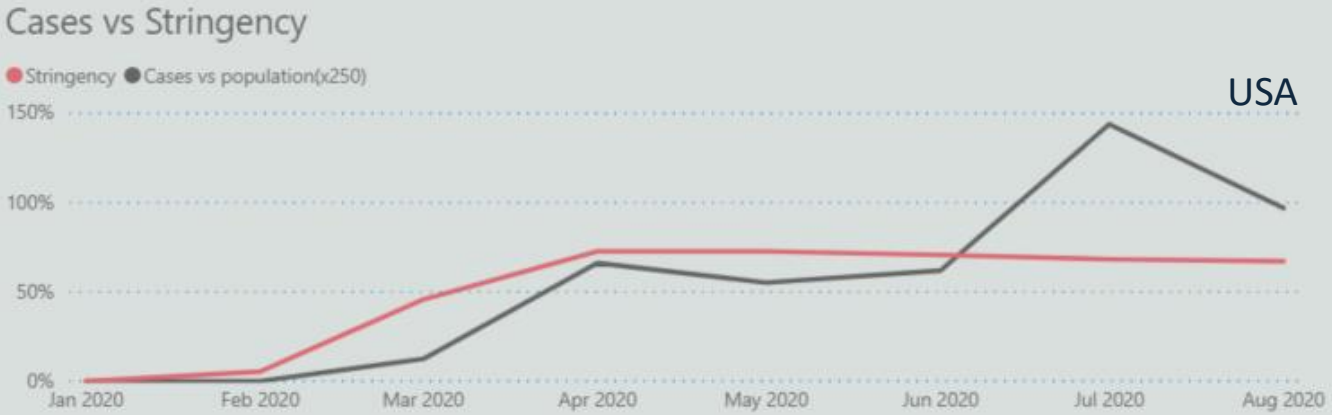






Locality is important





Similar measures, different results

WHY?

- Political stability (riots, protests, gatherings)
- Climate (heat, cold, sunshine, humidity)
- Population density (clusters, averages)
- Geography
- Interactions (greetings, handshakes, hugging)
- Adherence to guidelines
- Bubbles
- Local lockdowns
- Health demographics
- Ethnicity

Data source – Oxford University

New sources and perspectives

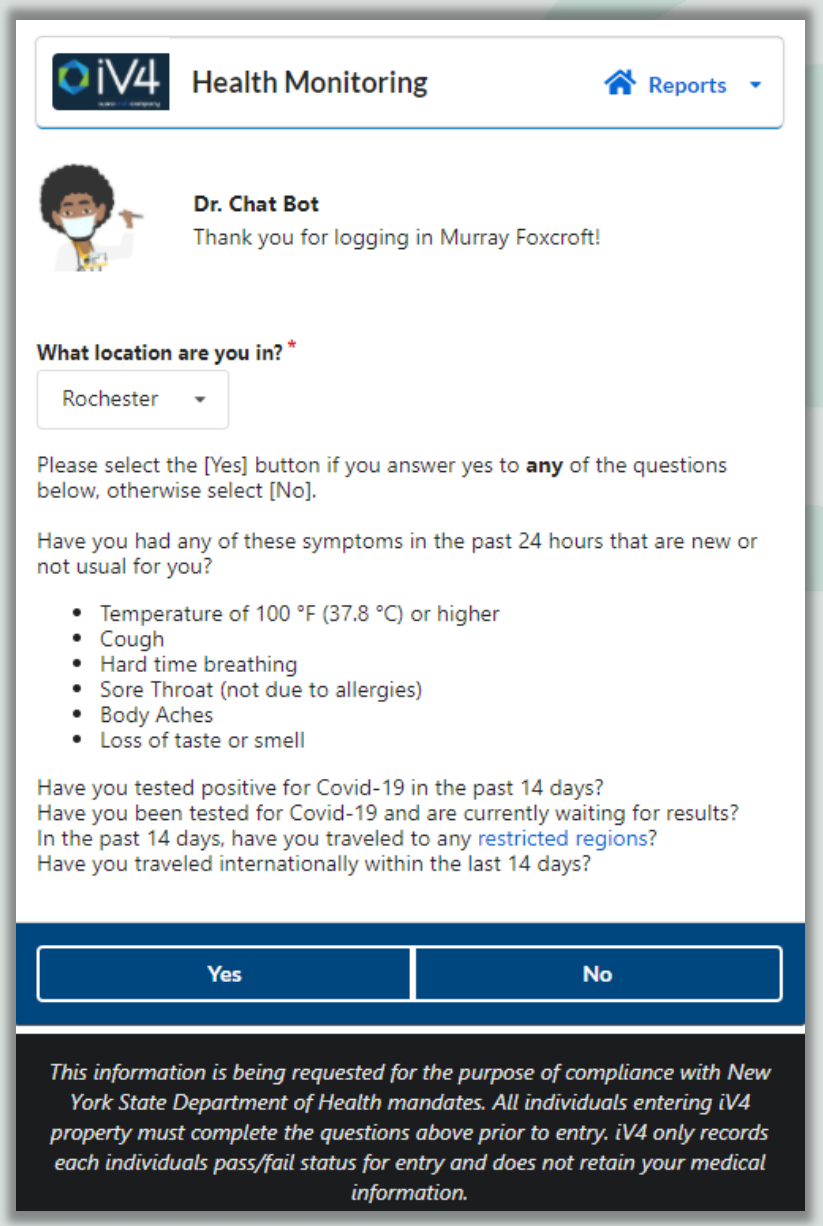
New KPIs and data

Measure key areas of the business affected by COVID, e.g.

- Measure activity on your premises
- Booking rates
- Stock levels
- Reduced productivity
- Demand/customer churn

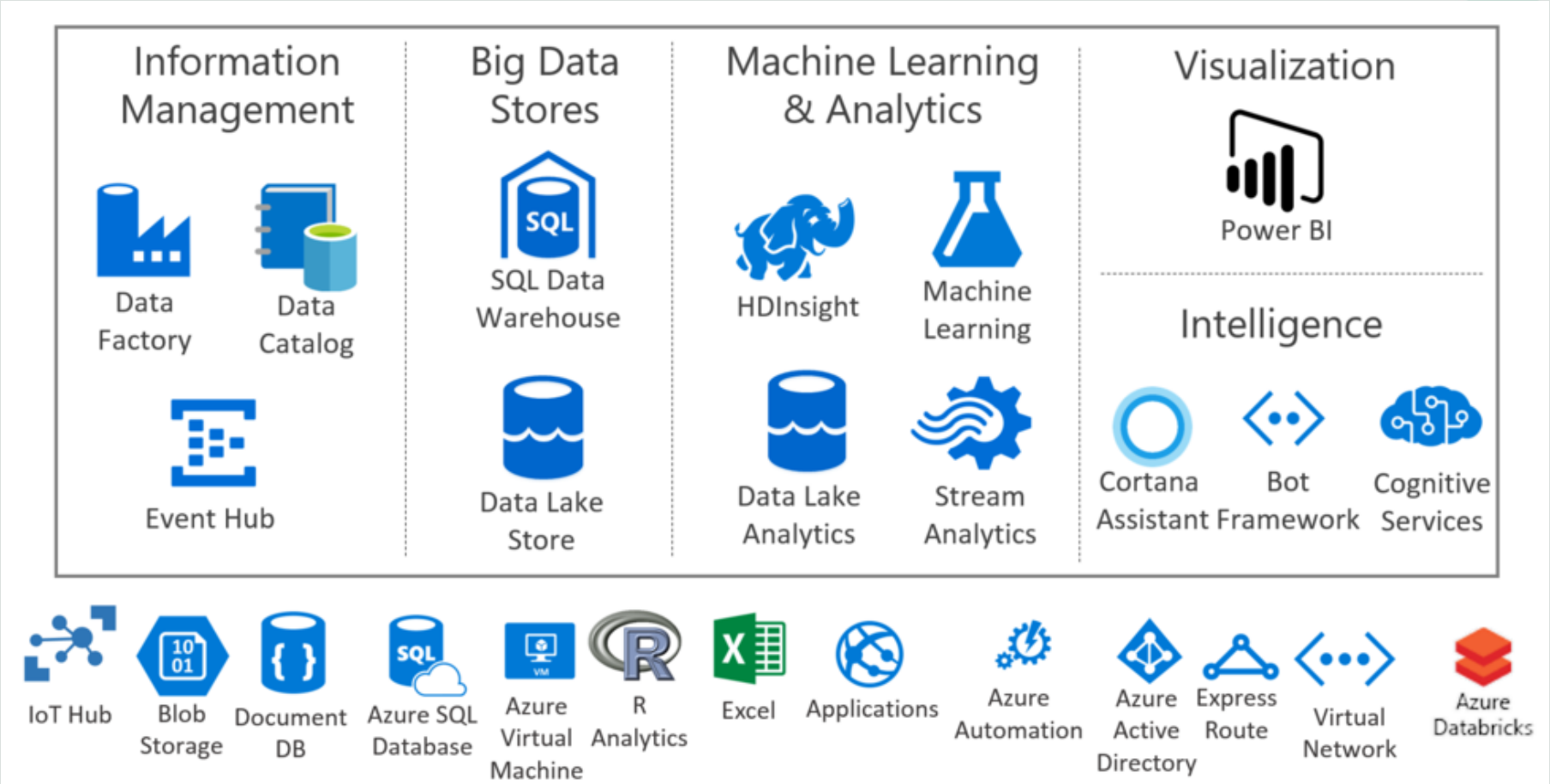
Monitor the use of new technology

- Remote working Virtual Desktops
- VPNs (Virtual Private Networks)
- Collaboration applications
- Health screening applications

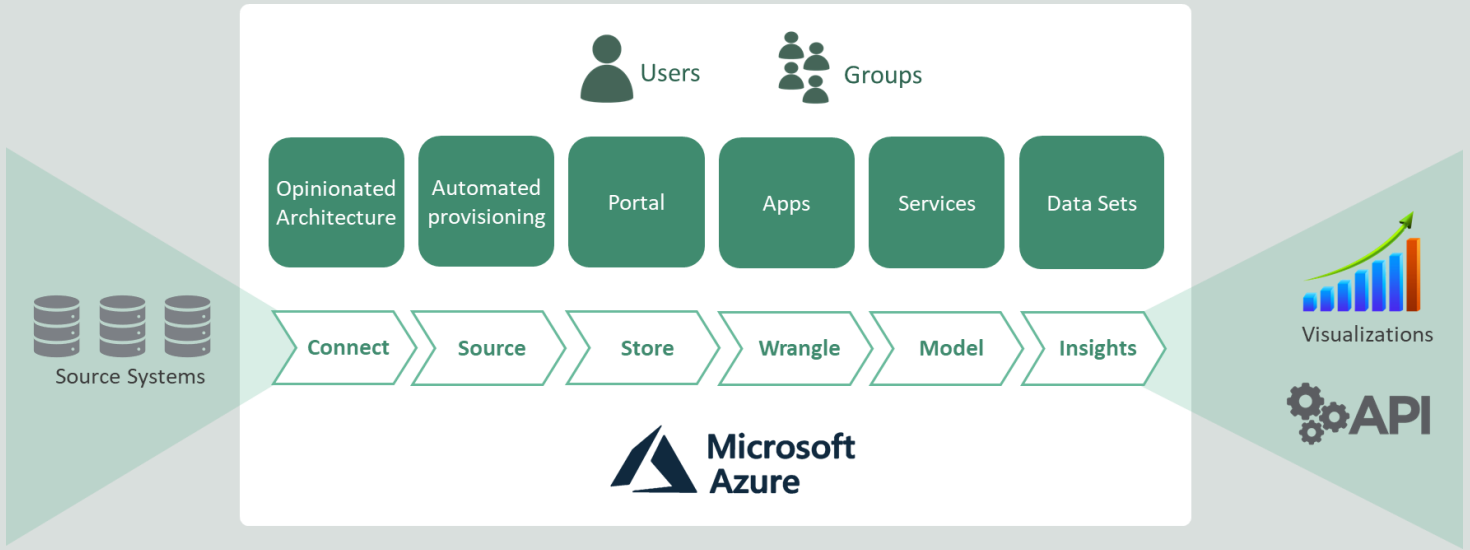


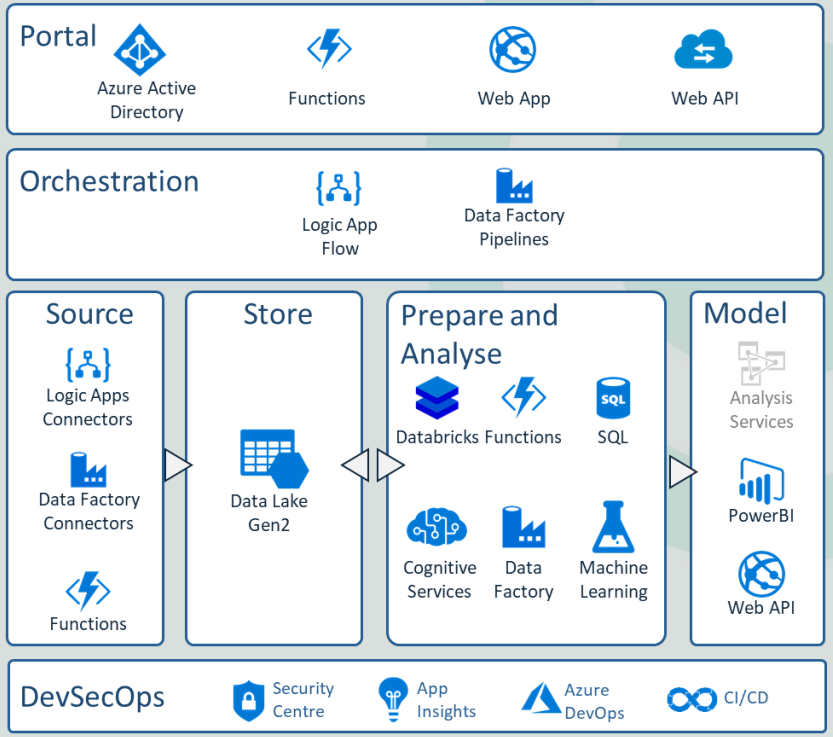
Have the right tools for the job

Cloud capabilities provide huge power



Weave them together





- For data ingestion, wrangling, science, AI, modeling & visualization
- Deploy a full, secure architecture in days vs months
- Manage all underlying services as one

- PaaS design gives elastic scale
- Leverage our deep skills pool
- Managed service to operate it

Planning ahead

Key points

- Covid-19 may be here to stay.
- The post-COVID-19 world is a data-driven world.
- Quickly responding to changes in your business is critical.
- Organizations with leading data strategies will survive and thrive.
- Data-driven decision making is often more reliable than intuition-based.
- Cold, hard numbers are simply more dependable.
- Its too early for AI, but it will be soon.

COVID-19 death toll compared to other pandemics

PANDEMIC	DATES	DEATH TOLL
Smallpox	~3,000 years–1979[A]	>300,000,000[B]
Black Death	1347–1351	~225,000,000[C]
Spanish Flu (H1N1)	1918–1919	50,000,000
HIV/AIDS	1981–Present	23,600,000–43,800,000
Cholera	1899–1923[D]	>1,500,000
Asian Flu (H2N2)	1957–1958	1,100,000
Russian Flu (likely H2N2)	1889–1890	1,000,000
Hong Kong Flu (H3N2)	1968–1970	1,000,000
Swine Flu (H1N1)	2009–2010	151,700–575,400
COVID-19	2019–Present	333,489[E]
Ebola	2014–2016	11,300
MERS	2012–Present	866
SARS	2002–2003	774

[A] Worldwide eradication in 1979 [B] More than 300M since 1900 alone

[C] ~25 million in Europe, and estimates of >200M others worldwide [D] Data from the 6th Cholera pandemic

[E] Data as of May 22, 2020

Note: Historical images of H2N2 not available. Generic influenza virus pictured.

Sources: Brittanica; Robert Wood Johnson Foundation; History.com; CDC; WHO; American Museum of Natural History; American Society for Microbiology; US Dept of Health and Human Services; United Nations; Johns Hopkins

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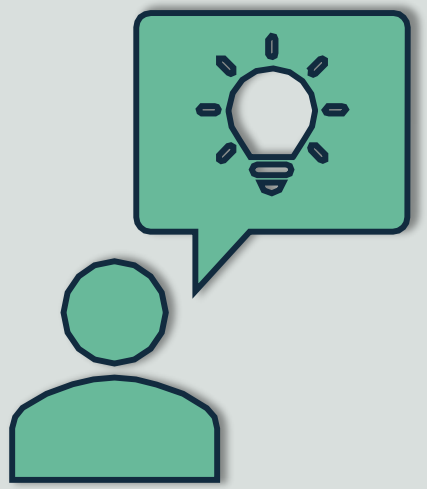
10 Priorities you should consider

- Assess your data maturity and plan how to fill gaps
- Build timelines and empower them with data
- Model and iterate uncertainty faster than before
- Put the right tools in place
- Treat everyone in your organization as a potential analyst
- Reduce dependence on manual data collation
- Benchmark your performance against competitors
- Improve agility (the speed at which you can respond to change)
- Label your data directly or via correlation
- Find ways to use your data to differentiate