



Small & Big Data - Risks & Opportunities

Lloyd's Data & Intelligence Day, 15 October 2014

Nick Beecroft, Markus Gesmann

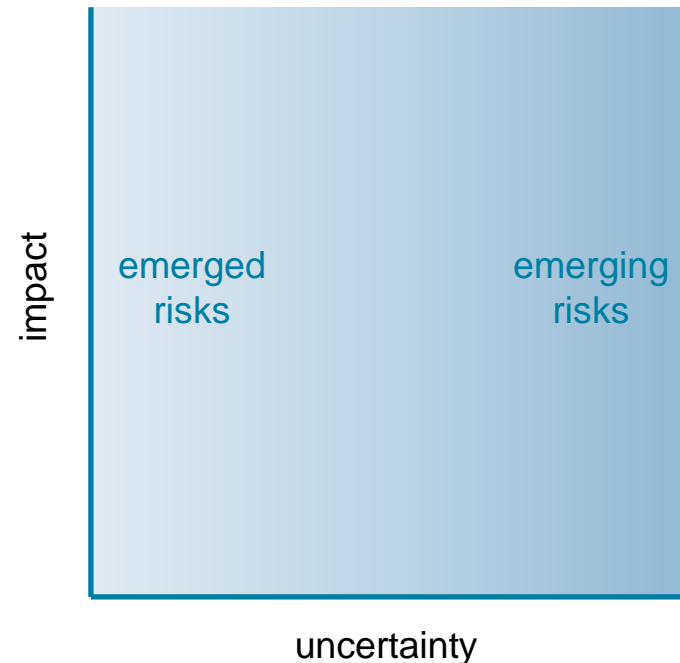
Agenda

- ▶ Emerging risk & opportunities – Nick Beecroft
- ▶ Practical perspective – Markus Gesmann

What is an 'Emerging Risk'?

Lloyd's defines an emerging risk as: *an issue that is perceived to be potentially significant but which may not be fully understood or allowed for in insurance terms and conditions, pricing, reserving or capital setting.*

- ▶ In practical terms, the defining feature of an emerging risk is **uncertainty**
 - Its essential features are novel (cyber risk, synthetic biology)
 - It exhibits emergence – i.e changes to one or more components which generate important new characteristics (flooding and climate change)
- ▶ This means that the traditional risk assessment metric of 'likelihood' is of limited value

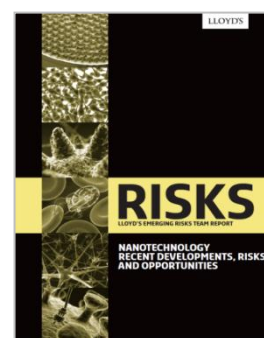
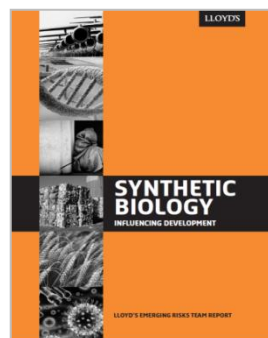


Systemic shock: Thailand floods, 2011

- ▶ No recent history of severe flooding in Thailand → not covered by catastrophe models. Business parks developed on flat, affordable land: flood plain!
- ▶ Cascade effects throughout global supply chains generated economic loss of \$45.7bn and loss in the Lloyd's market of \$2.2bn.
- ▶ The challenge for risk transfer: “*we and insurers can't actually formulate the potential scope of liability and how to calculate loss... the biggest issue is that insurers want complete information, whilst we as a buyer want cover for the unknown*” (Airmic review of the supply chain insurance market, 2012).

Emerging technologies

- ▶ Risk transfer is a key enabler of technology innovation
 - Lloyd's marine underwriters provided the first motor car insurance policy in 1904, written as a “ship navigating on land”
- ▶ Risk must be quantified
 - In the absence of historical data, scientific research is applied to assess hazard, vulnerability and exposure
- ▶ Early in a technology's development, risk transfer appetite will be limited

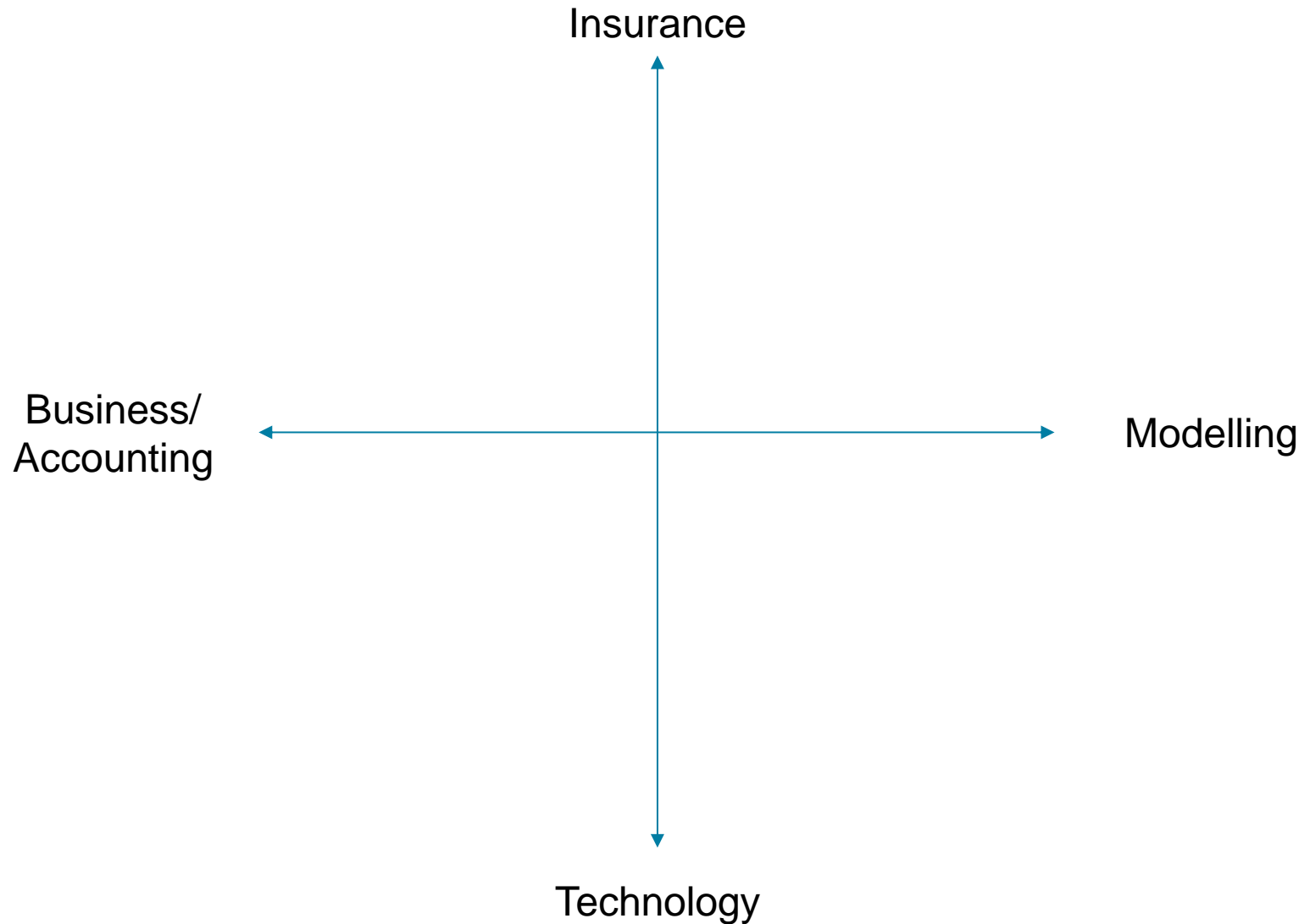


“While we have lots of numbers, we don’t necessarily have lots of information.”

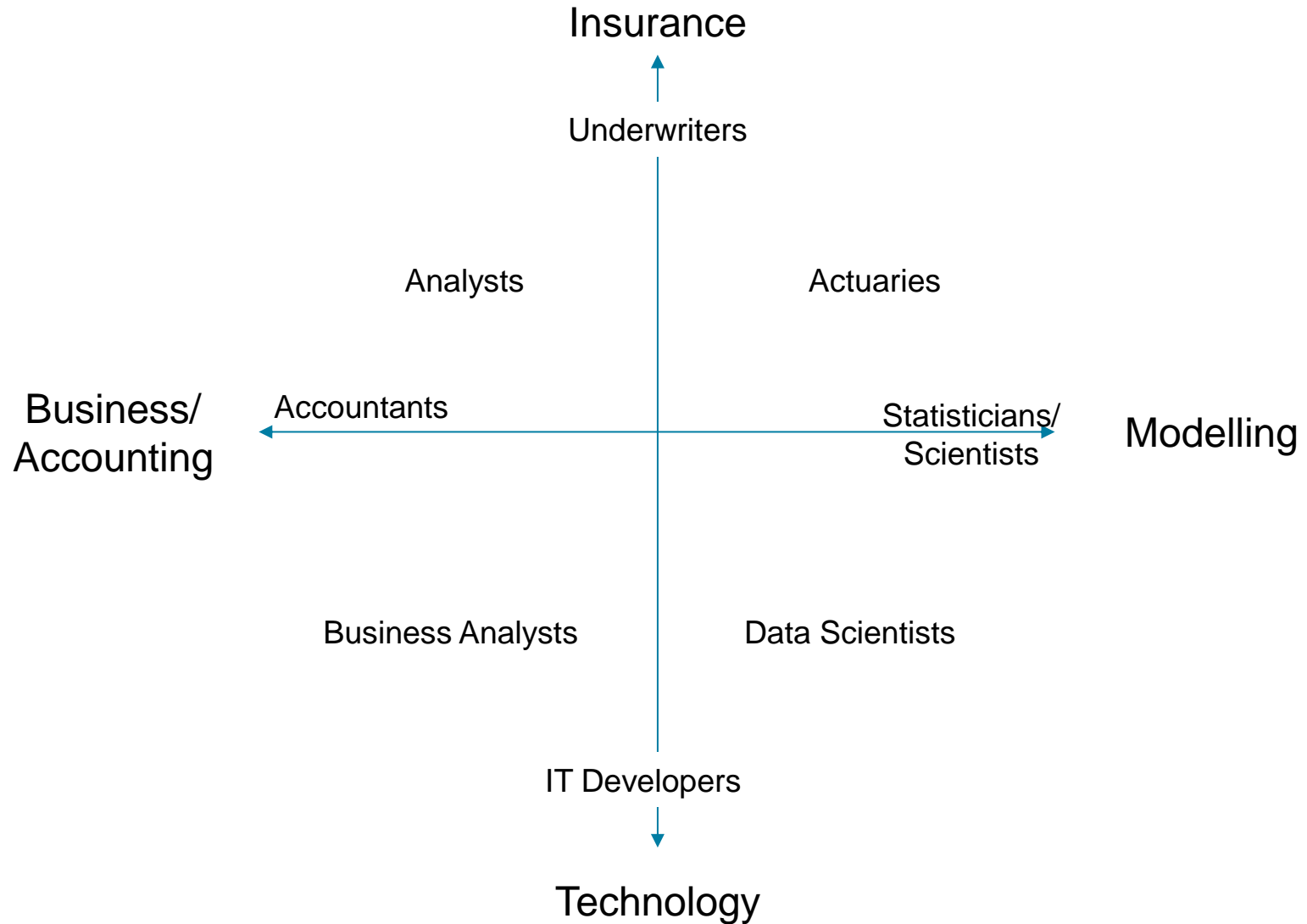
Patrick Burns

Source: <http://www.portfolioprobe.com/2012/09/03/a-look-at-bayesian-statistics/>

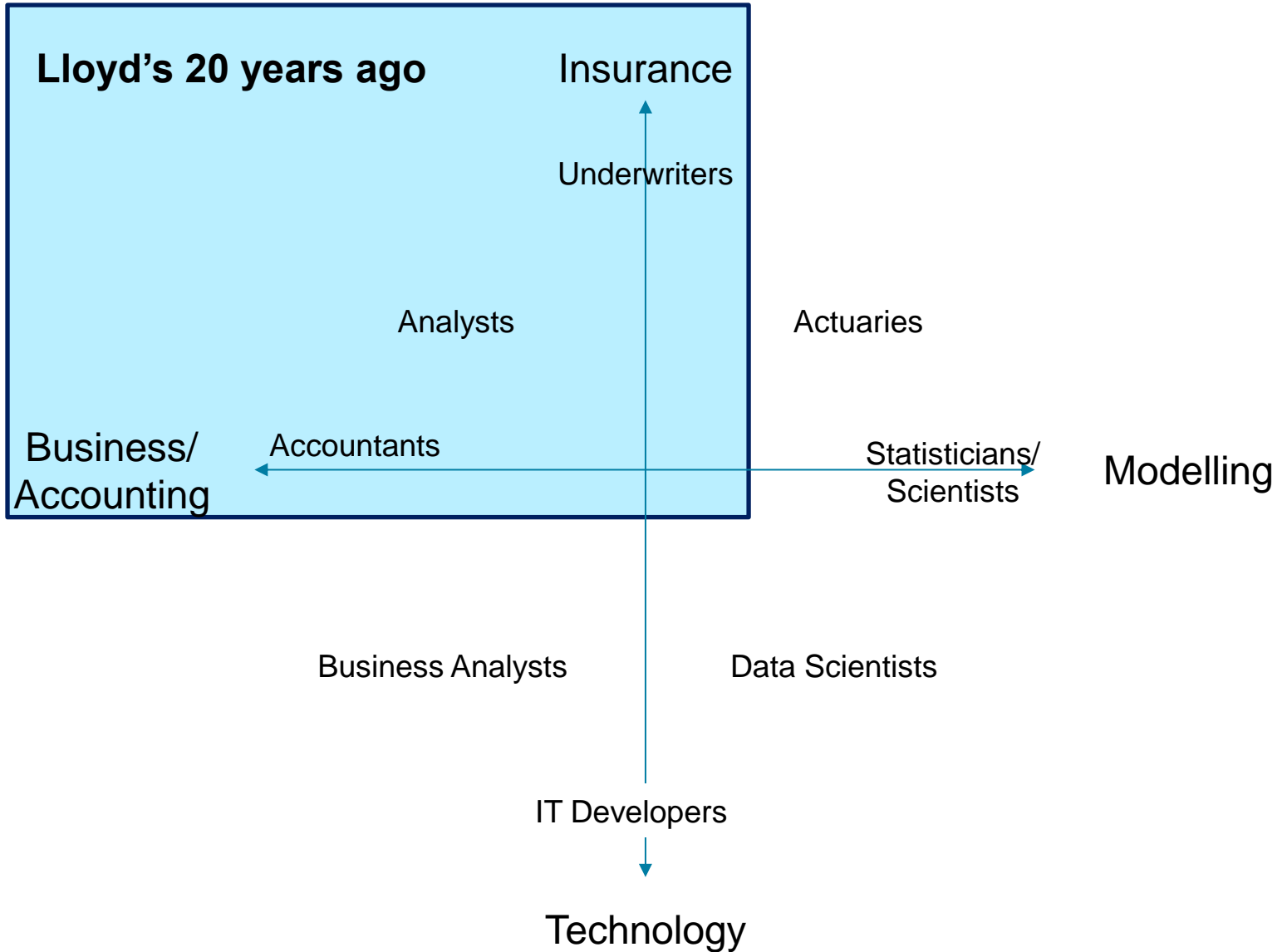
Evolution of business functions



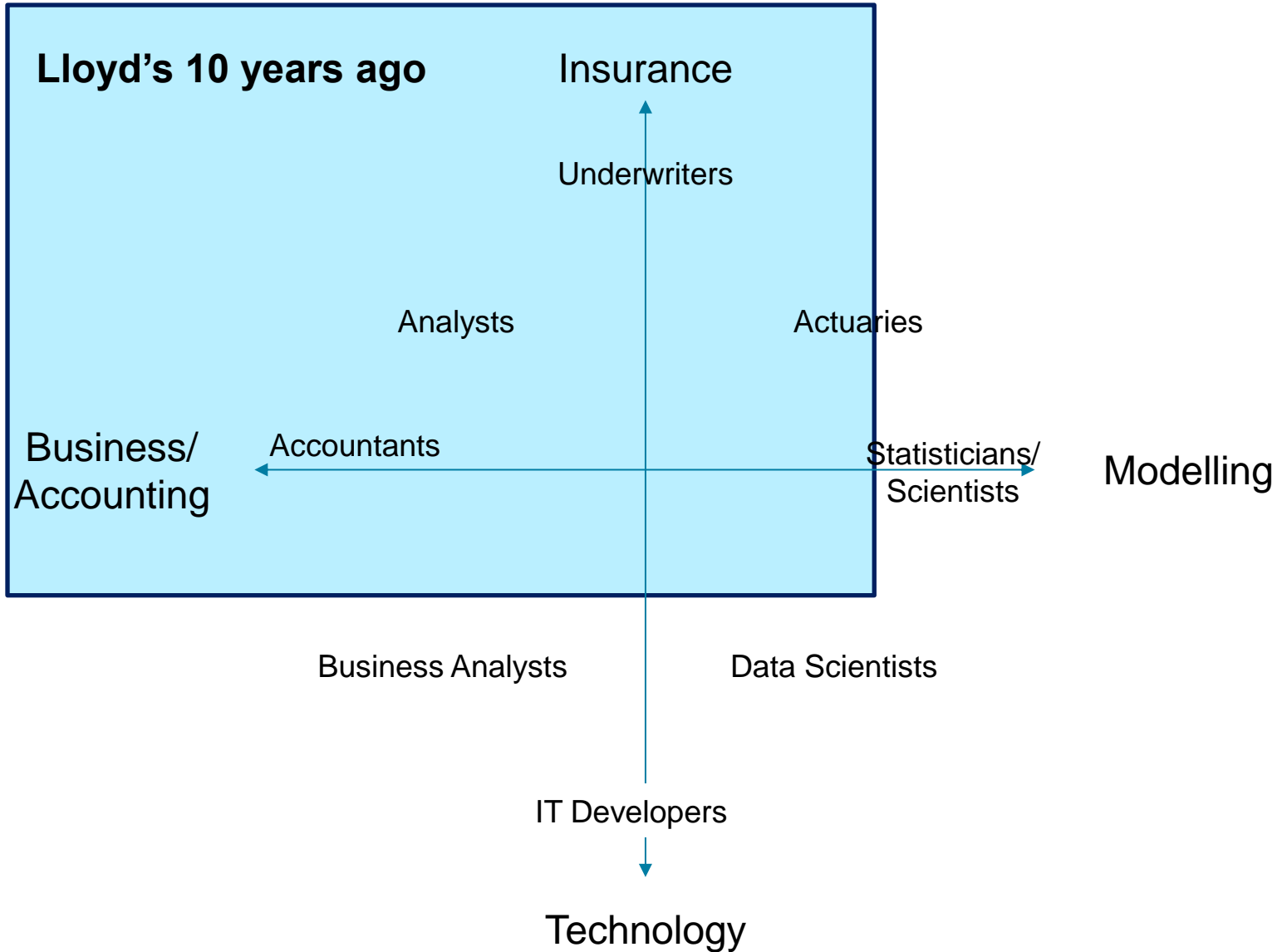
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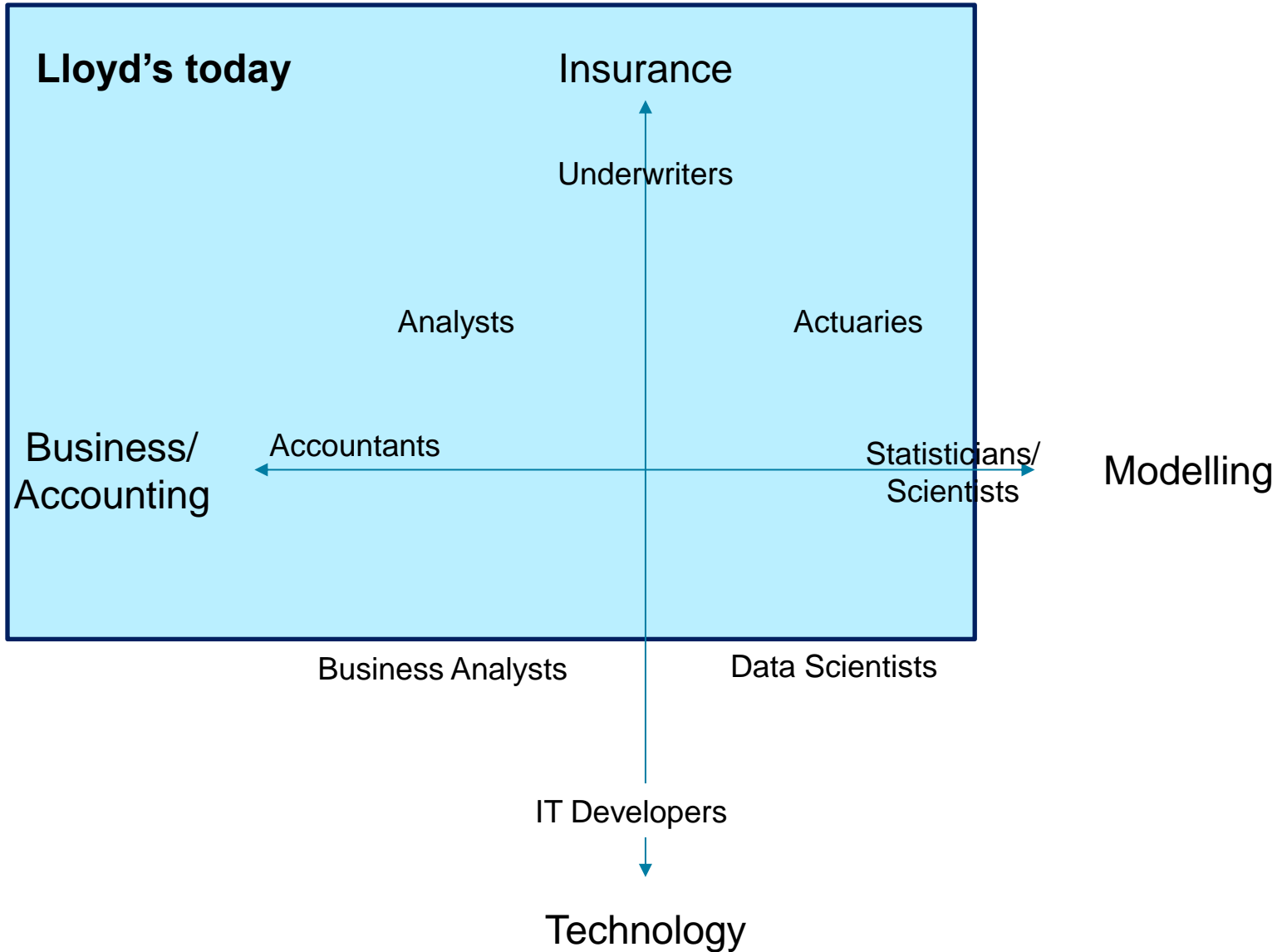
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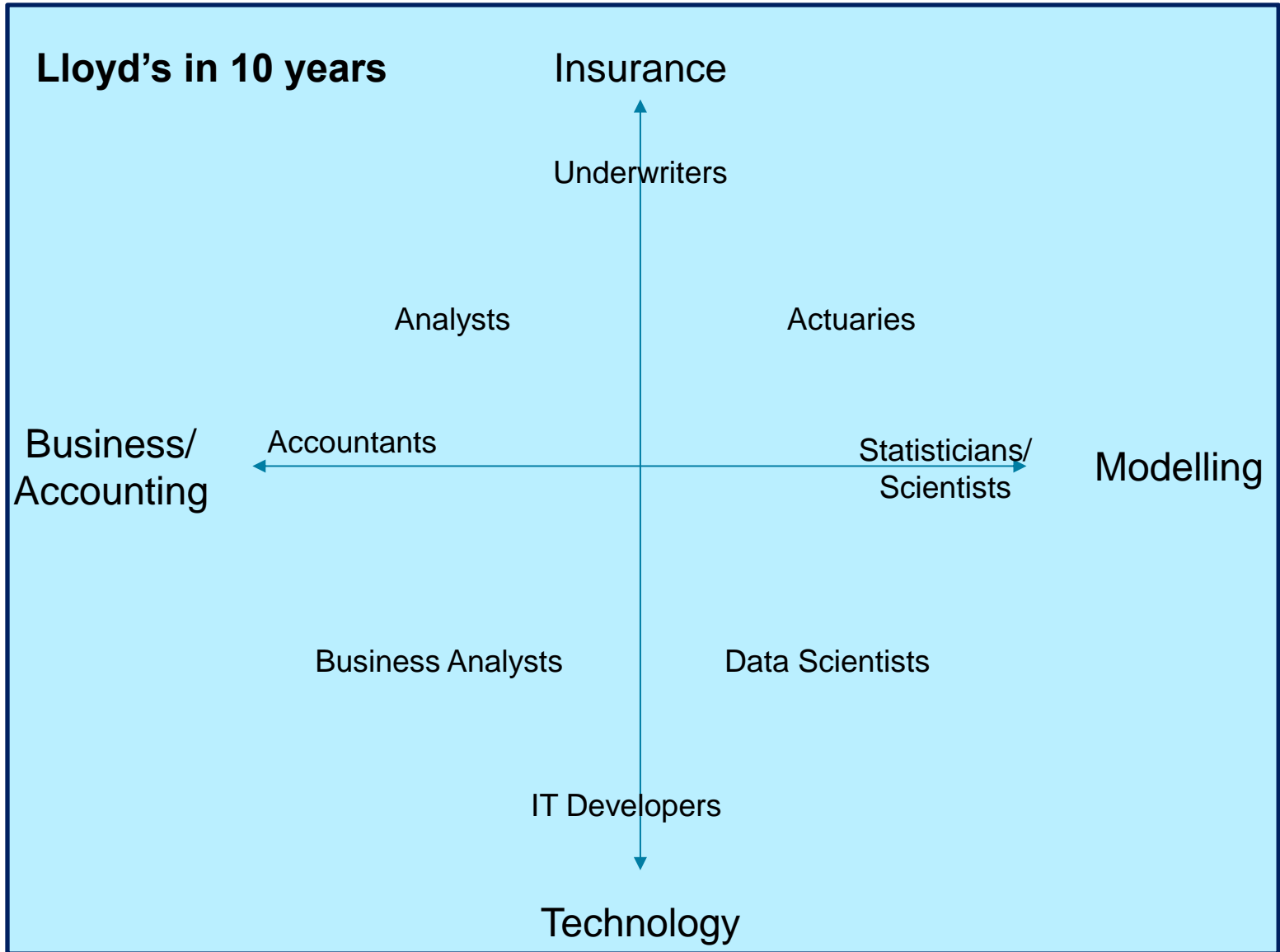
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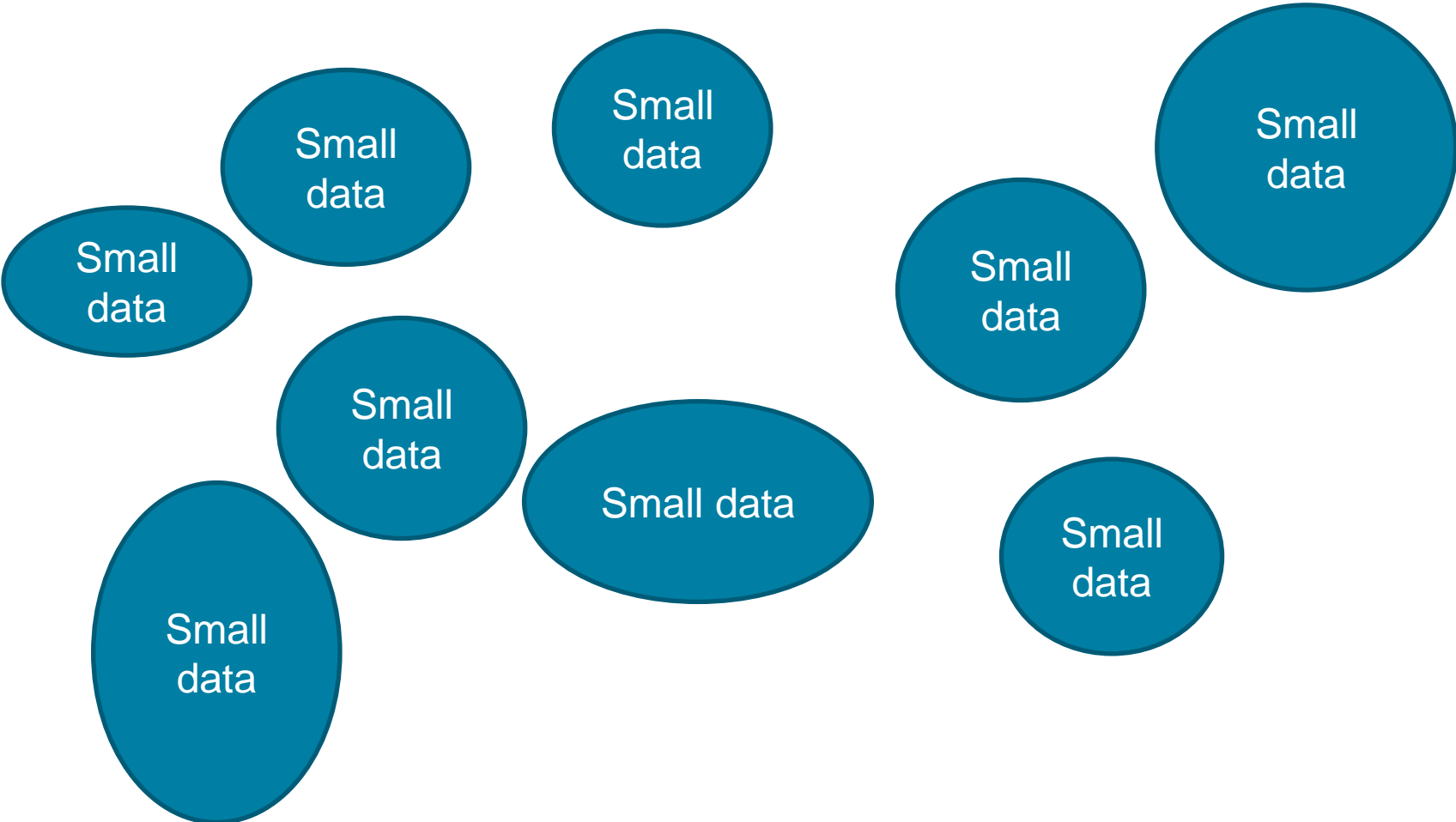
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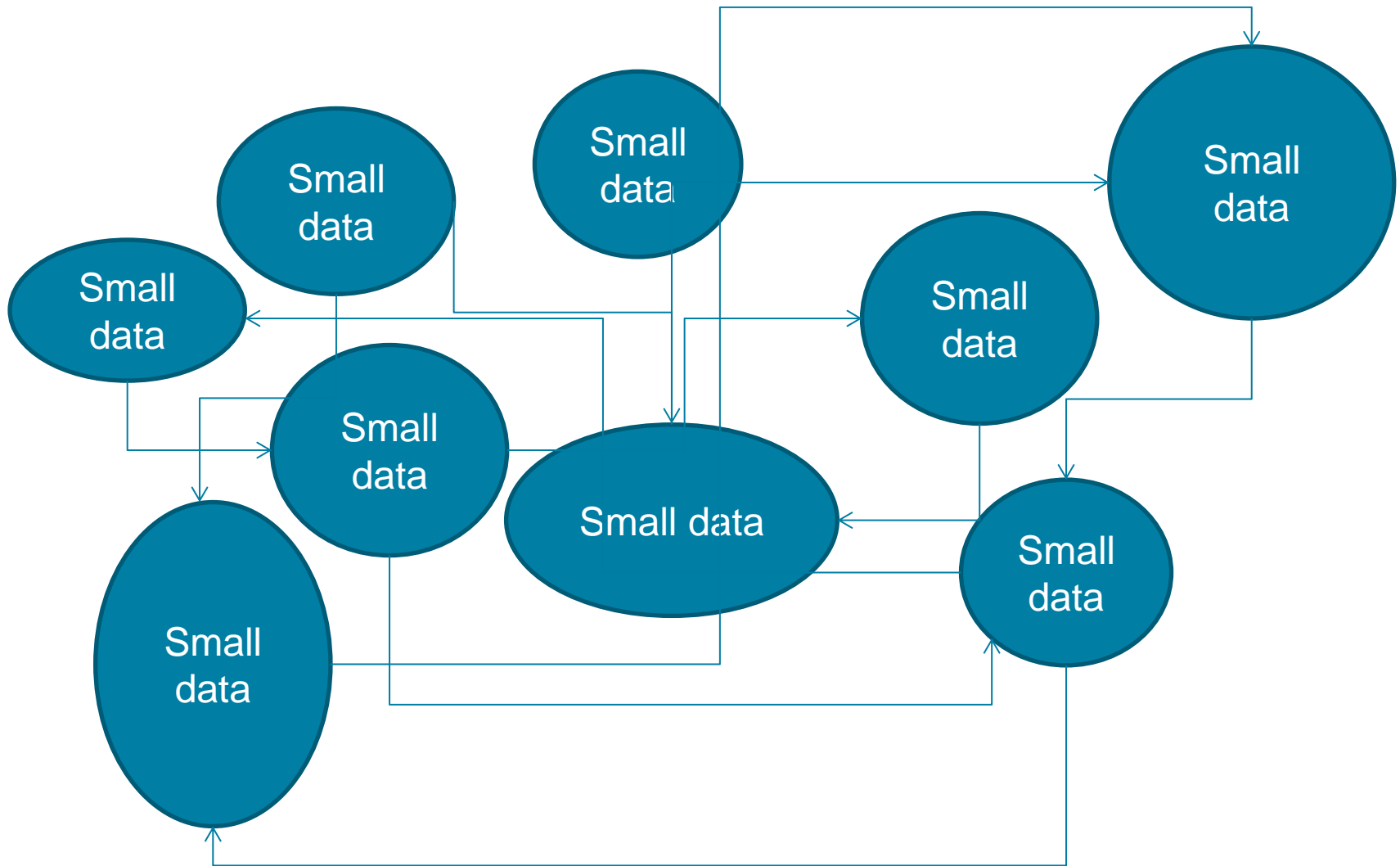
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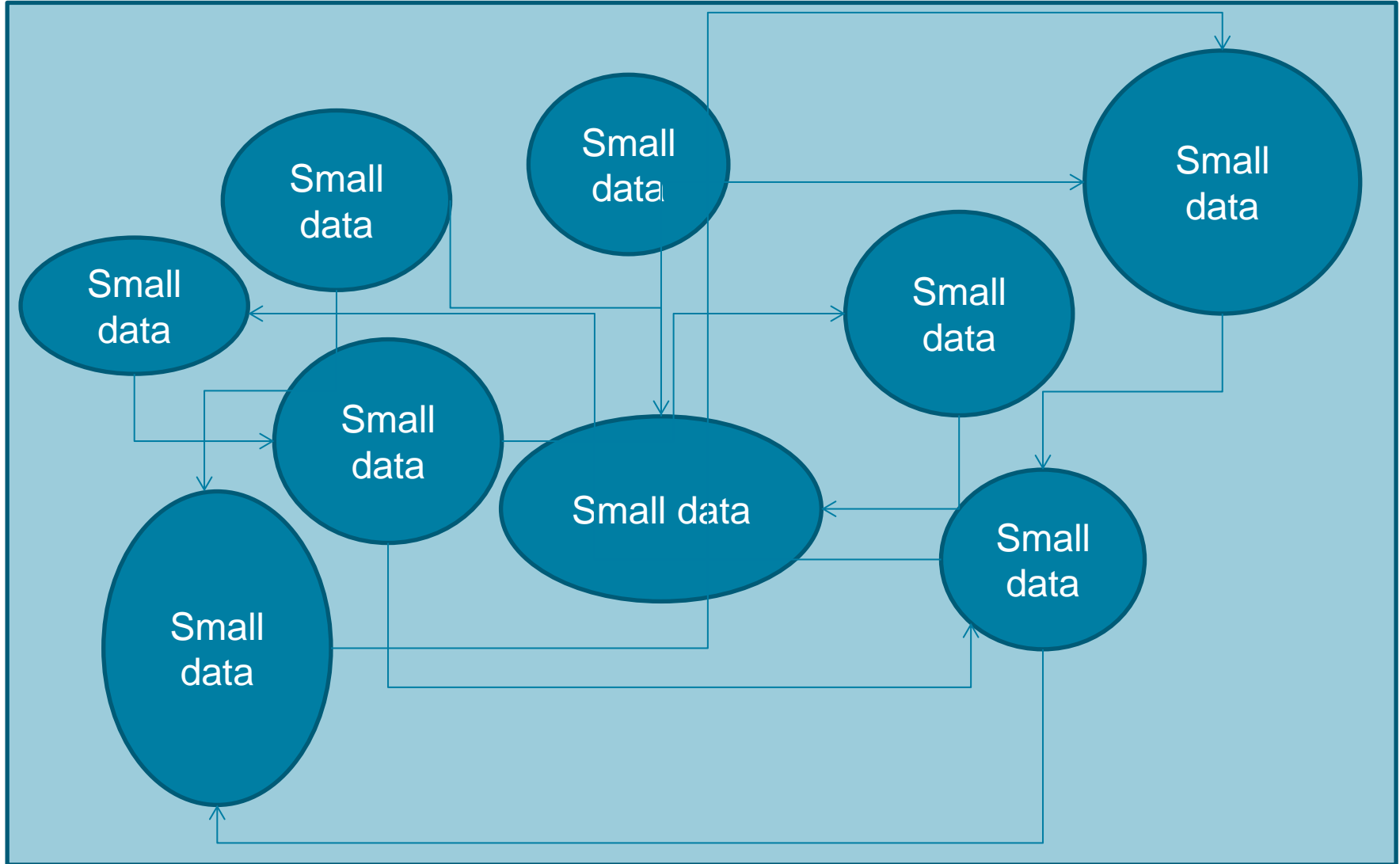
Small data



Connecting small data sets ...



Big data



Data is the new raw material

Today: Business Centric



Future: Data Centric

Data in silos

Data is collected and managed for specific business processes

Data flows

Data is a curated central resource, with pipelines to business functions

Challenges

- ▶ Stronger governance on small data required
 - Particular the slowly changing reference data
 - They are the linchpins!

How to overcome those challenges?

- ▶ Need
- ▶ Capabilities
- ▶ Culture

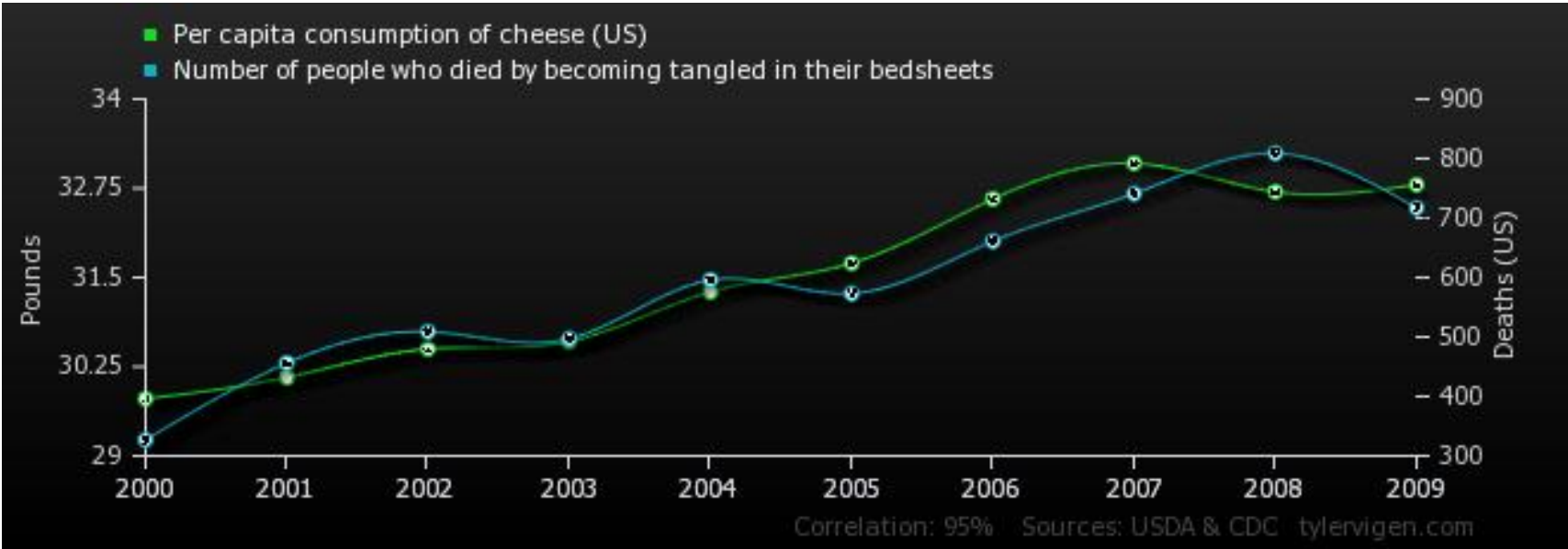
Idea taken from Ian Branagan: All Models Are Wrong, But Some Are Useful
<http://player.vimeo.com/video/62424578?autoplay=1>

"Information isn't what's scarce; it's the willingness to do something with it."

Tyler Cowen

<http://theweek.com//article/index/253902/which-job-skills-will-be-most-important-in-the-future>

Never stop thinking, even when you have lots of data



Source: http://www.tylervigen.com/view_correlation?id=7

Thank you

▶ Questions