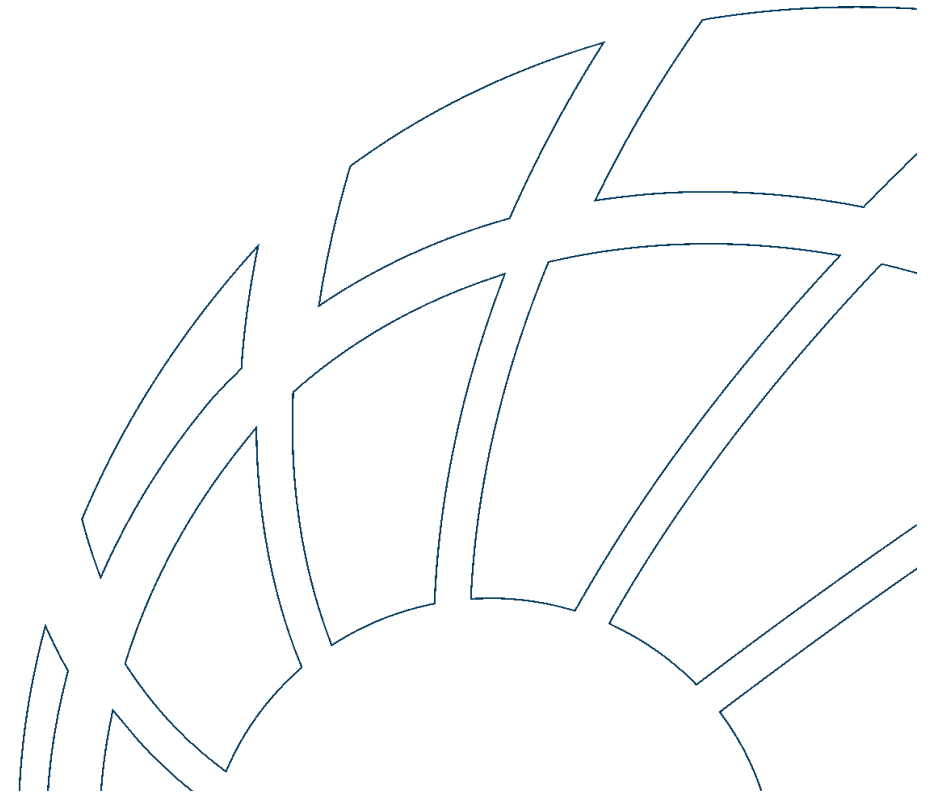


Big Data

Beyond the hype

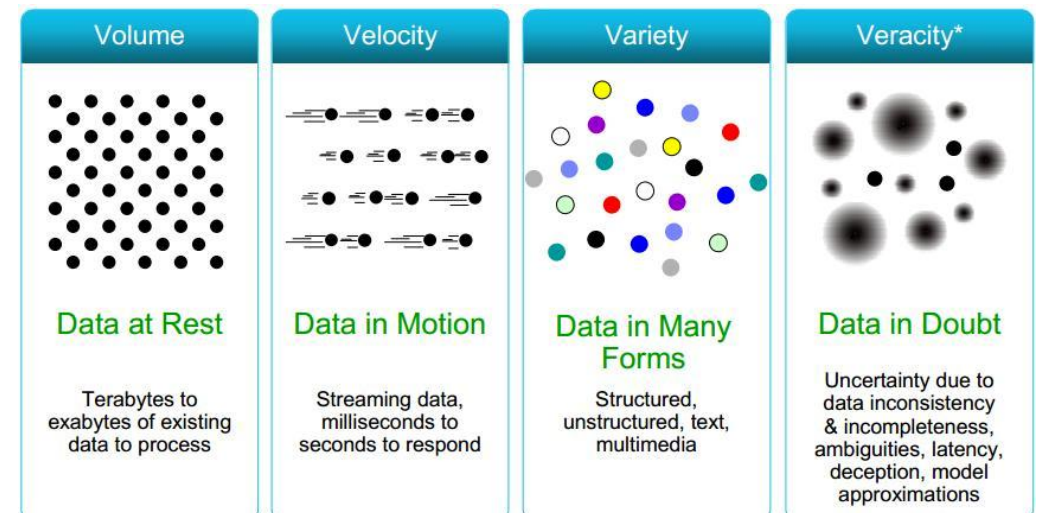
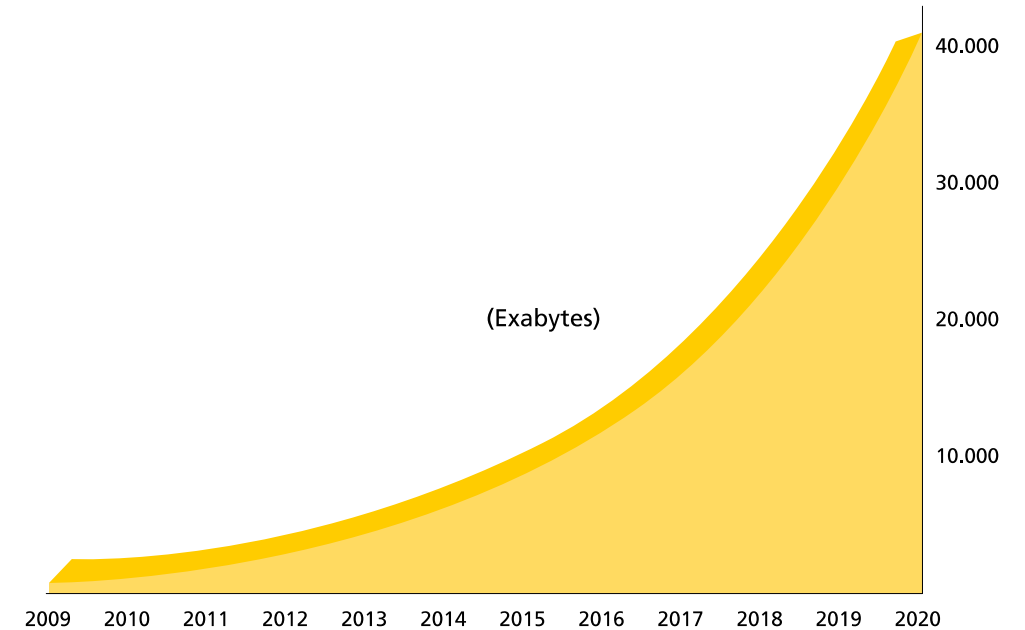
Benjamin Hodgson MBA PhD
Senior research scientist BMT Group
ESPO Conference 2-3 June 2016 !



What is big data?

Defining 'big data'

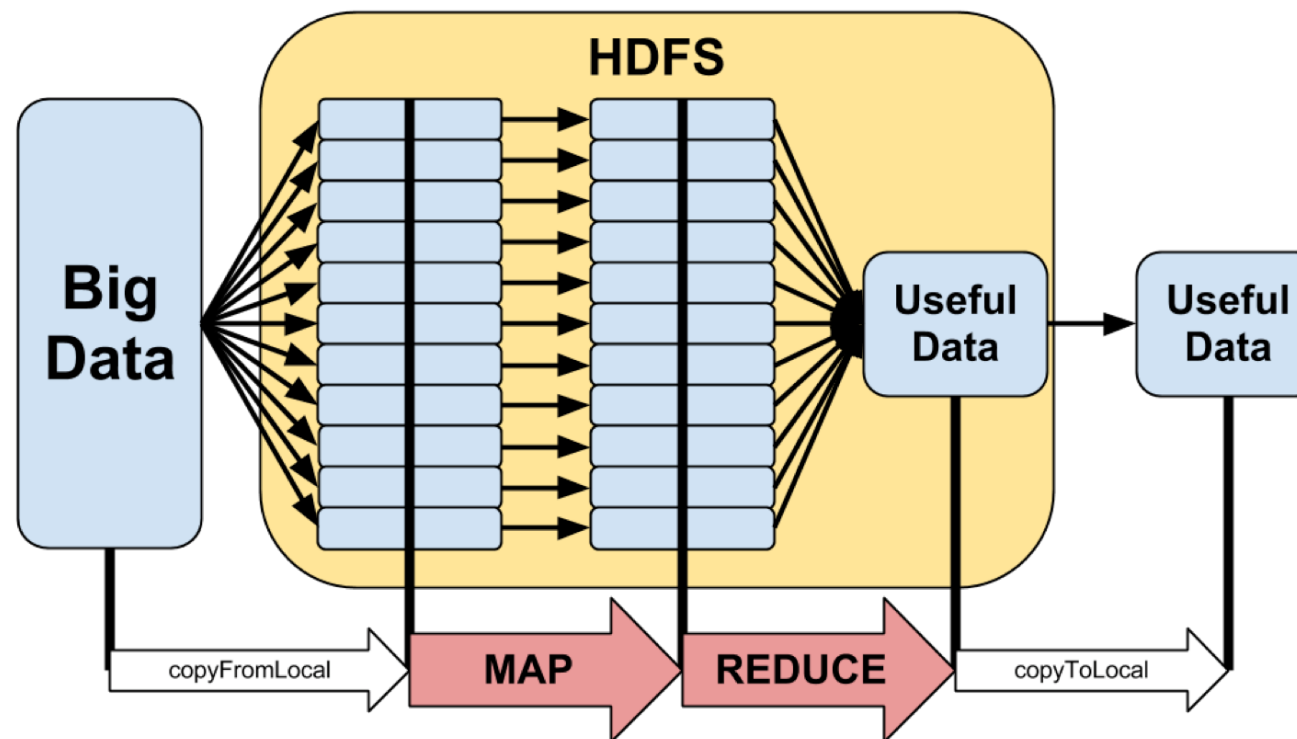
- 2001: Doug Laney at Gartner describes big data in terms of Volume, Velocity and Variety
- 2012: Gartner updates definitions to: “Big data is high is high-volume, high volume, high- velocity and high-variety information assets that demand cost effective, innovative forms of information processing for enhanced insight and decision making.”



Press Enter to search.

The basic idea is to get some data
Split it into chunks and process it in parallel.

- Clean it up
- Simple processing
- Statistics





you are not google



Your data is not that big

Port of Rotterdam:

- 30,000 seagoing vessels per year.
- 110,000 inland vessels per year
- 12.2 million twenty feet equivalent unit per year

Marine traffic (monitors AIS)

- 65/85k vessels visible at any time
- 20B positions archived.

Your expertise is not ITC

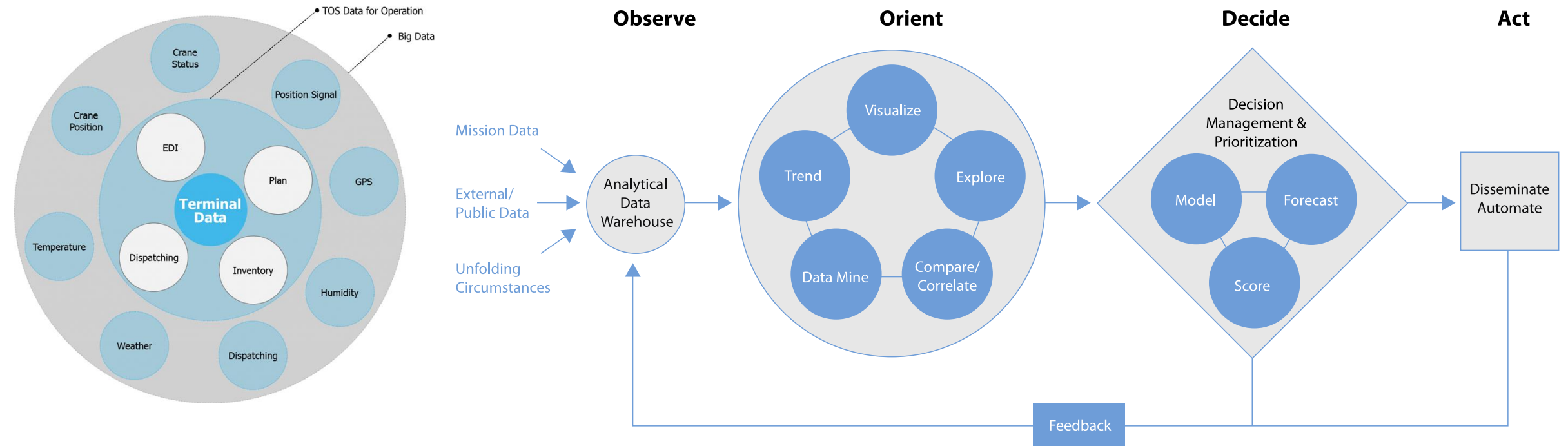
Do you have skills in-house?

- Managing systems
- Data science

Outsourcing carries risks.

- Critical systems.
- Strategic importance.
- Security

It is just about data driven decisions.



Is there anything new here?

Just an enhanced TOS?

Just a normal database?

Just Operational Research rebranded?

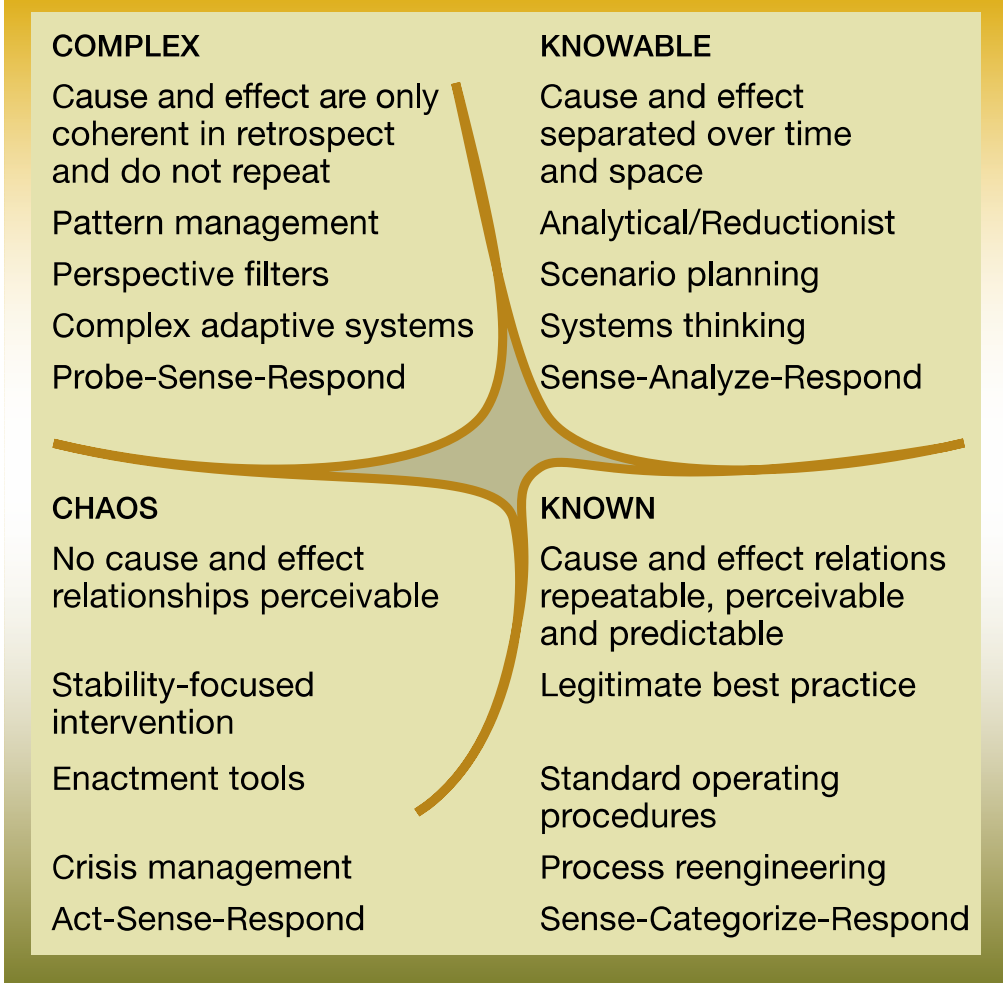
Cynefin domains

The domain of data sharing

- Partner
- Find mutual value.
- Exploit opportunities

People not programs

- Triage
- Visualisation



The domain of modelling

- Modelling & prediction
- Use data to increase understanding.
- Causal relationships must be grounded in reality not just statistics.
- Small scale expert driven projects.

The domain of existing Automation.

- Extension of existing TOC/PCS
- Optimisation & automation.
- Is the benefit worth the effort?

Big Data in Logistics

The Data-driven Logistics Provider



Financial Industry Public Authorities Market Research SME Retail



External Online Sources

Existing Customer Base



5 Customer Loyalty Management
Public customer information is mapped against business parameters in order to predict churn and initiate countermeasures

6 Service Improvement and Product Innovation
A comprehensive view on customer requirements and service quality is used to enhance the product portfolio

3 Strategic Network Planning
Long-term demand forecasts for transport capacity are generated in order to support strategic investments into the network

9 Financial Demand and Supply Chain Analytics
A micro-economic view is created on global supply chain data that helps financial institutions improve their rating and investment decisions

2 Crowd-based Pickup and Delivery
A large crowd of occasionally available carriers pick up or deliver shipments along routes they would take anyway

4 Operational Capacity Planning
Short- and mid-term capacity planning allows optimal utilization and scaling of manpower and resources

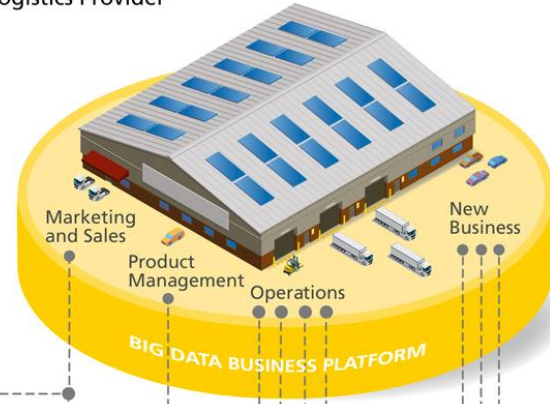
7 Risk Evaluation and Resilience Planning
By tracking and predicting events that lead to supply chain disruptions, the resilience level of transport services is increased

8 Market Intelligence for SME
Supply chain monitoring data is used to create market intelligence reports for small and medium-sized companies

11 Environmental Intelligence
Sensors attached to delivery vehicles produce fine-meshed statistics on pollution, traffic density, noise, parking spot utilization, etc.

1 Real-time Route Optimization
Delivery routes are dynamically calculated based on delivery sequence, traffic conditions and recipient status

10 Address Verification
Fleet personnel verifies recipient addresses which are transmitted to a central address verification service provided to retailers and marketing agencies



Market and customer intelligence

Order volume, received service quality

Customer sentiment and feedback

Continuous sensor data

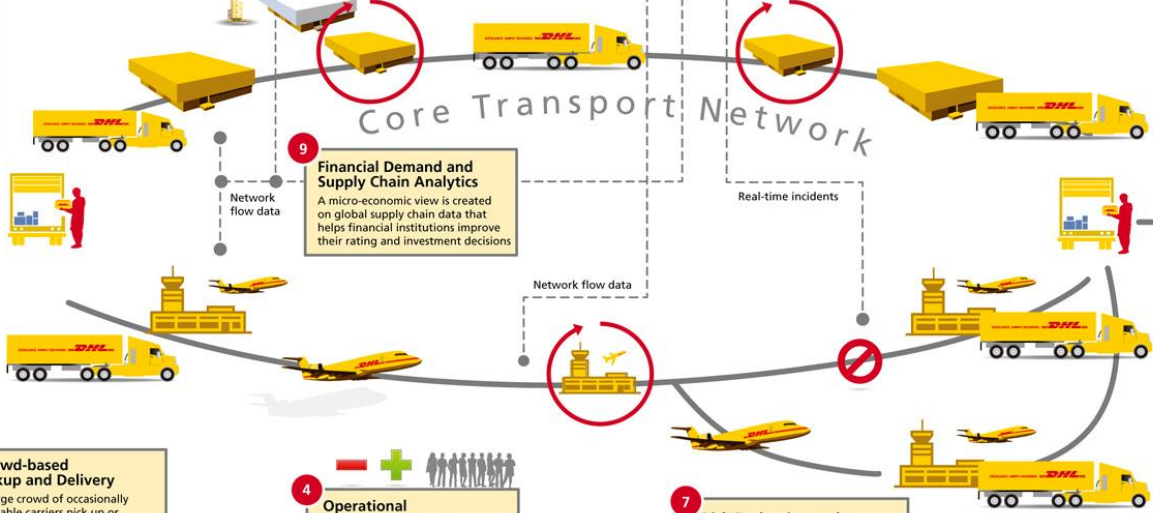
Location, traffic density, directions, delivery sequence

Network flow data

Real-time incidents

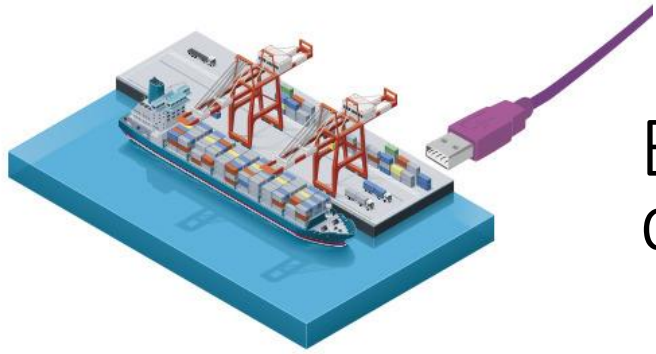
Network flow data

Location, destination, availability



Core Transport Network

Flow of data
Flow of physical goods



Big data is not magic it is just about making better decisions.

Operational improvement.

- Have a clear idea of what you want to achieve
- Keep it simple you don't need a super computer.
- Test small scale before you invest.

Partner & Collaborate

- Your data is valuable to other stakeholders.
- Port and port community system is uniquely placed to integrate stakeholders.
- Be careful to respect legal and commercial confidentiality concerns