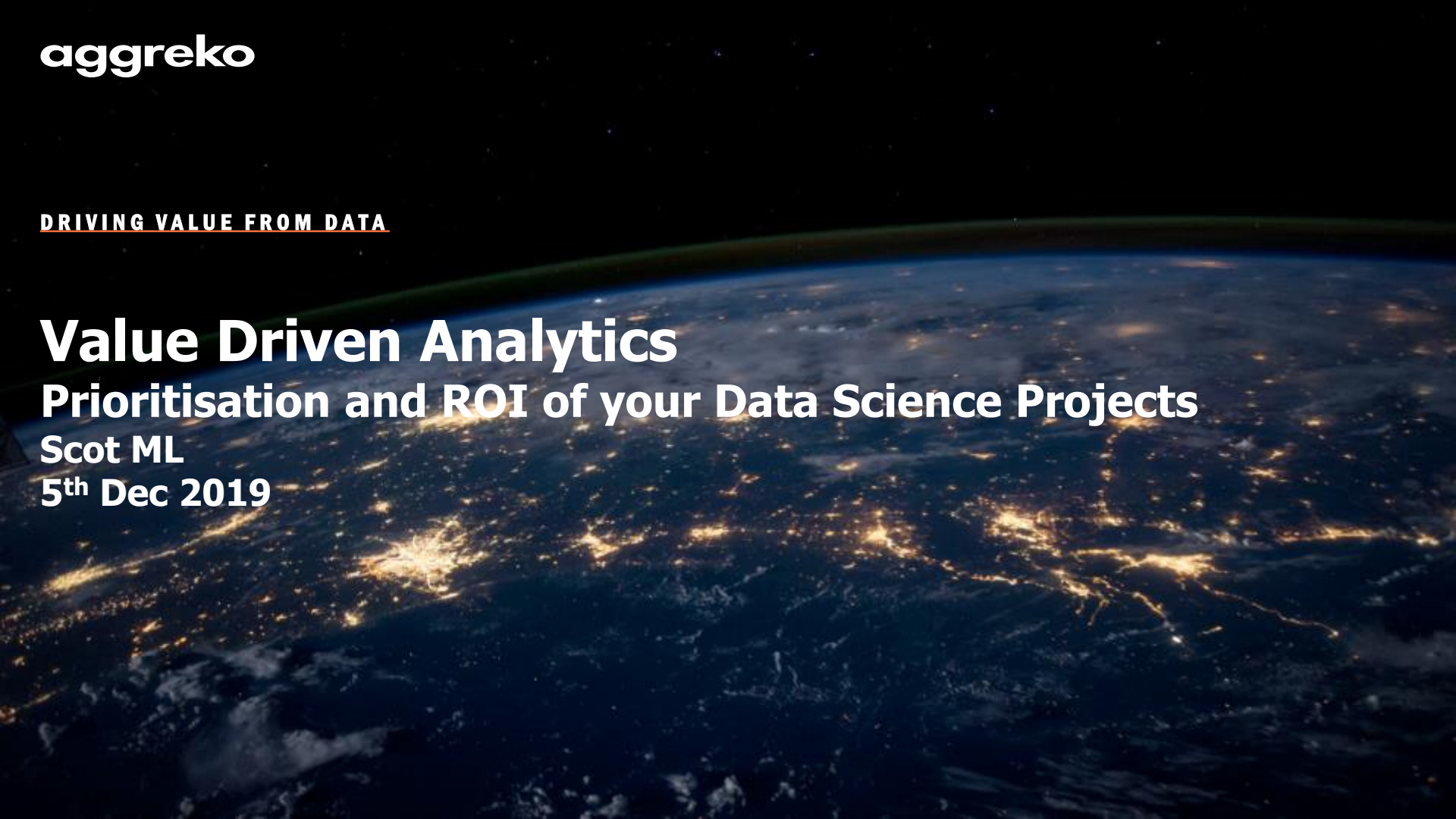
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DRIVING VALUE FROM DATA
Value Driven Analytics
Prioritisation and ROI of your Data Science Projects
Scot ML
5th Dec 2019

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Aggreko Insights Strategy

We will provide trusted insight to our business to enable insight-driven decision making

We will innovate, harnessing the pace at which new technology becomes available to provide interactive and visual insights

We will provide the right information for the right person at the right time, and through the right medium

KEY FACTS

10,009 MW
Power in our fleet

£1,760m
2018 revenue

265 locations
Sales and services centres

7,000 employees
Permanent and temporary

100 countries
Where we operate

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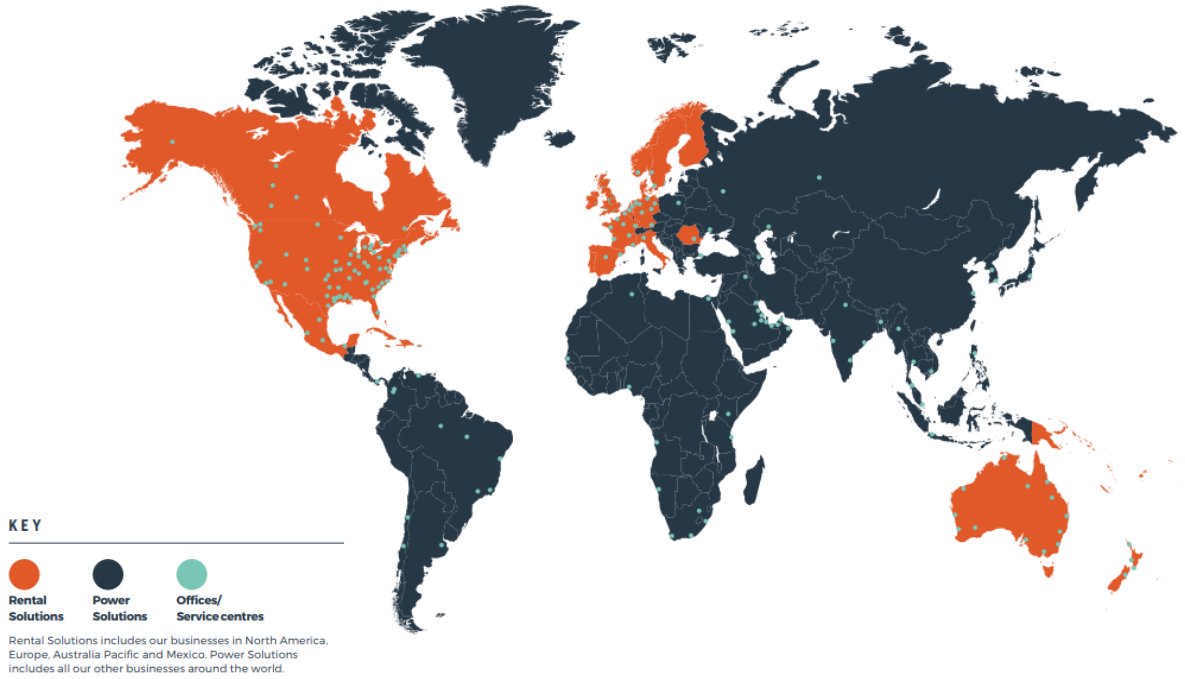


A global company, listed on the London Stock Exchange

Local expertise to help our customers make their difference

WHO THEY?

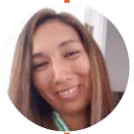
Head of BI & Analytics
Elizabeth Hollinger

Analytics Team Lead
Andy McMahon

BI Manager
Graham Morrow

Technical Lead
John Stewart

Lead Data Engineer
Raymond Callaghan



Senior Data Scientist
Helena Orihuela

Senior Data Scientist

Research Engineer
Diego Arenas

Data Scientist
Lyndsey McKirdy

Data Scientist
James Oyedokun

Data Scientist

IOT Engineer
Calum McCormack

EXTENDING OUR DATA CAPABILITIES

Advanced Analytics
Dedicated to understanding our data at a deeper level with a focus on analysis, algorithms and decisions.

Subject Matter Expertise
Aggreko has expertise across the business which we leverage in every project to ensure we are solving the right problem.

Data Engineering
Tasked with ingestion, transformation and curation of our data using the latest cloud technologies.

Business Intelligence
Provide operational reporting to the business – getting insight to the right people at the right time.

Descriptive
Correlational and casual analysis
Trends and distributions

Diagnostic
Principal component analysis
Clustering and segmentation
Anomaly detection

Predictive
Forecasting
Regression, Classification
Bayesian Modelling

Prescriptive
Simulation (deterministic and stochastic)
Scenario Analysis

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ATTUNITY
Move Any Data. Anytime. Anywhere.

DataScience® foundation
MAKING DATA SCIENCE CONNECTIONS

THE INTERNATIONAL DATA SCIENCE AWARDS 2019

Award Winning Team

- Attunity Microsoft Partner Project Award
- 'Data Excellence' Lloyds Bank National Business Award Winner's 2019.
- Data Science Foundation's 'Data Scientist of the Year' 2019.

VALUE DRIVEN ANALYTICS

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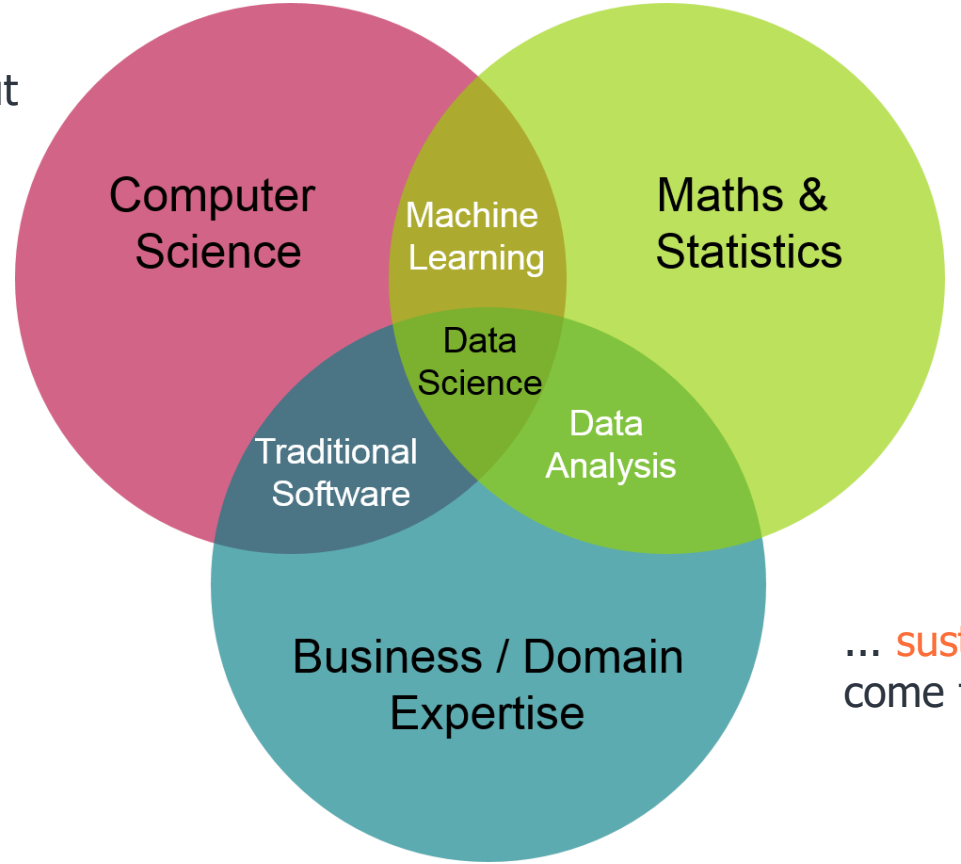
Unicorns do exist, but they are rare …



… sustainable value will come from teams.

BUILDING ON*THAT* VENN DIAGRAM (WITH A NON-VENN DIAGRAM)

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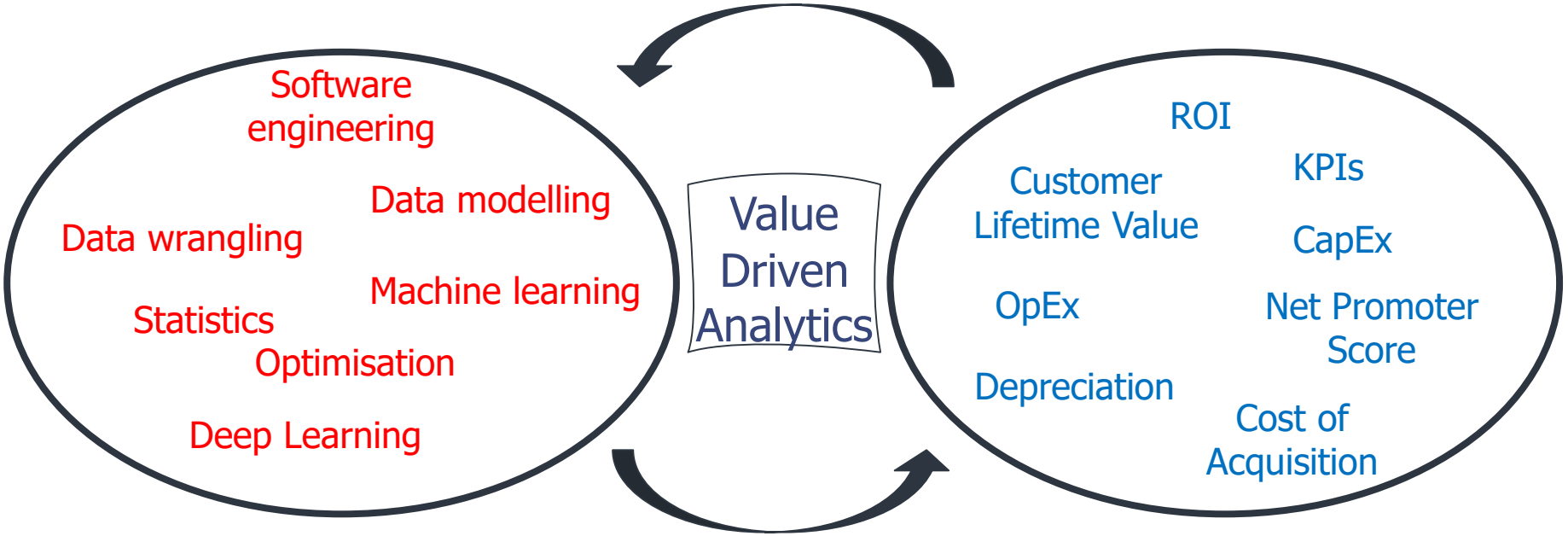

Adapted from the Deloitte Insight Driven Organisation methodology.

VERY NICE, BUT WHERE *IS* THE VALUE?

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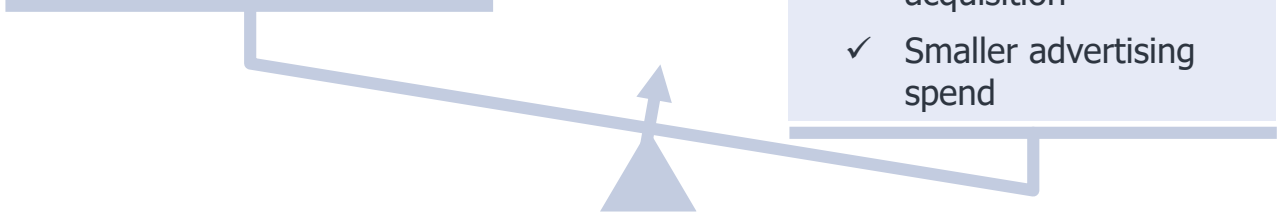
More $ In

- ✓ More sales volume
- ✓ Better conversion
- ✓ Selling insight
- ✓ Improved service levels
- ✓ Upselling
- ✓ Identify new opportunities

Less $ Out

- ✓ CapEx avoidance
- ✓ Lower OpEx
- ✓ Transport Optimisation
- ✓ Reduced Inventory
- ✓ Lower cost of acquisition
- ✓ Smaller advertising spend



PRIORITISATION

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Successful data projects **must start with the problems**, not ideas for solutions

Do Ask: can we increase KPI "X" by 5% within a year?

Don't Ask: how do we build an app to show KPI "X"?

Business value:

Do Ask: what are the five biggest 'value sinks' within my remit?

Do Ask: what stops me from hitting my KPIs / what KPIs should we improve?

Don't Ask: what is easiest for you guys to do?

Don't Ask: what is the cheapest thing for you guys to do?

Definitely Don't Ask: How do we use machine learning to solve this problem?

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The previous exercise gives you your list of potential business problems:

- Improve sales revenues by at least 10% in 6 months
- Reduce transport costs by 5% in a year
- Lower risk of network breach by at least 20% over next 2 years

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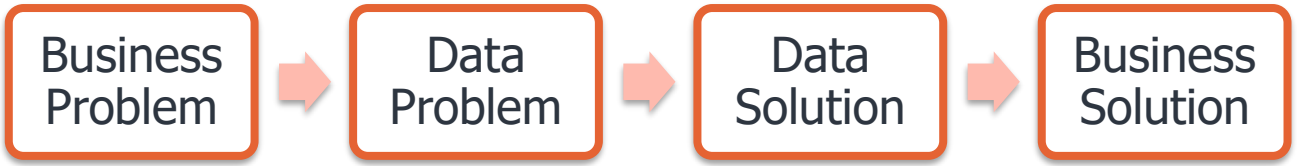
But now you need to map these to data problems and solutions:



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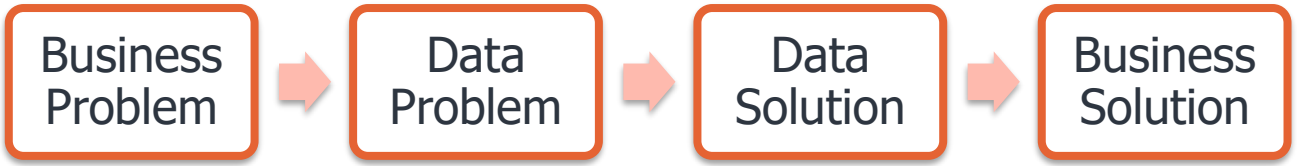

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Suggested Route

Pros:
- Clearest route to solution
- Potentially multiple applications

Cons:
- May not be the most effective
- Reliant on action being taken / suggestions being understood

Medium Route

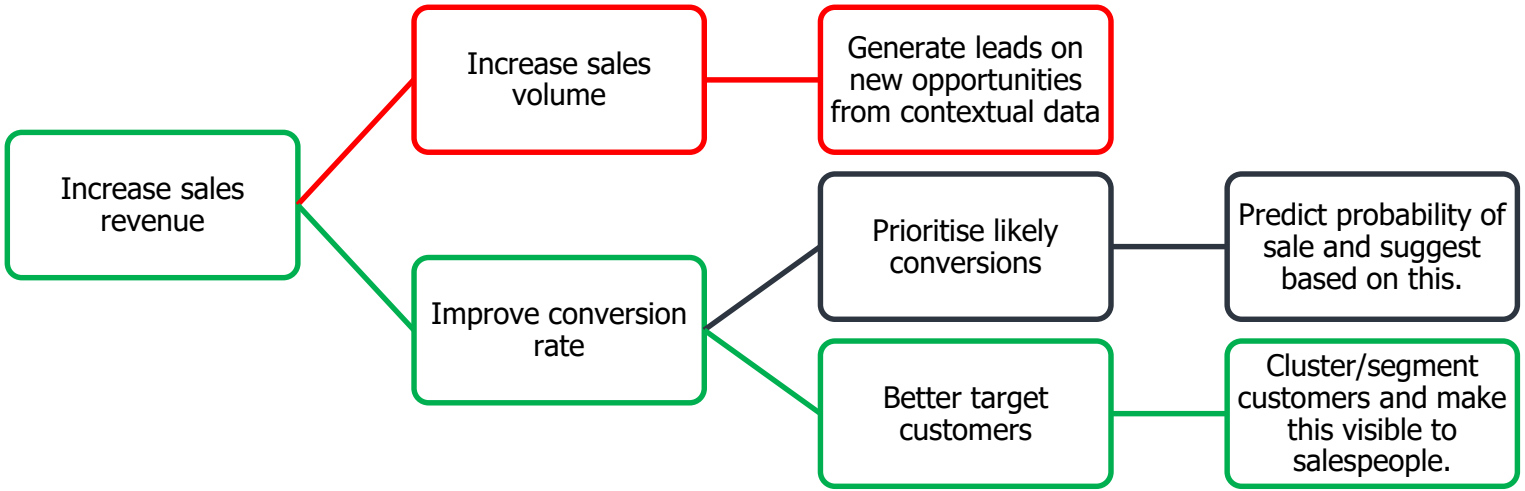
Pros:
- Can be based on classification techniques (standard)
- Can have multiple applications

Cons:
- Contingent on data volume
- No guarantee of accuracy

Hard(er) Route

Pros:
- May be most effective for problem

Cons:
- Likely requires most complex algorithms (NLP etc)
- Limited applicability beyond this project.



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When you are trying to prioritise your work, it can help to 'T-shirt' size (L/M/H) your potential work across different dimensions.

Problem	Complexity	Value	Data Readiness
Customer Segmentation	L	H	M
Transport Optimizer	H	M	H
Network Traffic Anomaly Detection	M	H	H

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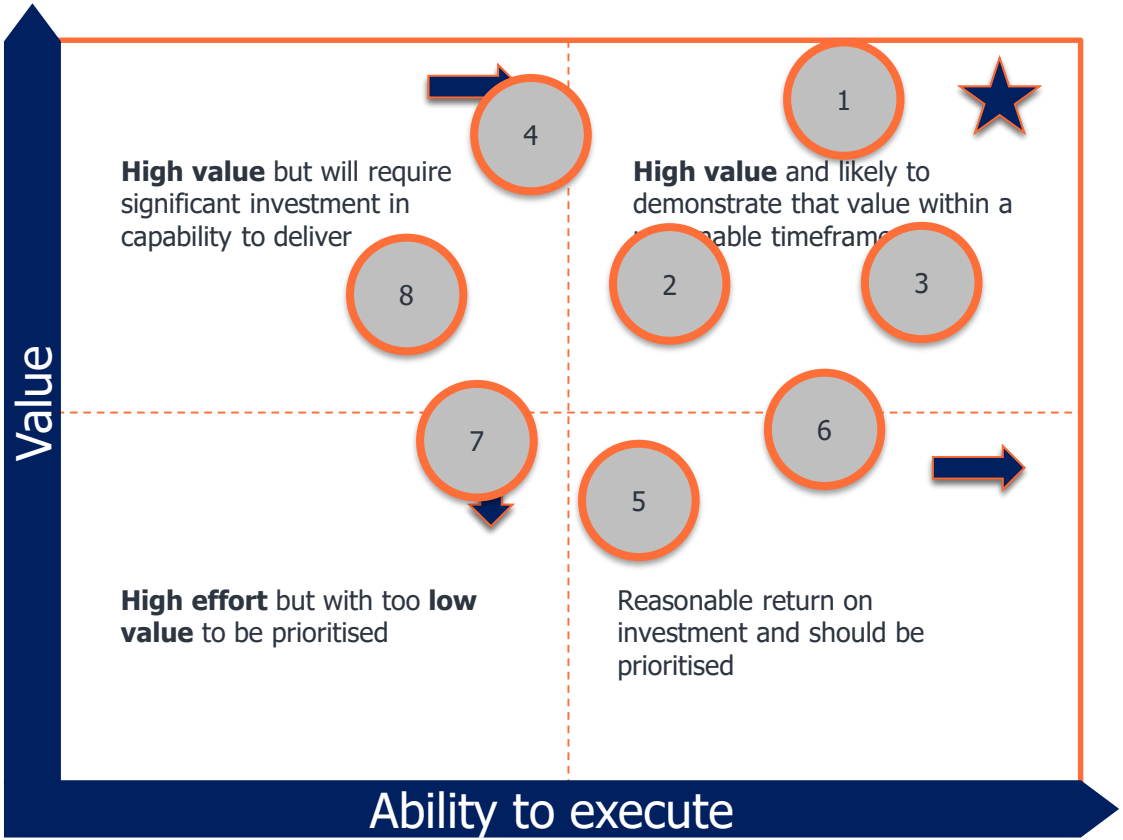
Network Traffic Anomaly Detection	M	H	H

For example, here I would probably go with the 'Customer Segmentation' project, it has a lower data readiness than the anomaly detection project, but to my mind this is made up by the fact that it is lower complexity.

PRIORITISATION – USER/SME DEFINED



ROI

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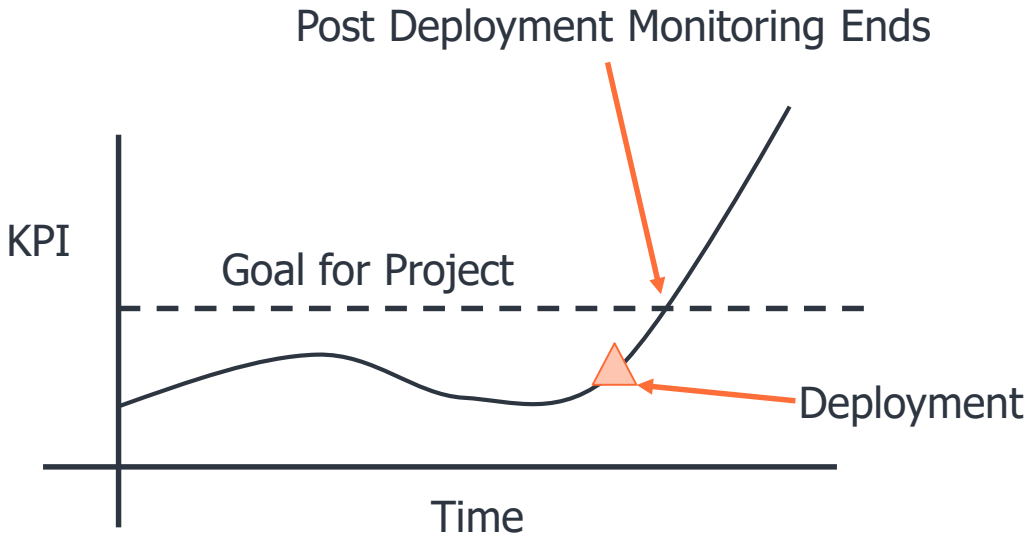

The whole point is to create **value**:

- If we achieve the goal – we stop and move on to the next valuable opportunity.
- If we do not achieve the goal – regroup and decide whether to iterate or park for later.
- Goals must always value driven – what is the minimum viable improvement for this project?
- No vanity metrics!

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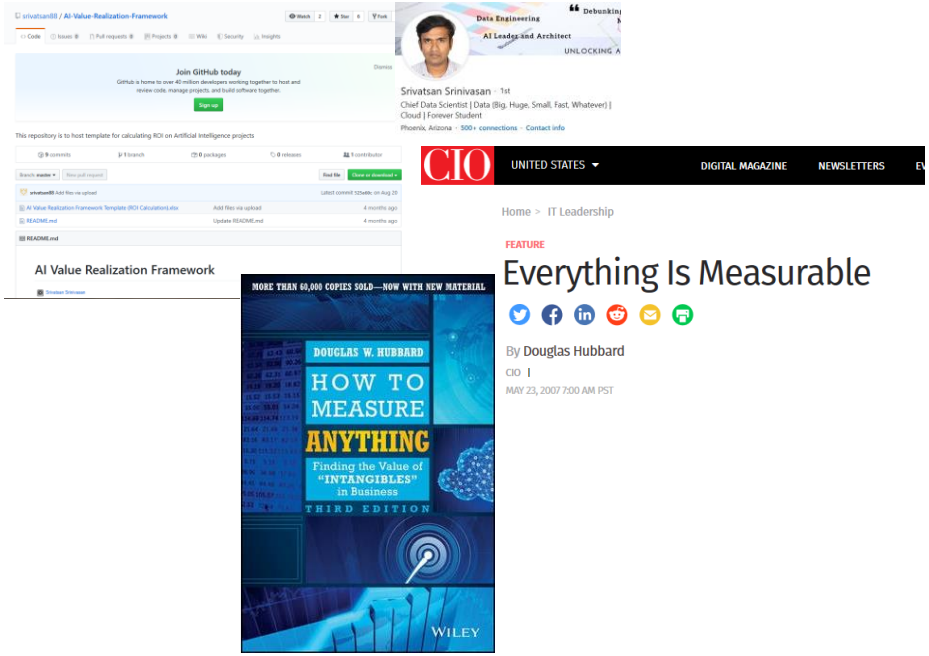
So, we all know that ROI is something like

$$ROI = \left[\frac{Benefits - Investment}{Investment}\right] * 100$$

How do you do this for data science projects?

- Ballpark is enough – you are allowed error bars ….
- Scenarios – Pin your best and worst estimated numbers against these values and see what it looks like.
- Use multiple metrics for benefits: Time saved, sales closed, costs lowered, etc.
- The bigger picture: Often a small (and hard to pin down) contribution to a wider initiative may still dwarf your development costs.

- The wider community is starting to think about this in earnest (good!)
- Some people have been thinking about it for a lot longer (Hubbard).
- The key thing to remember is that the core ideas are the same in any business discipline, the details are what is different for analytics.



https://www.linkedin.com/pulse/identifying-prioritizing-artificial-intelligence-use-cases-srivatsan/
https://github.com/srivatsan88/AI-Value-Realization-Framework
https://www.cio.com/article/2438921/everything-is-measurable.html

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Value Driven Analytics

- Teams, not unicorns.
- More money in, less money out.

Prioritisation

- Ask the business, help them ask the right questions.
- Map Business Problem -> Data Problem -> Data Solution -> Business Solution.
- Decision and hypothesis trees.
- T-shirt sizing.

ROI

- Agree and end point and stick to it.
- Start vague and hone in.
- It’s ok to be ballpark, just be consistent and logical.