Making a Business Case with Machine Learning

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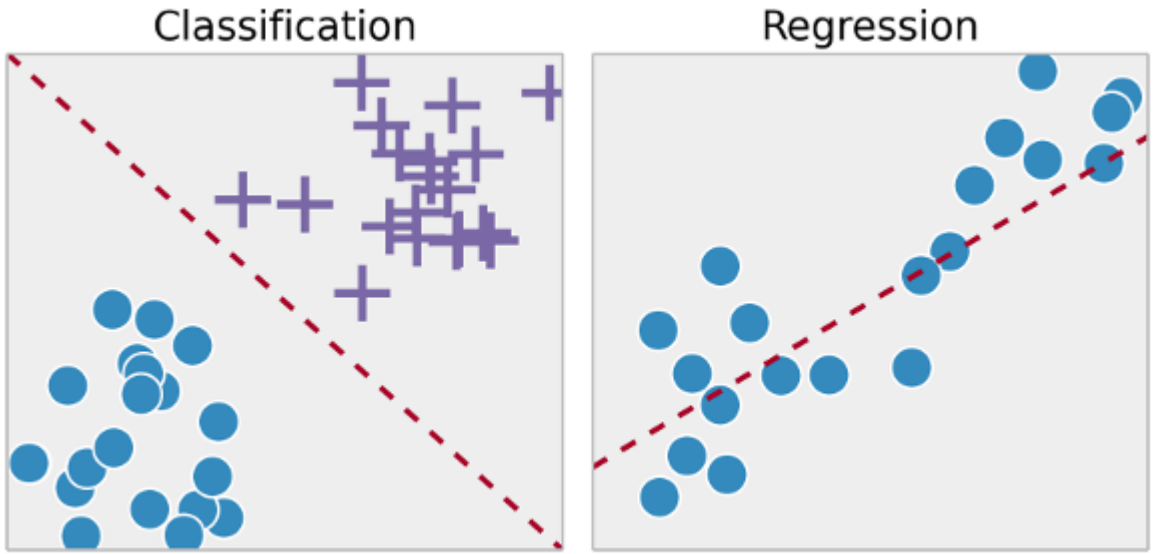
Building Products and Processes with Machine Learning



- Machine learning can be a powerful approach to supporting business processes or within products that require decision making related to forecasting or classification
- ML approaches can provide an advanced level of automation and scalability for decision making
- Deployment of ML methods in a ‘Live’ and automated scenario can require a significant upfront effort
- Before engaging in this effort – it is often critical to build a business case showing the potential costs and benefits of such a system

Applications Requiring a Machine Learning Business Case

Yield Management

Recommendation Engines

Fraud Detection

What problem does it solve?

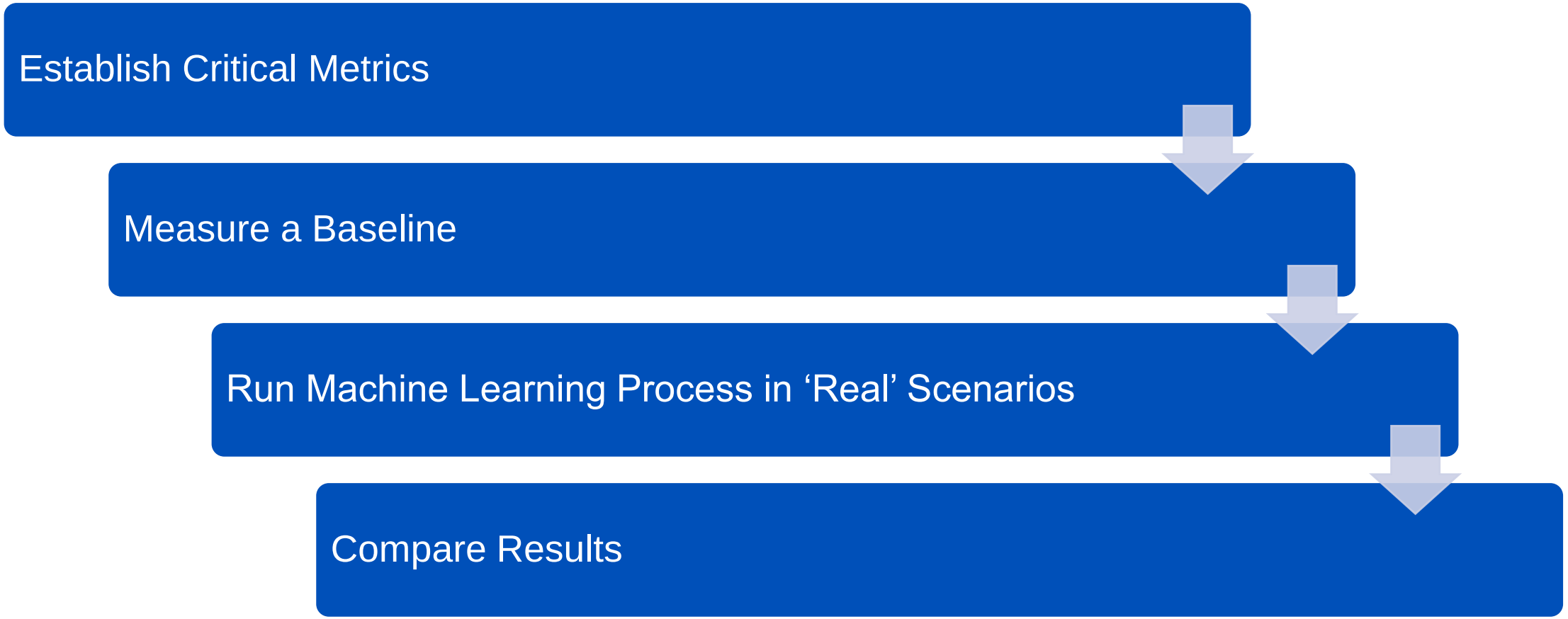
It's better to solve the right problem approximately than to solve the wrong problem exactly.

-John Tukey

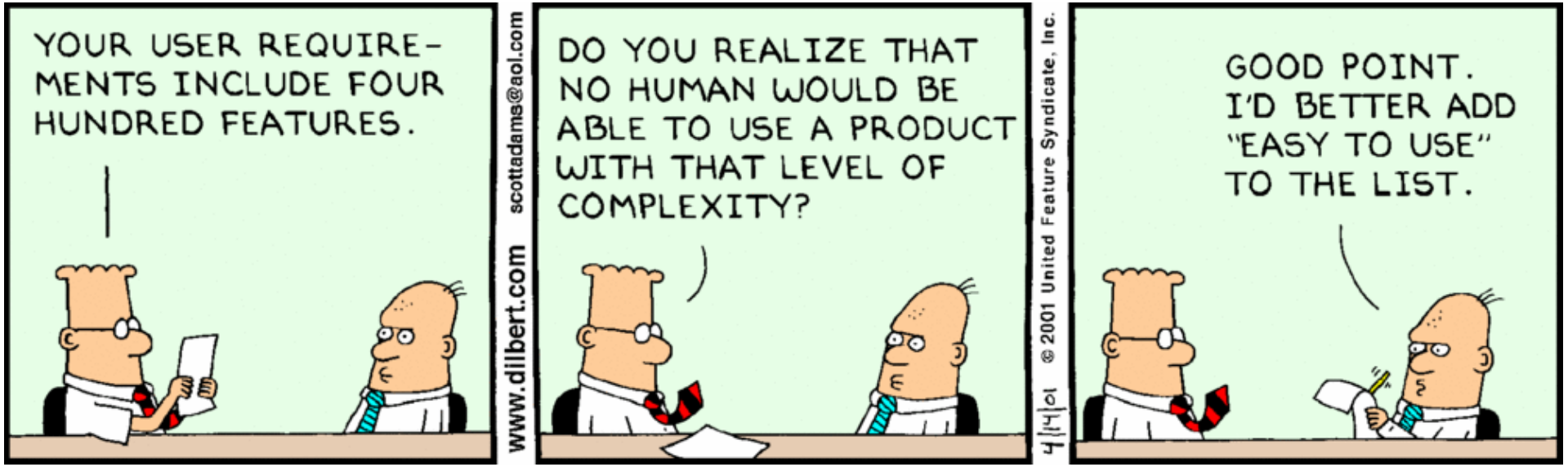
Is the key data available?

- How much effort is required to compile the data feeding into the machine learning model?
- Does implementing the model require ongoing data prep work not being done today?
- Can data prep, storage, and model access be automated?
- Is the data storage scalable?
- Who will be responsible for ensuring data quality?
- Are there data privacy concerns?

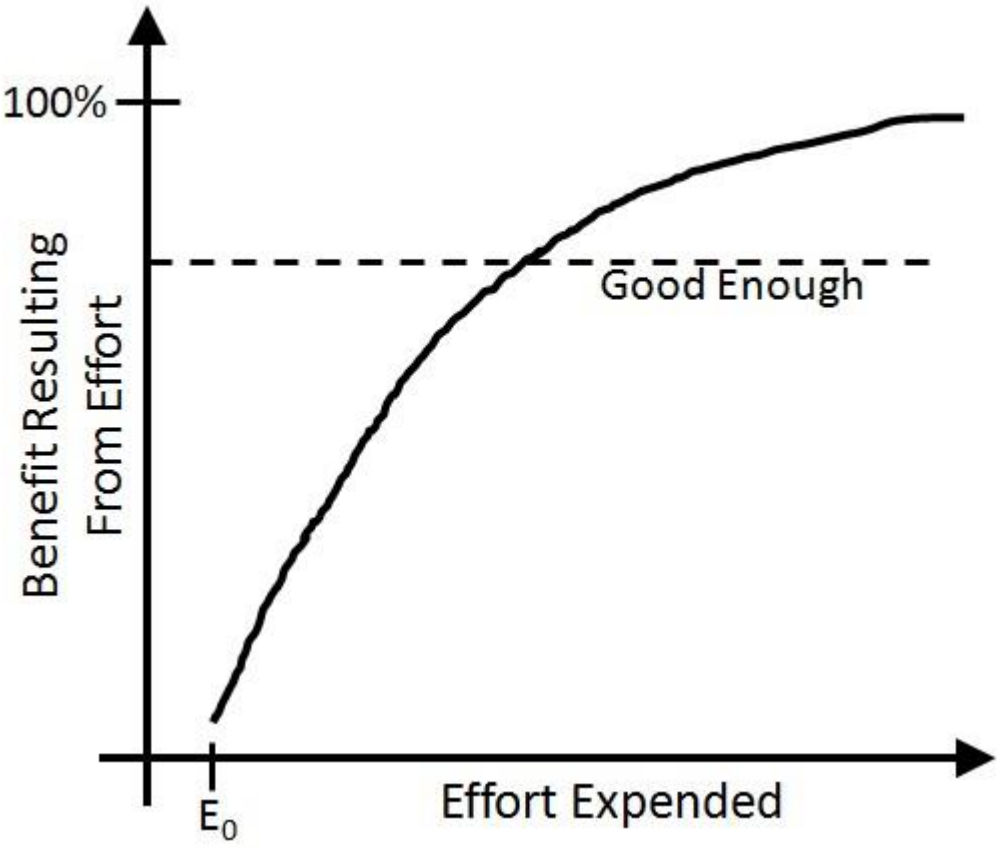
Can we quantify the benefits?



Who is the customer?



How good is “good enough”?



Simplicity and incremental development are key to getting a machine learning project off the ground

Know your risks and have a plan

- Will the ML deployment be critical to the business in real time?
- How will the business be impacted if the ML process went down?
- Is there risk with data quality or storage?
- What business scenarios require manual intervention?
- Is there a back-up for critical staff?

What are the operational impacts?

How will it be maintained?

- Who will monitor system performance?
- Who will ensure ongoing data quality?
- How often will the model be updated?

What are the costs?

Without Machine Learning

- ‘Manual’ Labor
- Costs due to error prone processes
- Costs due to reduced accuracy in decision-making

With Machine Learning

- Increased data storage
- Increased data processing
- Database administrators, modelers, monitoring staff

What is the demand for this solution?

Are multiple clients asking for a solution?

Does it give a competitive advantage?

Can it be productized and built to scale?

Can it significantly improve internal business processes?

Can we use the results of a case study to stir demand?

How will we sell it?

Pulling it all together

Key Take-Aways for Building a Business Case for Machine Learning

- Quantify impact in a compelling way
- Understand how implementation changes business processes and have a plan to deal with that change
- Anticipate maintenance and costs
- Build incrementally and to meet the customers' needs
- Understand data requirements and the technology needed to support it
- Identify a 'Champion' to push for implementation

THANK YOU

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