

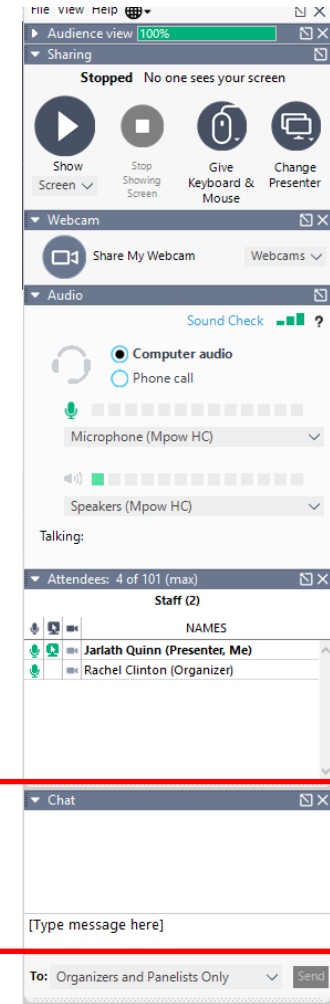


Retaining your most valuable customers with Predictive Analytics

Jarlath Quinn – Analytics Consultant

FAQ's

- Is this session being recorded? Yes
- Can I get a copy of the slides? Yes, we'll email a PDF copy to you after the session has ended.
- Can we arrange a re-run for colleagues? Yes, just ask us.
- How can I ask questions? All lines are muted so please use the chat facility – if we run out of time we will follow up with you.





- Premier accredited partner to IBM and Predictive Solutions specialising in advanced analytics & big data technologies
- Work with open source technologies (R, Python, Spark etc.)
- Team each has 15 to 30 years of experience working in the advanced and predictive analytics industry
- Deep experience of applied advanced analytics applications across sectors
 - Retail
 - Gaming
 - Utilities
 - Insurance
 - Telecommunications
 - Media
 - FMCG



Retention: why is this so important to organizations?



- **Acquiring customers is expensive**
 - Not unusual to cost **6 times** as much as retaining them
 - Understanding who is *most likely* to convert is very cost effective
- **80% of a company's profits come from 20% of its customers**
 - Need to understand these customers requirements
 - How they behave and what keeps them happy
- **Increasing customer retention rates by 5% increases profits by 25% to 95%.**
 - Study by Bain & Company, working with Earl Sasser of Harvard Business School

Incremental gains in one business area can lead to *extremely* compelling ROI

Sometimes its just simpler...



Core Applications in Predictive Analytics



attract

Acquire customers:

- Understand who your best customers are
- Connect with them in the right ways
- Take the best action maximize what you sell to them



grow

Grow customers:

- Understand the best mix of things needed by your customers and channels
- Maximize the revenue received from your customers and channels
- Take the best action every time to interact



retain

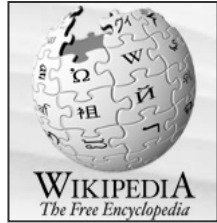
Retain customers:

- Understand what makes your customers leave and what makes them stay
- Keep your best customers happy
- Take action to prevent them from leaving

Predictive
Customer Analytics

Acquire
Grow
Retain





“Predictive analytics encompasses a variety of [statistical](#) techniques from [data mining](#), [predictive modelling](#), and [machine learning](#), that analyze current and historical facts to make [predictions](#) about future or otherwise unknown events.”

Table (34 fields, 7,043 records)

File Edit Generate

Table Annotations

	h	\$R-Churn	\$RC-Churn	\$R1-Churn	\$RC1-Churn	\$RI1-Churn	\$L-Churn	\$LC-Churn
1	ing	No	0.889	No	0.930	11	No	0.734
2	ing	Yes	0.889	Yes	0.705	39	Yes	0.593
3	ing	Yes	0.556	No	0.729	25	No	0.545
4	ing	No	0.778	No	0.812	23	No	0.681
5	ing	No	0.889	No	0.883	8	No	0.677
6	ing	No	1.000	No	0.986	10	No	0.843
7	ing	No	0.889	No	0.883	8	No	0.578
8	ing	Yes	0.556	Yes	0.605	41	Yes	0.505
9	ing	No	0.556	No	0.796	34	No	0.687
10	ing	No	0.778	No	0.779	43	No	0.604
11	ing	Yes	1.000	Yes	0.705	39	Yes	0.643
12	ing	No	0.778	No	0.883	8	No	0.769
13	ing	Yes	1.000	No	0.558	35	No	0.615
14	ing	No	1.000	No	0.986	10	No	0.815
15	ing	No	0.778	No	0.880	26	No	0.604
16	ing	No	0.556	No	0.729	25	No	0.554
17	ing	Yes	0.556	Yes	0.503	29	No	0.511
18	ing	No	0.778	No	0.750	45	No	0.651
19	ing	Yes	0.556	No	0.796	34	No	0.533
20	ing	Yes	0.556	No	0.812	23	No	0.638
21	ing	No	0.778	No	0.883	8	No	0.573

OK

Predictive Analytics generates new data

What do we mean by 'Predictive Analytics'?



- These data take the form of estimates, probabilities, forecasts, recommendations, propensity scores, classifications or likelihood values
- Ironically, it's not *always* about prediction *per se*
- Predictive Analytics often underpins sophisticated *Loyalty Analytics*

At the heart of loyalty analytics is the model

- Predictive Analytics uses historical data from many people/incidents
- Age, Gender, Average Spend, Product Category, Region, Tenure etc.
- With known outcomes/results
- Responded, upgraded, defaulted, recommended, donated, **cancelled or renewed**
- To build a reusable model



=



Model

At the heart of loyalty analytics is the model

- We can take new data from individuals or incidents...
- Age, gender, average spend, sentiment, tenure, time since last visit
- Using a model based on the same information...
- Generate probability values, likelihood scores and estimates
- In other words.....predictions



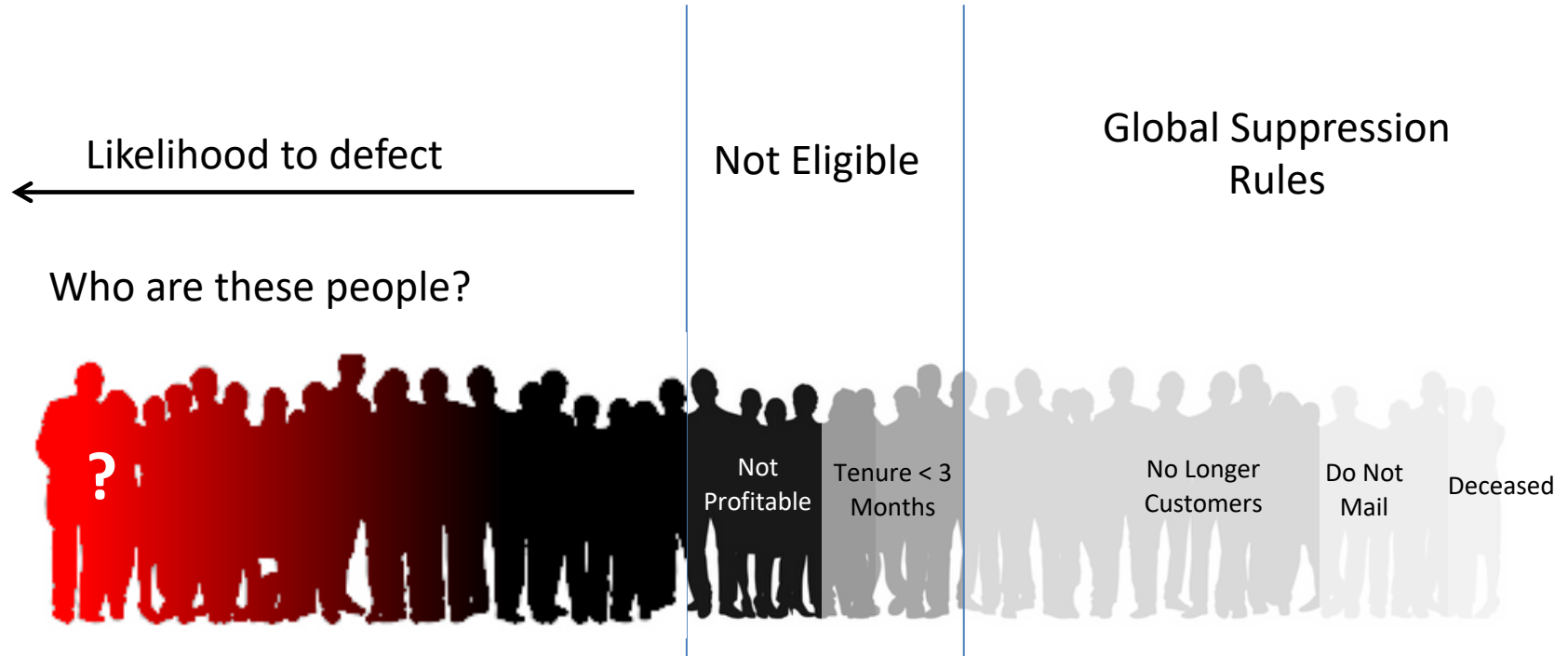
**32% CHANCE OF
CANCELLATION**

**Predicted Lifetime
Value = £938**

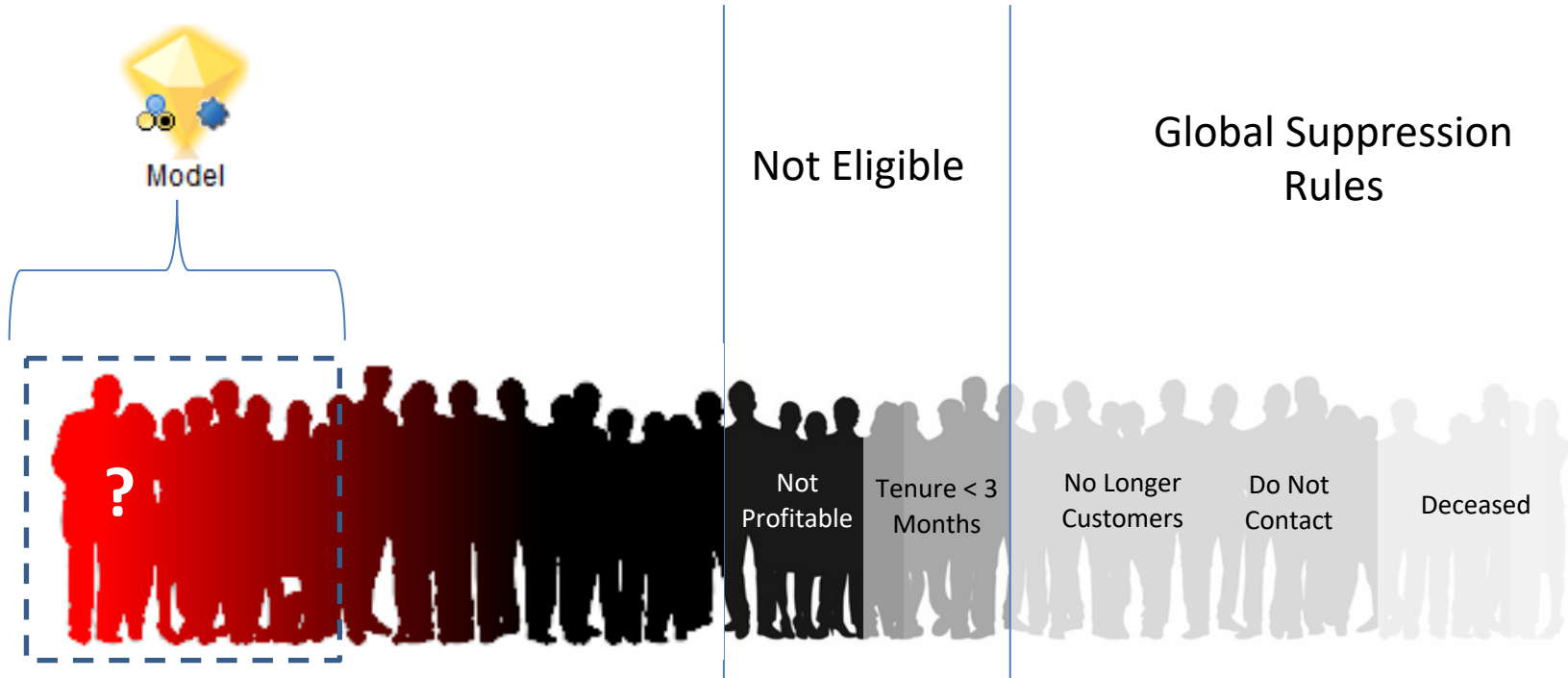
**Estimated
NPS = 6**

0.13 probability
recommending

In customer retention, loyalty analytics enhances the existing process..

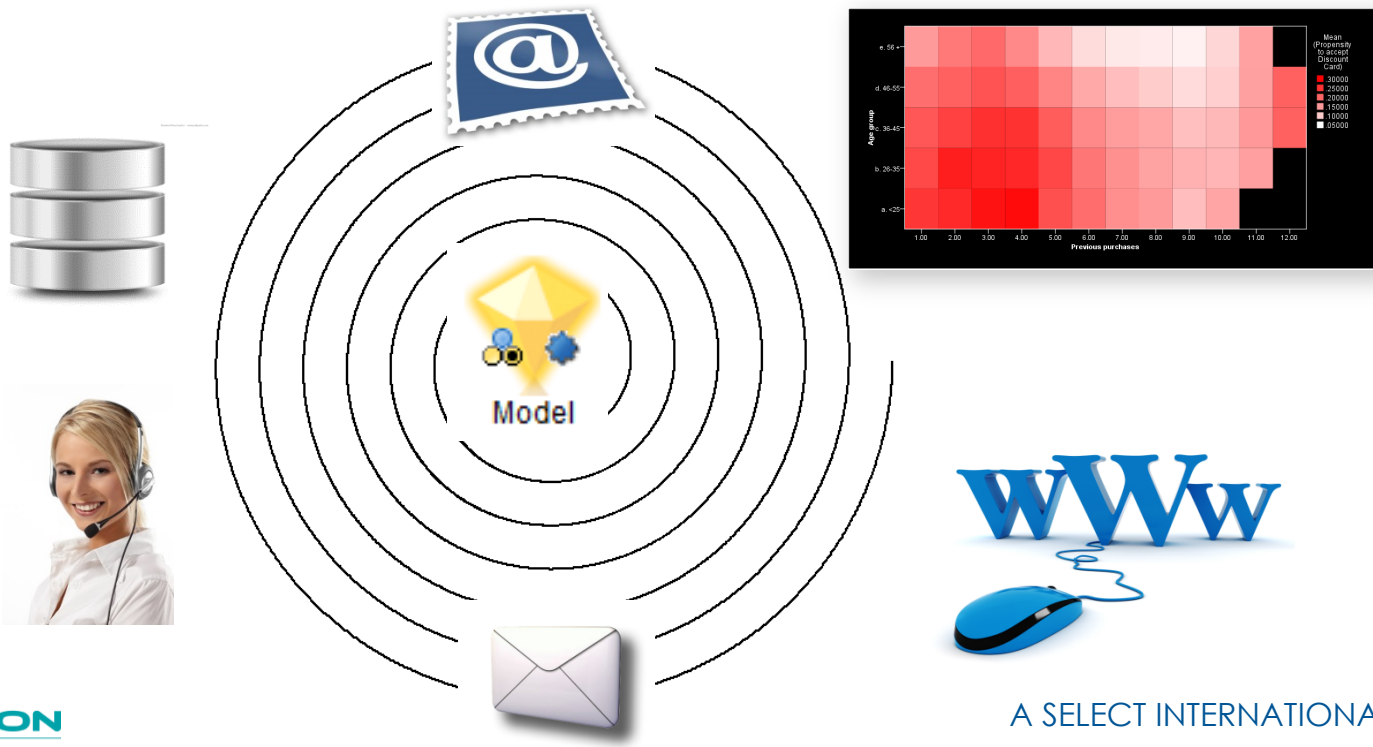


By finding and quantifying the risk of defection...



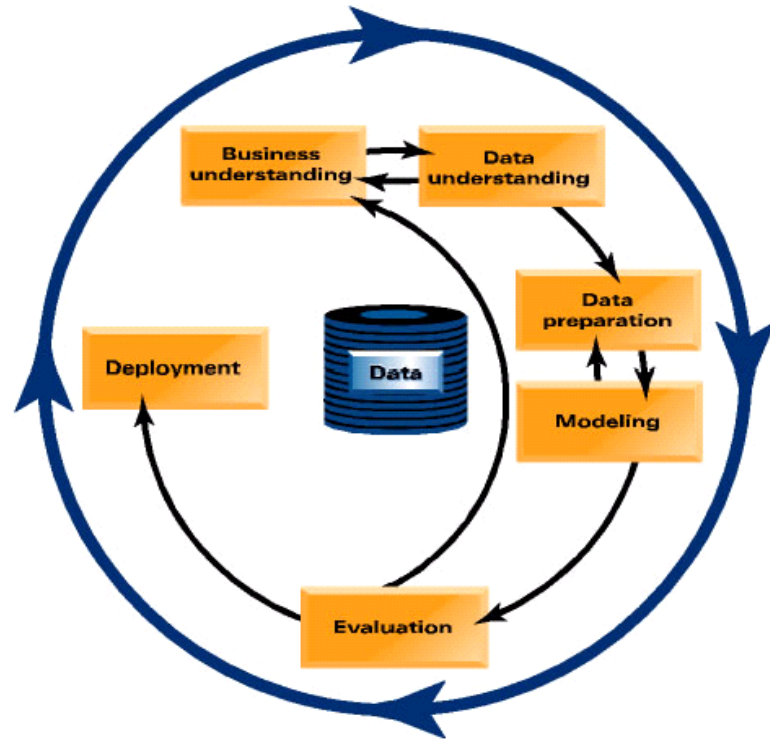
...and *taking action* to mitigate customer loss

- We can deploy the risk estimates and predictions through multiple channels to make better decisions



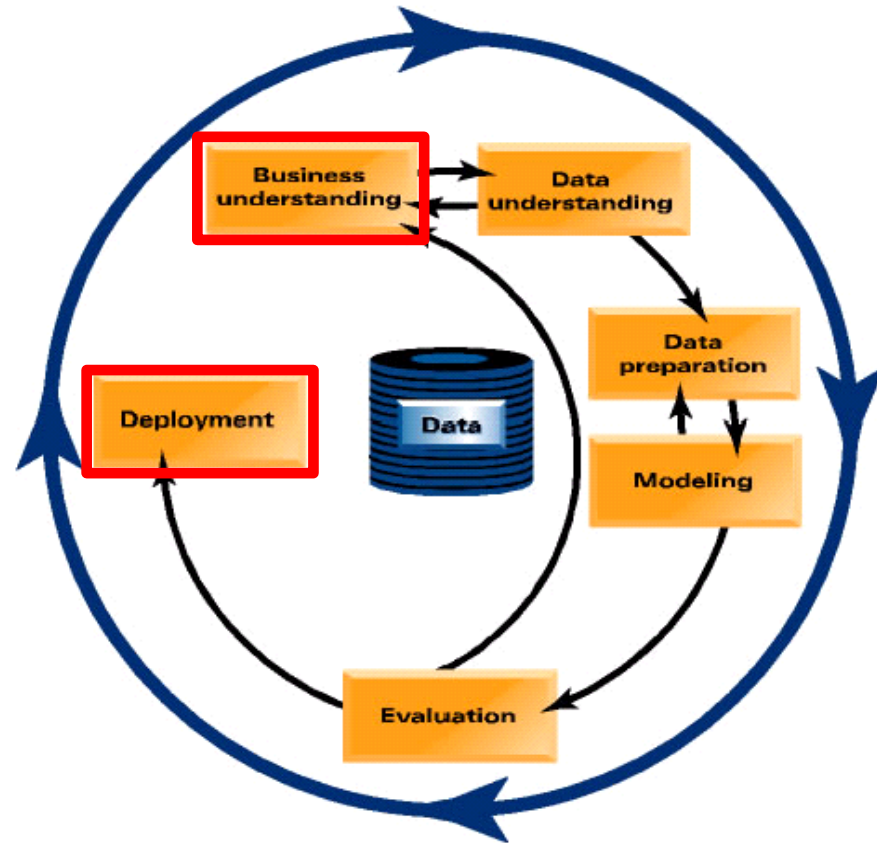
How we ensure it will work?

By making a plan



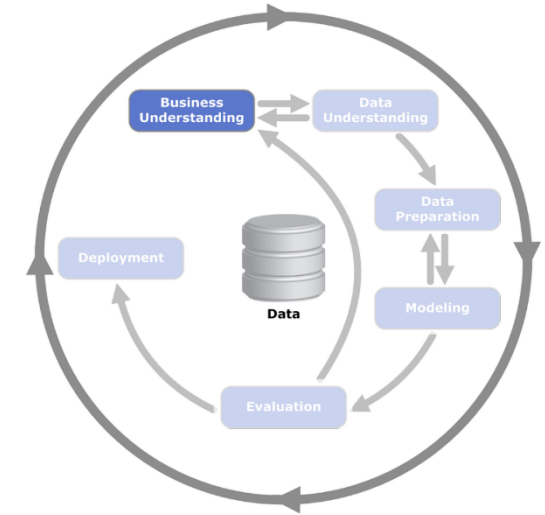
- Non-proprietary methodology
- Cross-Industry Standard Process for Data Mining (CRISP-DM)
- www.crisp-dm.eu

- With predictive modelling, the *start* and *end* of the process are the most important stages of a project
- These are the parts of the plan that the inexperienced fail to pay enough attention to



For Example: Business Understanding

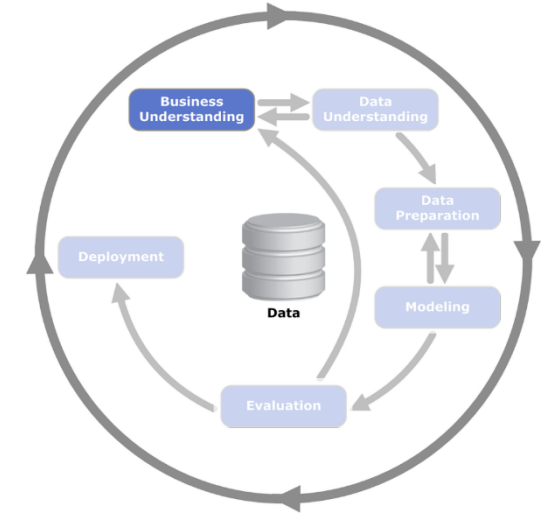
- Often the most overlooked part of the project
- Provides the context and reasoning for the initiative
- Consists of a written and agreed plan with documented and measurable objectives
- Effective Predictive Analytics projects are “front-loaded” with a solid Business Understanding



It is critical that everyone understands what a successful outcome from the project will look like and what will happen differently as a result of it

Poorly Documented Business Understanding

- “Aim of the project is to build an accurate model to predict subscribers at risk of cancelling their contracts”
- “By identifying at risk subscribers, effective action in the form of additional offers can be taken to reduce the likelihood of churn” *

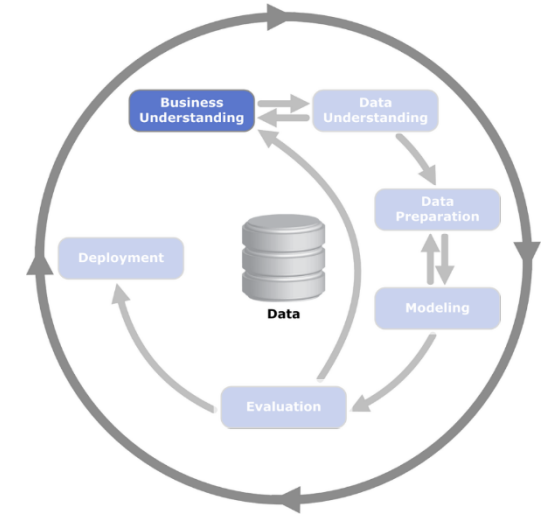


*Note: this is *not* un-typical

A SELECT INTERNATIONAL COMPANY

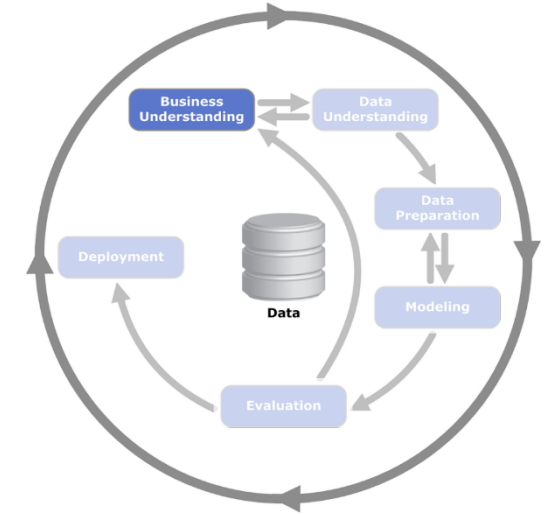
Well Documented Business Understanding

- Primary Business objective: **Increasing customer loyalty**
- “...stipulated as a strategic goal for the company. It’s recognised that costs associated with customer acquisition have been rising in recent years and that increasing pressure from competitor activity has led to a slowdown in the growth of market share”. **So this is regarded as a *valuable objective*.**
- “Due to the contractual basis of our business model, we can identify precisely when new customers are acquired and when they cease to transact with us”. **So this is a *measurable outcome*.**
- “Previous analysis using satisfaction surveys has shown that if we are able to identify customers likely to cancel their contracts three months before their termination date, we can persuade around 50% of them to renew their contracts with us”. **So this can be regarded as an *actionable result*.**



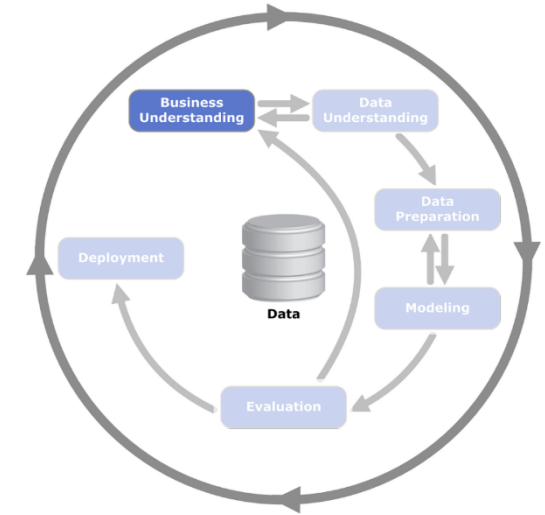
Well Documented Business Understanding

- A key output from the Business Understanding stage should be to figure out the *rationale for the application* in terms of the financial consequences
- The average cost incurred with persuading customers to renew an existing contract is **\$35** (let's assume this is only incurred by those who agree to renew)
- The average annual revenue received from a contract is **\$132**
- The cost per head of acquiring and onboarding new customers is **\$45**



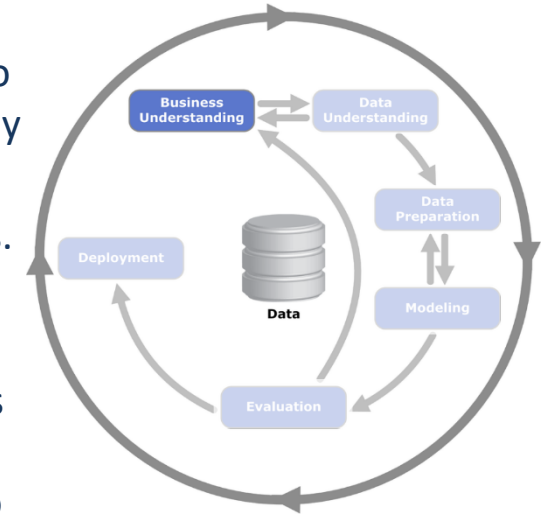
Well Documented Business Understanding

- If we assume that it only takes one month to replace a customer, then the lost revenue on average is only **\$11**
- However, to replace the customer, the acquisition and onboarding costs mean that this value jumps to **\$56**
- If the company is losing 100,000 customers a year (a not unreasonable number) then the total costs are **\$5.6 million**
- Let's assume a modest-performing model identifies what it thinks are the top 30,000 customers who are likely to leave (or 'churn') annually. So that is only **30% of the 100,000 churners**



Well Documented Business Understanding

- Of course, we can't assume that the model is completely accurate, so let's assume that it's only right 2 out of 3 times. Meaning that we may **only identify 20,000 customers** who will churn annually.
- But we can only hope to persuade 50% of them to remain customers. So that's 10,000 customers we have retained and 90,000 customers who cancel their contracts
- It now costs the company \$5.04 million to replace the lost customers and they will incur additional retention costs of \$350K to persuade 10,000 customers to renew their contracts bringing the total costs to \$5.39 million.
- This represents a relatively modest but worthwhile *cost reduction of \$210K*.
- Crucially though, in doing so they will have managed to retain 10,000 customers with total annual revenues of \$1.35 million.

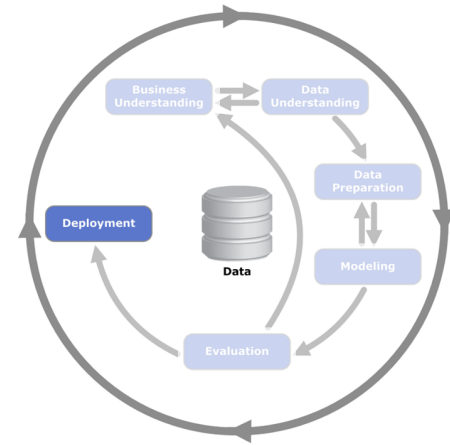




Let's look at an example...

Deployment

- *Proving* that the application works may mean that we have to think of the entire exercise as an experiment with testable results



What do we (Smart Vision) talk about when we're discussing a prospective Predictive Analytics application?

1. Why do they want to do this?
2. What will it take to make it work?
3. What does 'good' look like?
4. How will we know it worked?

What do we not talk about when we're discussing a prospective Predictive Analytics application?

1. Algorithms

Advice to get started

- **Make a plan:** *Think* about where you would get *biggest impact* for the *least effort*.
- Consider adopting a proven methodology e.g. CRISP-DM (www.CRISP-DM.eu)
- Don't get hung up on modelling techniques - focus on *Business Understanding* and *Deployment*
- Consider the full data landscape
- Consider the sorts of roles involved /impacted
- How will you know its worked? Focus on measuring the benefit – e.g. response rate lift, increased cross-sell, revenue/profit impact
- Check the Smart Vision Europe website **sv-europe.com**

Download our new e-book for free



The insider's guide to predictive analytics

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Contact us:

+44 (0)207 786 3568

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