Is this acceptable any more?

Source: xkcd.com

Three horizons of innovation

Horizon 1
Developing the core

Horizon 2
New opportunities within existing business

Horizon 3
Transformation opportunities
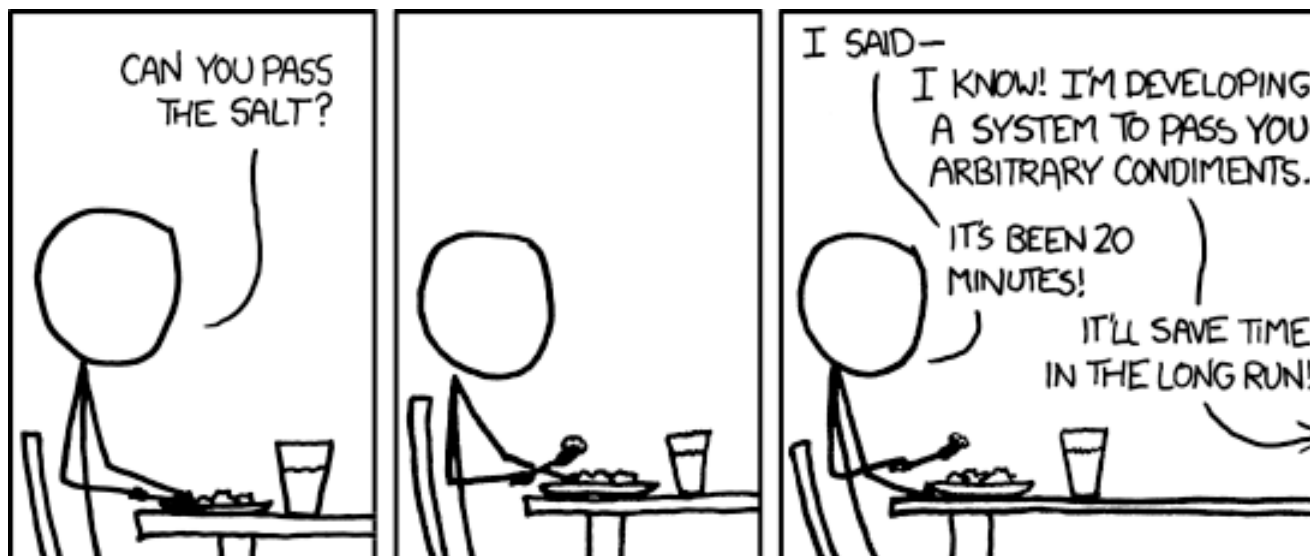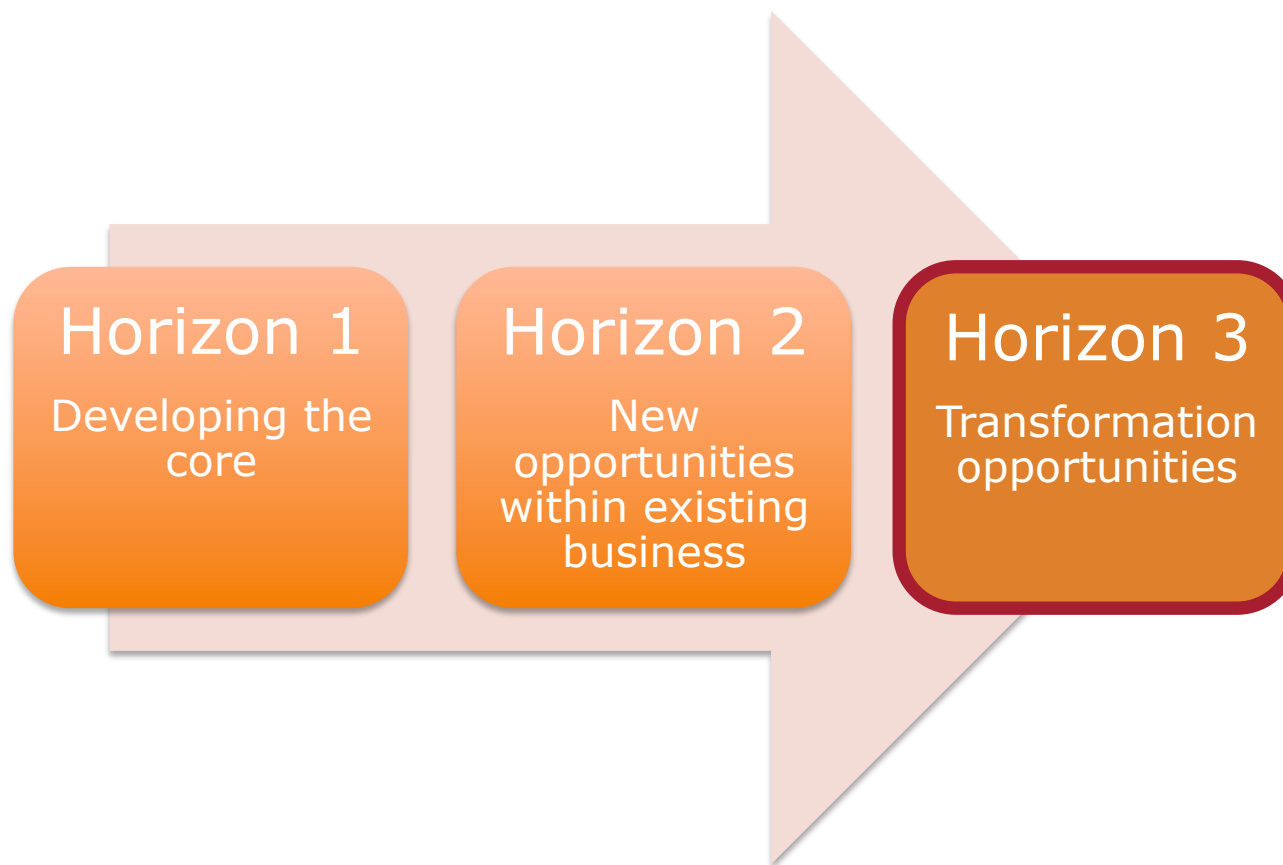
Source: Steve Coley of McKinsey

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What does *agile* mean to us?

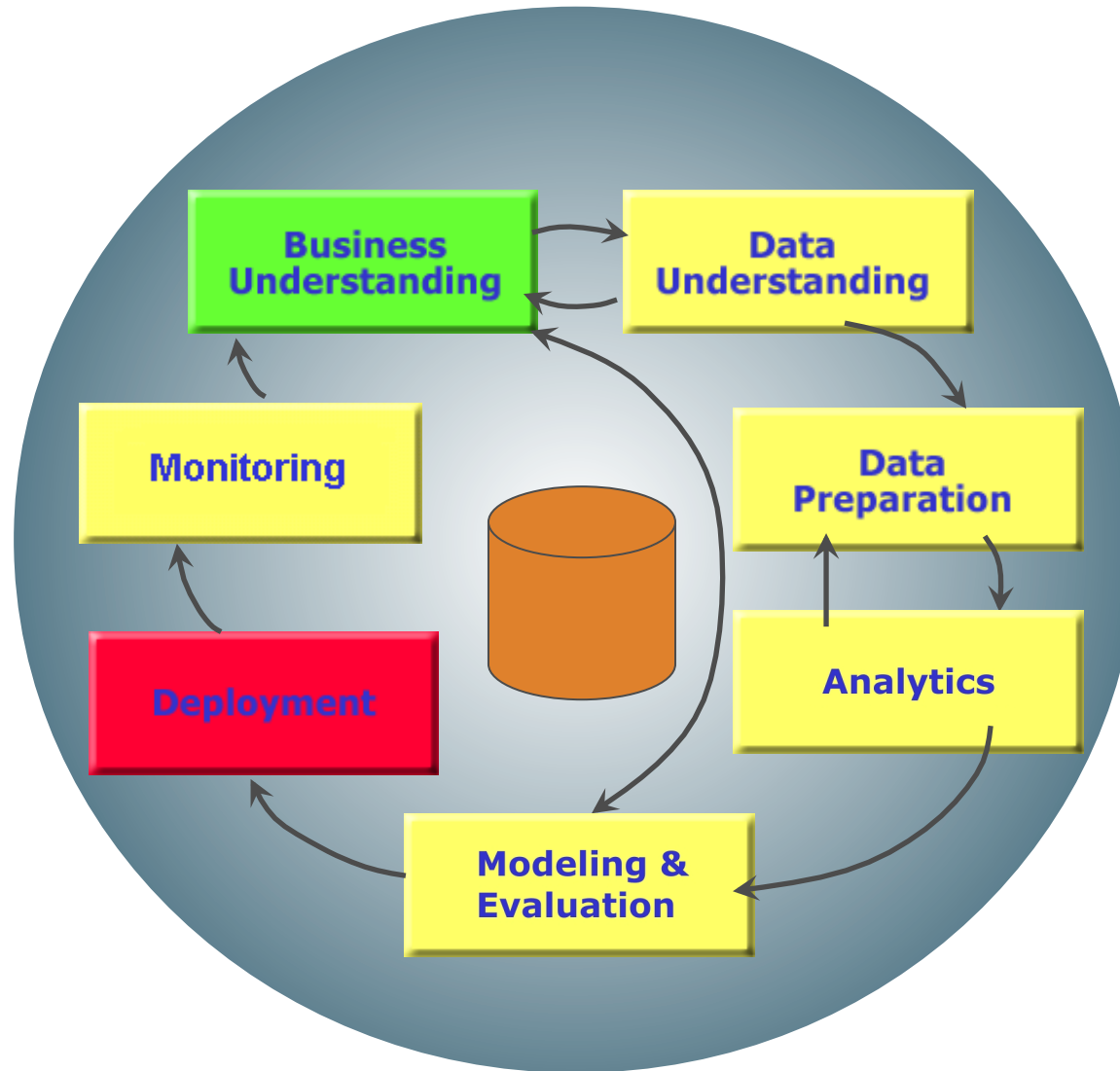- Agile is a rapid approach to experimenting in an analytical approach
- It involves teams of business users and analysts
- It requires a fail fast/agile mindset
- It drives real benefits
  - > Direct benefit to business
  - > Learning benefit to analysts and business
- Driving lots of analytics

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Fail fast

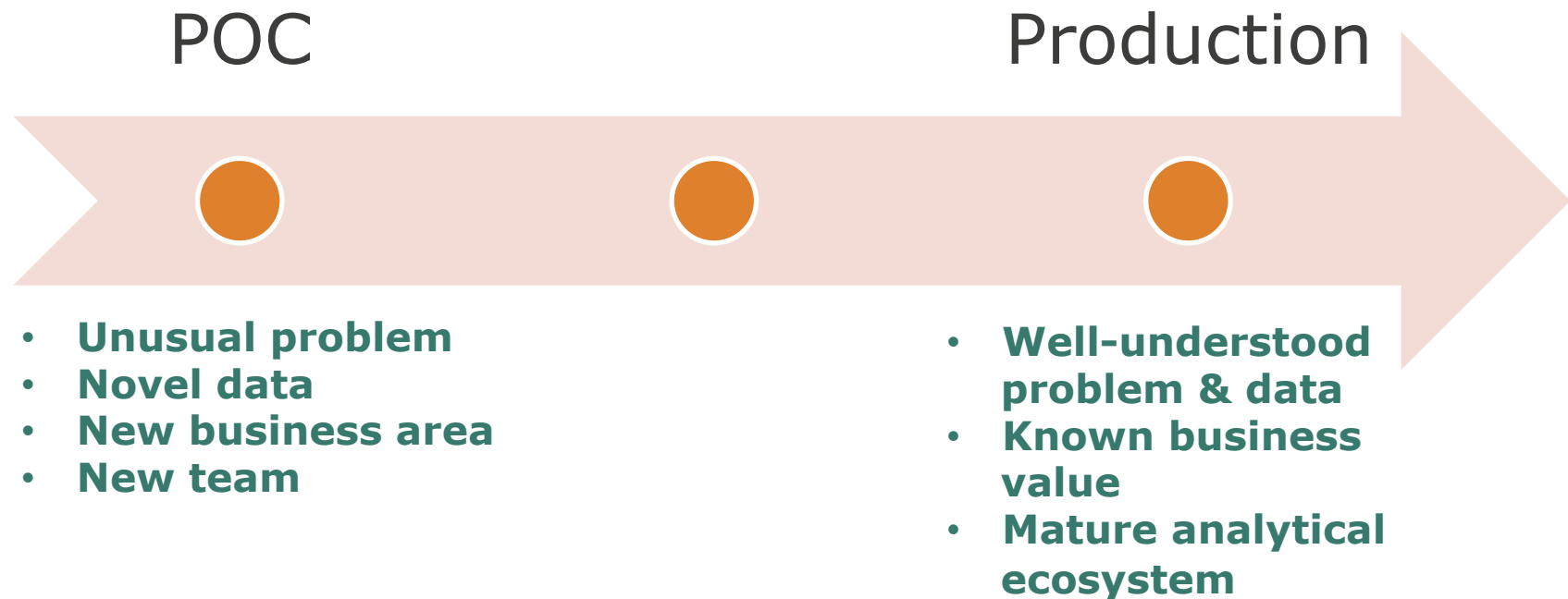- Fail fast doesn't mean there will be no success
- Recognize failure!
  - > Keep going back to the original question
  - > You need to build in measurement and assessment
  - > Document failure and successes within failure
  - > Learn from failure

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CRISP-DM still relevant as a basis of analysis

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When does agile stop being appropriate?

POC

Production

- **Unusual problem**
- **Novel data**
- **New business area**
- **New team**

- **Well-understood problem & data**
- **Known business value**
- **Mature analytical ecosystem**

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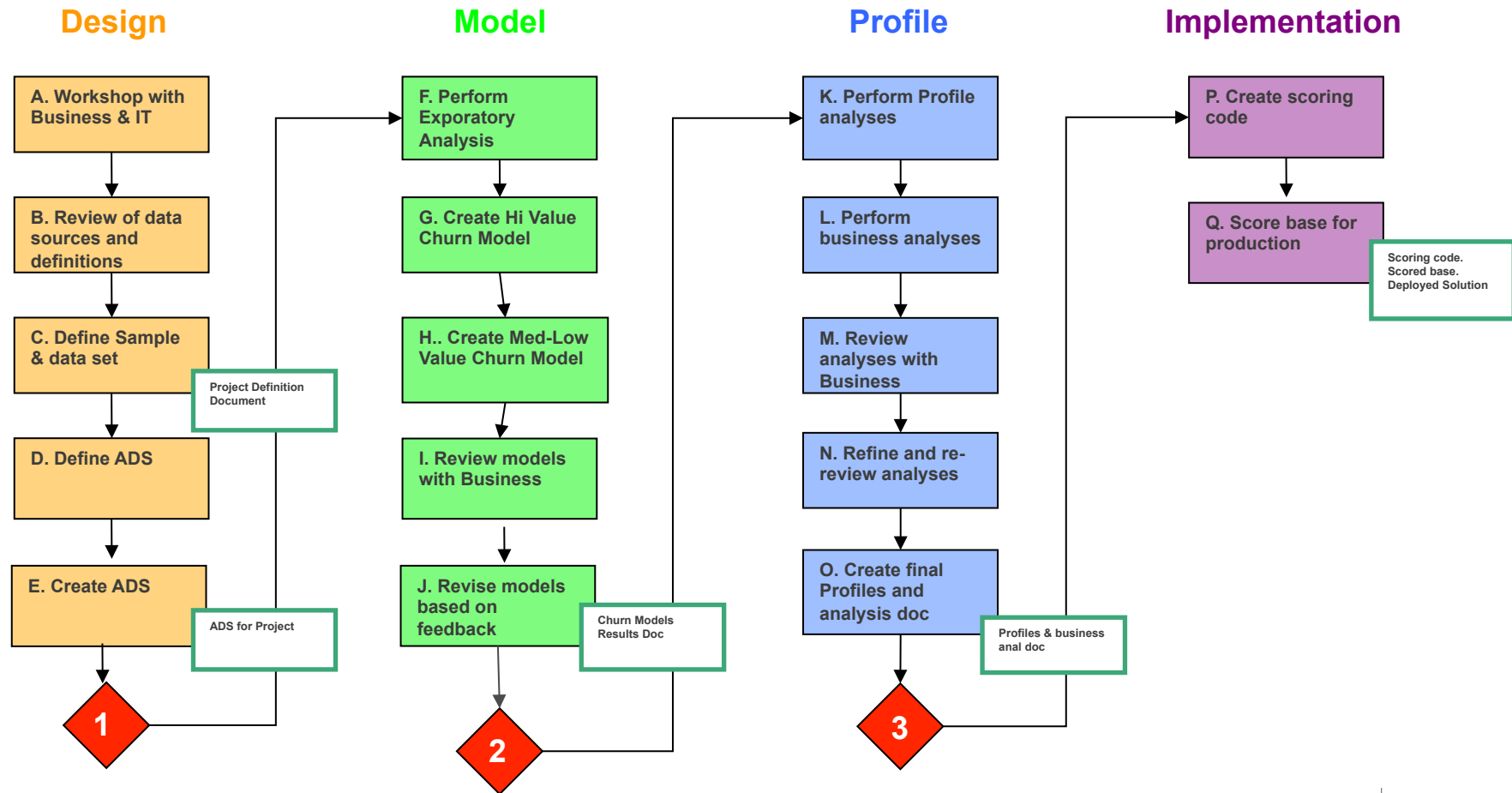**TERADATA.** | THE BEST DECISION POSSIBLE

Agile? An alternative for churn analysis

- This type of project is very routine, so rapid works all the way to production

Design	Model	Profile	Implementation

Design

- A. Workshop with Business & IT
- B. Review of data sources and definitions
- C. Define Sample & data set
- D. Define ADS
- E. Create ADS

Project Definition Document

ADS for Project

1

Model

- F. Perform Exporatory Analysis
- G. Create Hi Value Churn Model
- H.. Create Med-Low Value Churn Model
- I. Review models with Business
- J. Revise models based on feedback

Churn Models Results Doc

2

Profile

- K. Perform Profile analyses
- L. Perform business analyses
- M. Review analyses with Business
- N. Refine and re-review analyses
- O. Create final Profiles and analysis doc

Profiles & business anal doc

3

Implementation

- P. Create scoring code
- Q. Score base for production

Scoring code. Scored base. Deployed Solution

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Same work, different amount of time

	Conventional	Semi-Agile
Design		
Workshop	3	1
Data review	10	2
Define sample & data set	5	2
Define ADS	10	3
Create ADS	25	8
Model		
Perform exploratory analysis	5	5
Create Churn model 1	10	2
Create Churn model 2	10	1
Review models with business	1	1
Revise models based on feedback	5	1
Profile		
Perform profile analysis	5	3
Perform business analyses	5	4
Review analyses with business	1	1
Refine and re-review	3	3
Create final analysis doc	2	2
Implementation		
Create scoring code	5	0.5
Score base for production	2	0.5
	107	**40**

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EXAMPLES

- Manufacturing

- Retail

- Data Philanthropy

- R&D

Case 1: Manufacturing

- Company wanted to accelerate analytical innovation

- Focus on areas where analytics was not embedded

- Process involved
  - > Executive sponsorship
  - > Dedicated analytics days
  - > Data preparation in advance

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Agile Advanced Analytics Governance

Chair: Senior executive

Co-Chair: Senior executive from another branch

Secretary: To ensure actions were actioned

Other members including form partner organisations were included

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Agile Advanced Analytics – scope

- **Purpose and Scope of program**
  - The purpose of the program is to research and explore new data analytics based on existing data in the Data Warehouse. The research should take place before IT development takes place.

- **Key goals of the joint program are:**
  - Try out new analytics on existing data, fail fast as important as quick success
  - Identify business improvement opportunities from data
  - Find a working analytics environment

- **Governance**
  - A joint steering group to meet once/quarter to decide what research projects should be executed the next quarter.

- **Tracks**
  - There are two main tracks to the research in terms of data scope:
  - **Inside-out approach** – Mainly focusing on the data that is collected from products and operations.
  - **Outside-in approach** – By adding external data (e.g. macro-economical data) to the internal data to develop new types of analytics

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Agile Advanced Analytics – scope

- **Initial research areas to study – each with named exec sponsor**
  - Human resource analytics
  - Root Cause Analysis
  - Competitor activities
  - Configuration of product
  - Within tolerance faults

- Each research area needs to create a one-pager. Proposals need to be initiated from the business organization for full support.

- The number of projects that are to be executed needs to be jointly prioritized and they should be limited to maximum 3-4 projects per quarter to keep focus.

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Example proposal

Exec. Leadership	Line Org.	Project Sponsor	Key resources							

Problem Statement (AS-IS) What is the problem / opportunity that is addressed?

Understanding the utilization of the product and the customer satisfaction can reveal factors that drive customer satisfaction of the product and how the customer experience can be improved. It can improve the understanding of current and future product strategy and targeted customer groups in different markets.

Through the use of diagnostic data and customer satisfaction surveys, key customer segment clusters and key product features that drive customer satisfaction can be identified

Business Goal (TO-BE) *Which business benefits are wanted?*

Understanding key product features and product issues that drives customer satisfaction.
Identify customer segments per product segment

Objectives In what way does this fulfil the business goal?

Through improving the analysis of relationship between usage (as described by available data), service and warranty data, customer satisfaction surveys and product configuration, deeper understanding of customers and segments can be understood.

Customers (as identified in customer satisfaction surveys) can be used to represent a larger group with similar usage and configuration.

Who is the customer?
Who is the receiver of the result?

Product/Market Strategy and Planning

Data Need *What kind of data/ information is needed to support analytics?*

Customer Satisfaction Surveys
Product Configuration
Diagnostic Data
Service/Warranty Data

Other information *xxx*

This is a commonly used analysis done in other industries, e.g. telecom

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Agile Advanced Analytics – process

- Day long analysis workshop
  - Attendees include analysts, business, IT

- Executive sponsor present

- Significant data preparation in advance
  - Don't want to get held up with data prep issues

- Conclusions drive to IT projects or further analysis

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Case 2: Customer Segmentation for retailer

Business problem

- Segment customers based on purchasing behaviour over time to better understand customer lifestyles
- Make behavioural segments distinct from value segments

Situation assessment

- Well-known business problem
- Data infrastructure very mature
- Deep understanding of the data, analytics and problem by the team

Agile solution

- Customer behavioural segmentation based on clustering
- Start to production in about 8 days

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Case 3: DataKind
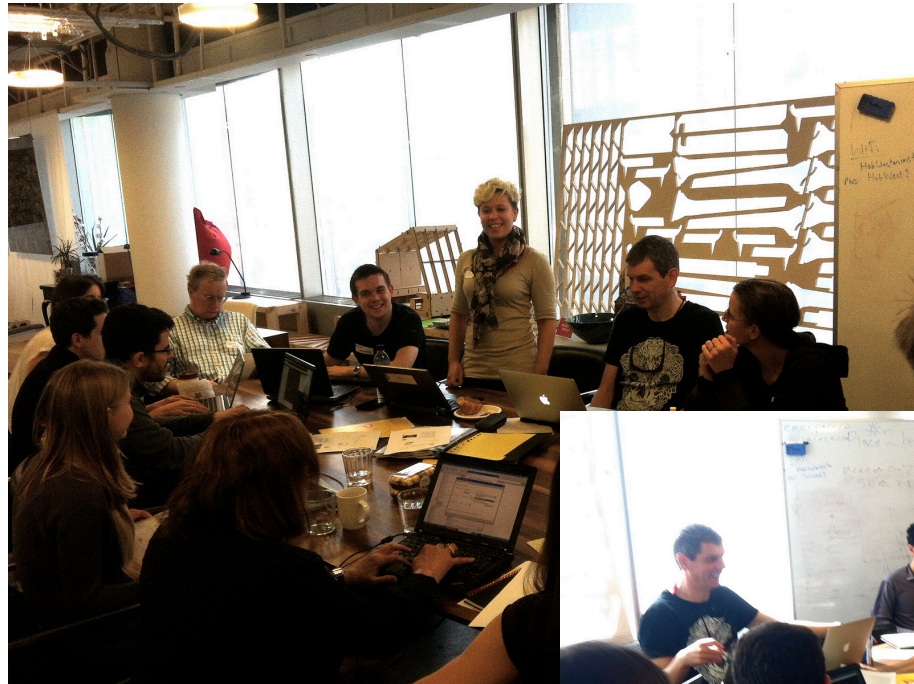
DataKind

- Volunteer analysts support not-for-profits

- Not-for-profits apply for place on DataDive

- Problems (and data) vary significantly

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Before the DataDive

- Not-for-profits submit an application
  - Screened for plausibility

- Data Ambassador linked to not-for-profit
  - Meets/talks to organisation to understand business problem and data availability
  - Possible issues around data identified

- Data for analysis provided to DataKind

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At the DataDive

- Executive sponsor from not-for-profit must attend
  - Ensures buy in
  - Pitches to assembled analysts

- Analysts choose which project to work on

- Data Ambassadors feed back progress during process
  - Final report to not-for-profit

- Links made between volunteers and not-for-profit

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Lessons

- You shouldn't assume a level of knowledge or skill in advance

  - Team working is a fairly unusual approach for analysts
  - Even something as simple as sitting around a single table can help

- Regular feedback is vital for fail fast

- Varied problems enhances creativity!

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The value…

3 Charities

90 Data Scientists

$135,000 market value

- 90 data scientists
- 2 days
- est $750 per day

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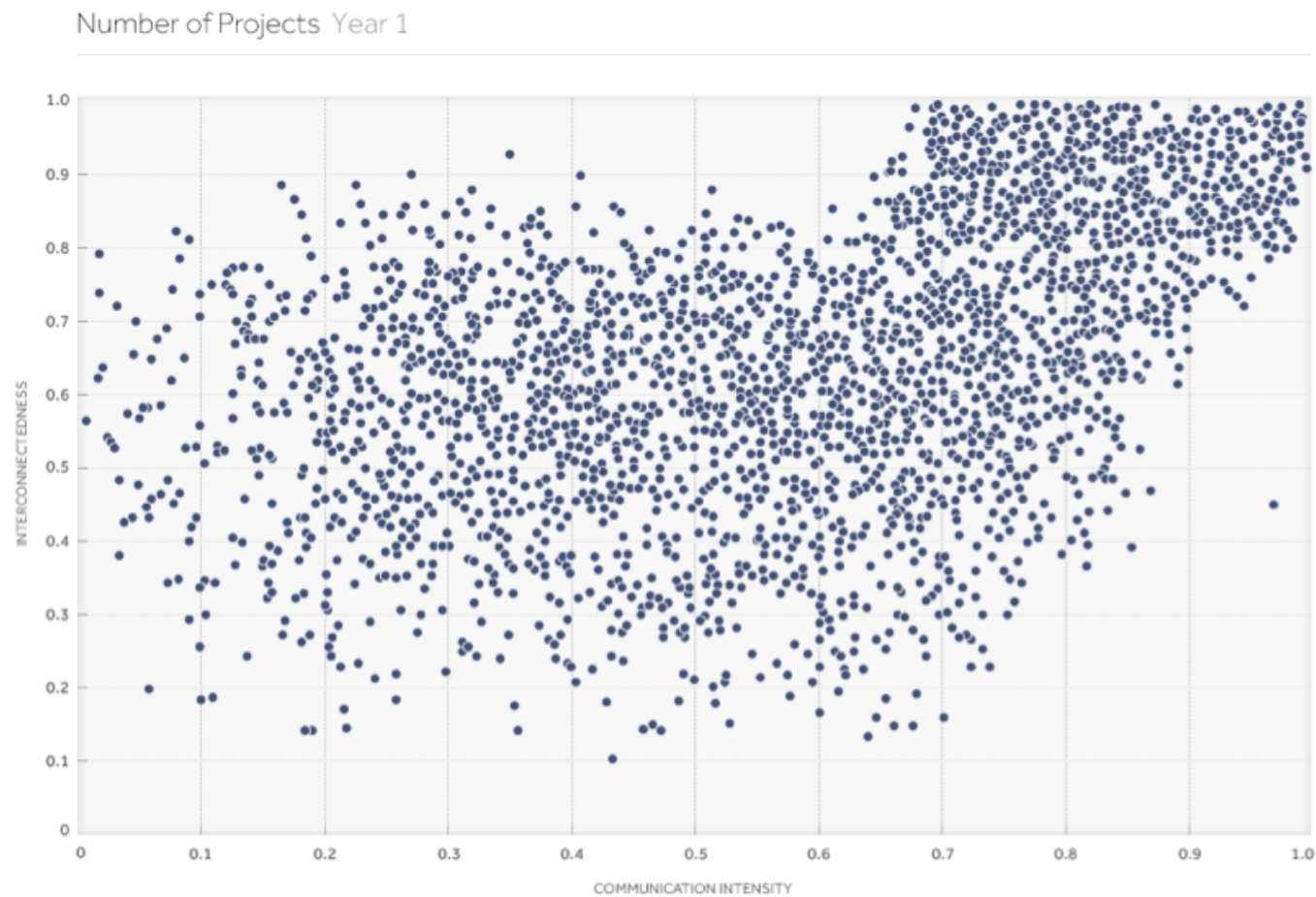
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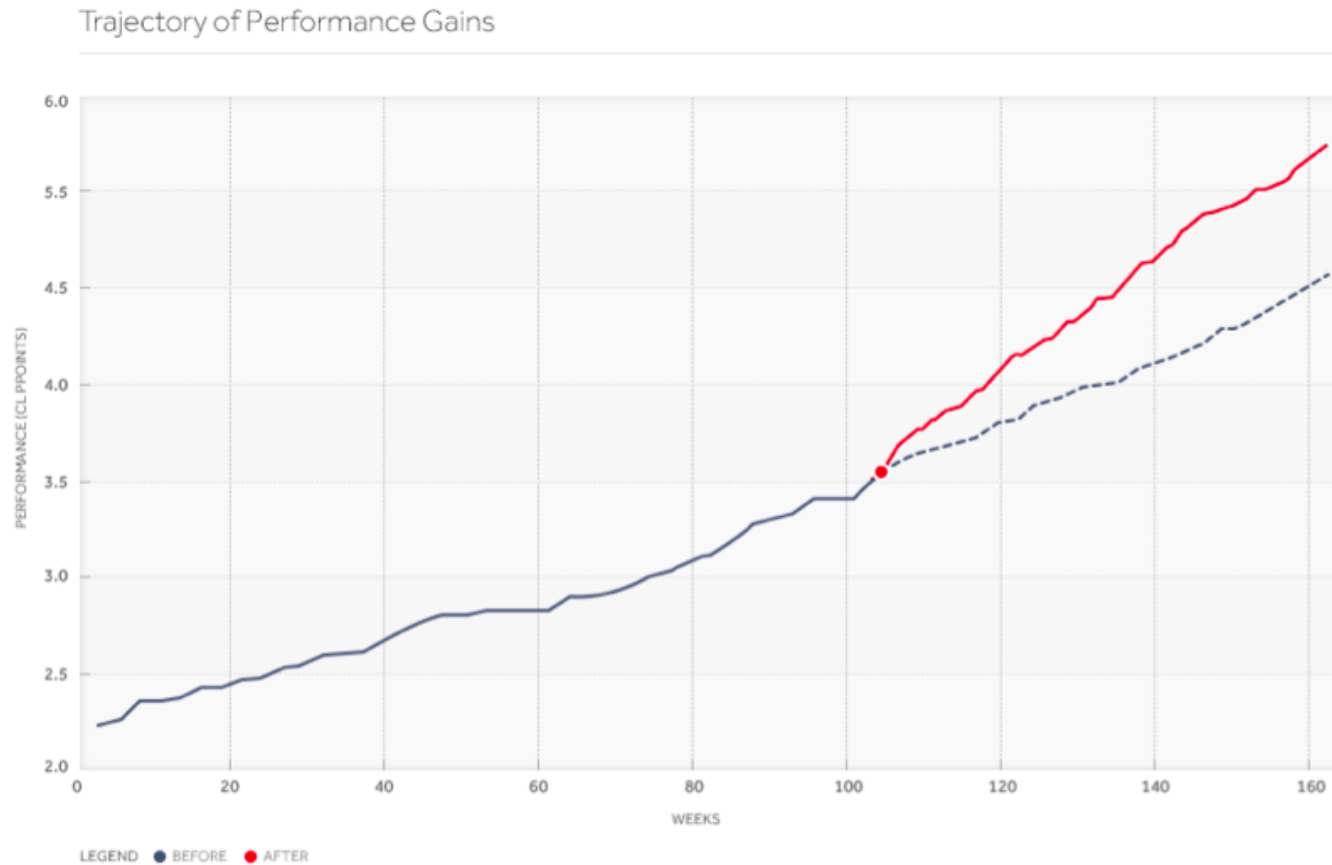
Case 4: innovation in manufacturing R&D

- F1 teams experiment heavily
  - \> 3 000 + experiments per season
- 97% of projects fail (before race day)
- Communication seen as key element of analytics design

- Work done by QuantumBlack

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Analysis of Projects is also key

Number of Projects Year 1

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Improving process improves results

Trajectory of Performance Gains

LEGEND ● BEFORE ● AFTER

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Communication is key

- After research a dynamic communication approach was developed

1. Context
Capturing intelligence, scenarios and insights that shape strategic intent.

2. Options
Flex scenarios to identify optimal path balancing competing factors.

3. Narrative
Clarify intent, map decisions and communicate options with leadership.

4. Adapt
Track assumptions to recalibrate strategy as real world events unfold

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HOW TO GO AGILE: PREREQUISITES

- Management involvement in agile
- Agile/fail fast mindset
- Collaboration / cooperation
- Supporting tools
- Data of sufficient quality
- KPIs that support agile analytics
- Culture that supports overall value from analytics, versus individual project success
- Sufficient Skills within the analyst team
  - Analytical skills
  - Communication skills

HOW TO GO AGILE: SUCCESSFUL AND SUSTAINABLE

- Make project curation a priority
- Make reusability a priority
- Measure, measure, measure
- Look for patterns across analytical projects
  > Discover success and failure
- IF the agile project is a POC, have plan, from the beginning, for going from an agile POC to production

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Advanced Analytics

THANK YOU!

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