Azendian

THE DATA PEOPLE

Analytics Transformation

Organisation Considerations

August 2017

APAC CIOOutlook 50 MOST PROMISING BIG DATA SOLUTION PROVIDERS - 2016

Talking Points

Who Are We

What We Do

Strategies & Considerations

Who Are We

Information Management

Analytics

Organisation Transformation

Revenue & Service Enhancement

Resource & Operations Optimization

Risk Management

Our Clients

Analytics – An Introduction

BUSINESS INSIDER

The Incredible Story Of How Target Exposed A Teen Girl's Pregnancy

GUS LUBIN
FEB. 16, 2012, 10:27 AM

Target broke through to a new level of customer tracking with the help of statistical genius Andrew Pole, according to a New York Times Magazine cover story by Charles Duhigg.

Pole identified 25 products that when purchased together indicate a women is likely pregnant. The value of this information was that Target could send coupons to the pregnant woman at an expensive and habit-forming period of her life.

Plugged into Target's customer tracking technology, Pole's formula was a beast. Once it even exposed a teen girl's pregnancy:

> [A] man walked into a Target outside Minneapolis and demanded to see the manager. He was clutching coupons that had been sent to his daughter, and he was angry, according to an employee who participated in the conversation.
>
> "My daughter got this in the mail!" he said. "She's still in high school, and you're sending her coupons for baby clothes and cribs? Are you trying to encourage her

Analytics – Maturity & Levels

70%	16%	3%
Level 1 **Descriptive Analytics**	**Level 2** **Predictive Analytics**	**Level 3** **Prescriptive Analytics**
What has happened? Hypothesis and **experience** driven You don't know what you do not know	What may or might happen? Hypothesis **neutral** & experience enhanced Uncovers what you do not know	What can or should we do about it to achieve **optimal** outcome? Logic driven & experience enhanced
Report & Visualisation of Insights, Reactive	**Predictive & Forecasting Insights Proactive**	**Optimisation of Insights, Active Management**

Statistical Modelling & Machine Learning

Machine Learning is …

an algorithm that can learn from data without relying on rules-based programming.

a subfield of computer science and artificial intelligence which deals with building systems that can learn from data, instead of explicitly programmed instructions.

Statistical Modelling is …

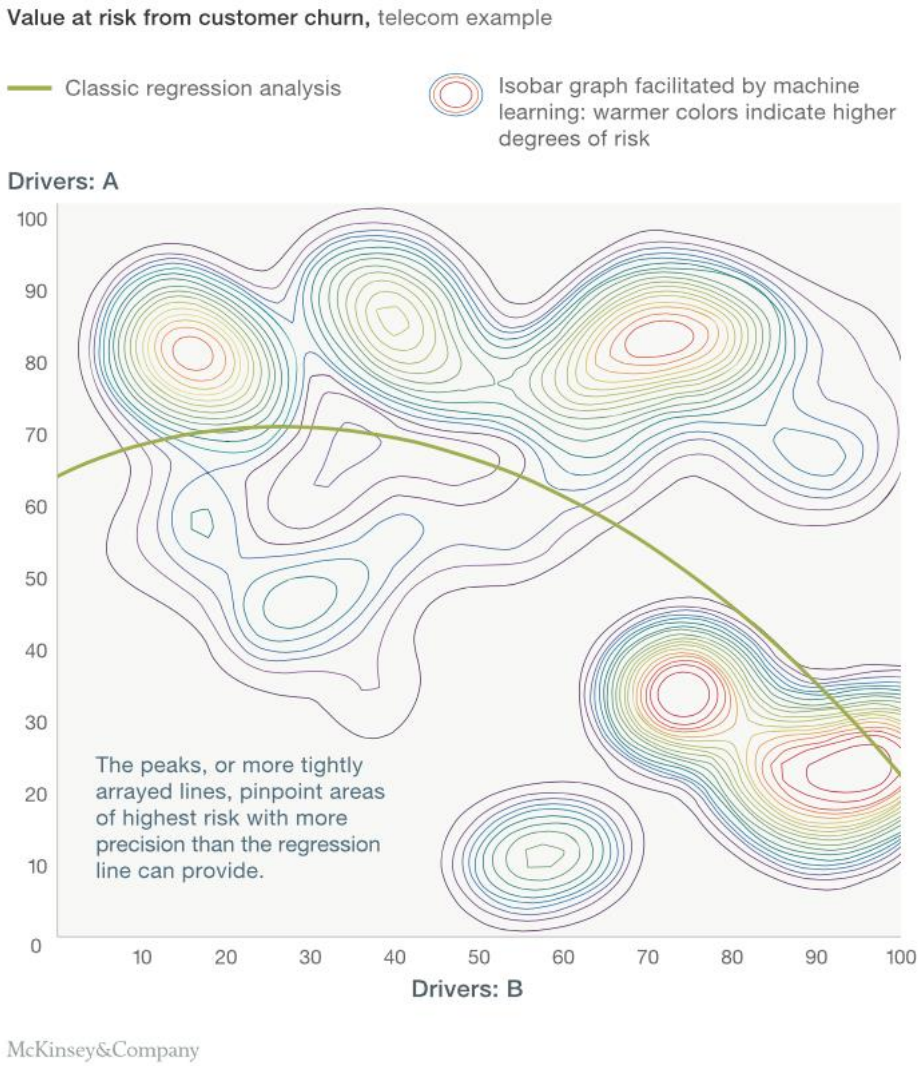
formalization of relationships between variables in the form of mathematical equations.

a subfield of mathematics which deals with finding relationship between variables to predict an outcome

Statistical Modelling & Machine Learning

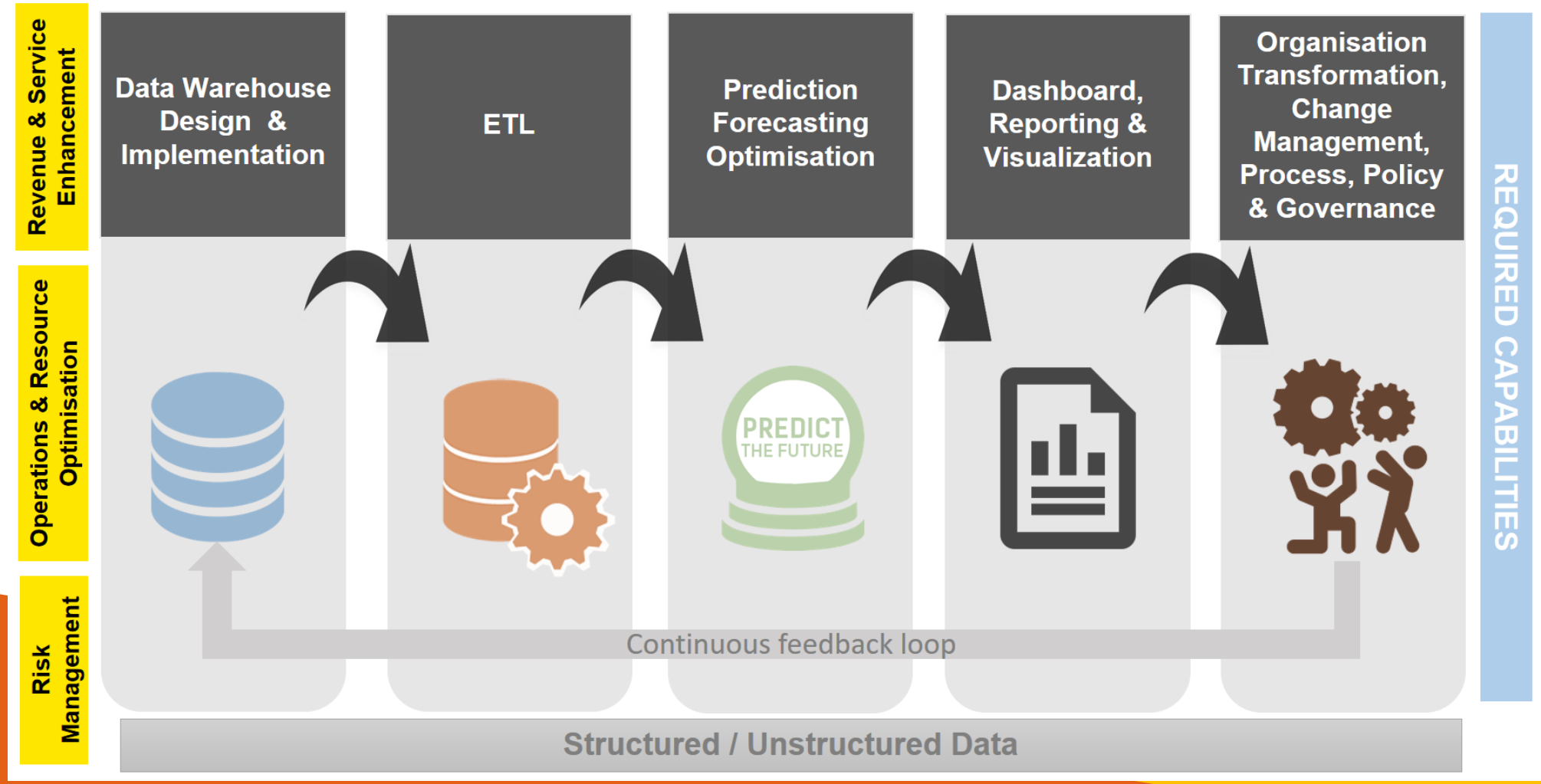
Statistical model is all about getting a simple formulation of a frontier in a classification model problem. Here we see a non linear boundary which to some extent separates risky people from non-risky people.

But when we see the contours generated by Machine Learning algorithm, we witness that statistical modelling is no way comparable for the problem in hand to the Machine Learning algorithm. The contours of machine learning seems to capture all patterns beyond any boundaries of linearity or even continuity of the boundaries. This is what Machine Learning can do for you.

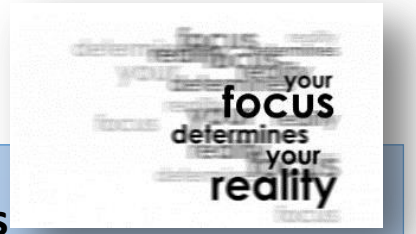


Is Analytics an Exercise in Model Building?

Analytics Value Chain



Analytics – Common Challenges



Focus

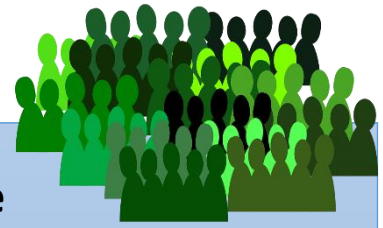
- Tasked with doing Analytics but don't know where to start
- Tactical "knee jerk" analytics
- Let's do what others are doing

Sustainability

- POC galore: Successful POC's that end there (nowhere)
- Creation of a sustainable analytical culture (the mind-set towards it)
- Data governance (not technology)

Technology

- Technology misalignment
- Non end user driven analytics project



People

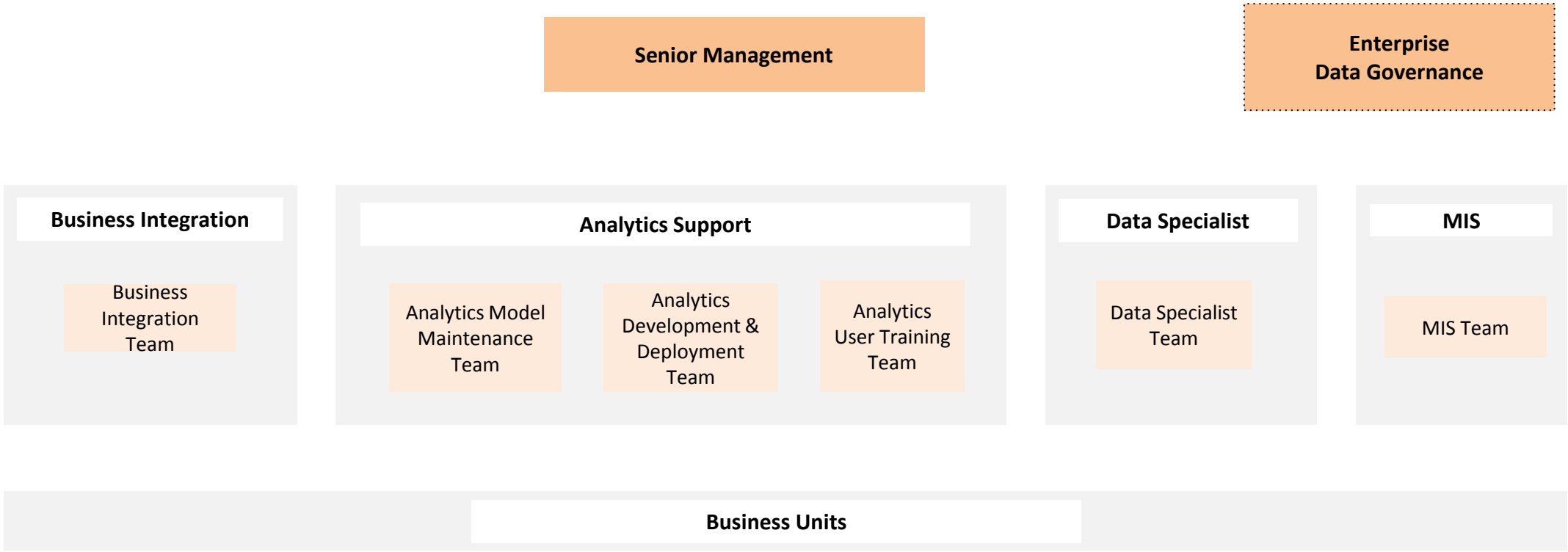
- Developing existing staff skills (and what skills are required)
- Development of 'analytics' team for in-house capabilities
- Retention, Structure, Career Path, etc.

Analytics Maturity Map

Analytic Maturity Domain	Analytic Maturity Stages				
	1. Analytics Nascent	2. Analytics Aspirer	3. Analytics Novice	4. Analytics Enterprise	5. Analytics Visionary
Analytics People	• Gut based decision	• Analytics **awareness** • Use analysis to validate **gut**	• **Tactical** Decision • **Some analytics** skills	• Support **strategic decision** • **Data scientists**	• Drives **strategy** • **Chief analytics or data officer**
Analytics Structure & Process	• None	• **Ad-hoc** departmental **initiatives** • No analytics vision or roadmap • **Dependent on others** for report and analysis • **No use case** priority nor funding	• **Capabilities** & process • **Problem solving** driven • **Limited self service** reporting • Analysis vs reporting • Organisation KPIs • Some **departmental**	• **BACC** & organization structure, definitions & process • Innovation driven • **Business participate** as data stewards & project owners • **Analytics driven** KPIs	• **Mature BACC** & analytics organisation • **Analytics community of practice** • Objective focused & **prevention driven** KPIs
Analytics Technology	• Spreadsheet	• Standard report • Limited adhoc report • **Data store** with few enterprise data	• Adhoc reporting • Dashboards, **limited self service** • More data added & **strengthen data model**	• Visualistion, **self service** • Data exploration • **Predictive & forecasting** capabilities • Data, applications, analytics & skills **specialisations**	• Optimisation • Social media • **Unstructured** data **capability** • **High performance** in DB computing
Analytics Data	• Silo • No data quality	• Spreadsheet marts • Data quality awareness • Limited data governance	• Data mart, modeler • Data dictionary • **Tier 1** data governance	• Integrated data views • **Tier 2** data governance • **Advanced data stewards**	• **Embedded** analytics • **Data** as strategic corporate **assets**
Analytics Impact	• No direct ROI measures • Frustrated line users • IT focus	• Limited ROI measures • Visibility on **past performance** & analysis • Unable to operationalize analytics • **IT focus**	• **Occasional** analytics **benefit** • Unable to operationlise analytics • **IT focus**	• **Proactive** decision management • **Pre-emptive** service & risk management model • **IT enabled**, **innovation** & Organisation transformation **focus**	• Analytics as a **competitive differentiating capabilities** • Transformed organization, innovation, proactive & **possibilities driven**

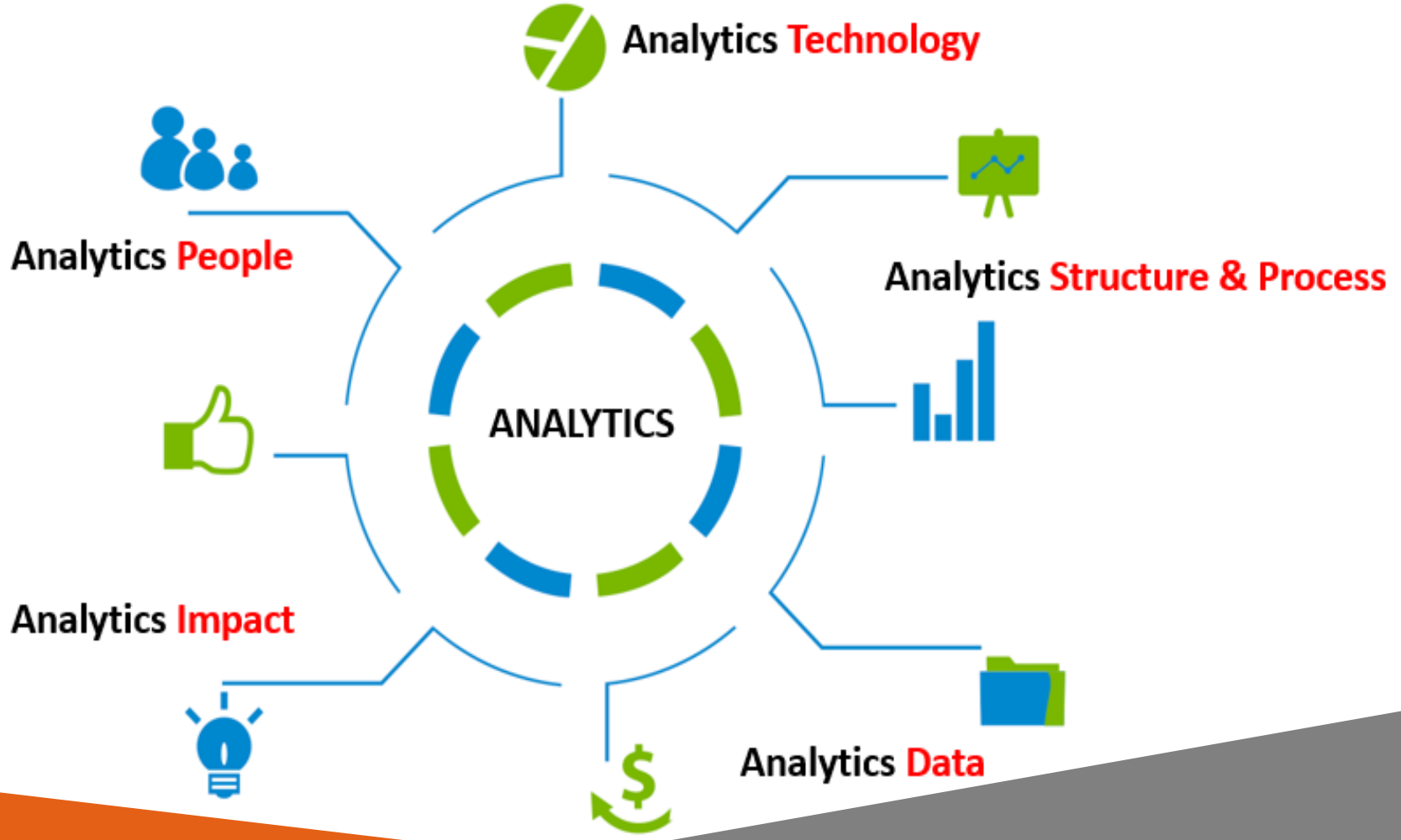
Capabilities Required

Required Roles & Functionalities of an Analytics Organisation



- The above functions are critical for successful analytics adoption
- There is no “one-size-fits-all” organisation structure as each organisation adopts a structure that best suits their existing operations and culture
- The experience and learning gained from the recommended first 6 months will help determine the organisation structure for adoption

Organisation Considerations



bill@azendian.com