Building An Analytical Roadmap: A Real Life Example

Dr Ahmed Khamassi
Chief Data Scientist & Principal Consultant
The Issue

**Environment:**
- Big data analytics is probably going to be remembered as a technological, if not, an industrial revolution
- New technologies are rolling off the assembly line daily
- New terminologies and approaches
- What matters seems to changes quite frequently
- I hear stories from my competitors, am I behind?
- Do I need this stuff?
- How do I know which are the new opportunities these technologies allow me to win?
- Skills are short
- Which skills do we need anyway?
- How do we organise them?
- How do we ensure we are compliant?

**Outcomes**
- Paralysis by analysis
- Many customers do not know where to start?
- They keep revisiting the same issues over and over again
- The delve into technological questions before answering the what and why questions.
- Many organise several ‘vendor’ contests without a clear end insight
- They lack coherent approach that leads to faster results
- They involve either too many or too few stakeholders

*Where do I start and how do I plan for big data analytics?*
Establishing An Analytical Capability

**Principles:**
- Analytics is a business outcome enabler
- It bridges commercial management and IT expertise
- There are four layers to be brought together successfully

**Outcomes**
- Adopt a methodology that ensures focus on business priorities
- Avoid delving into technological questions before answering the what and why questions.
- A coherent approach that leads to faster results
- Involve all stakeholders and experts.
The Situation

- **The Organisation**
  - A Multi-national, multi-brand retail company
  - Some CRM data
  - Some digital data

- **The vision**
  - We would like to catch up with competitors
  - Gather and manager data properly
  - Harness the power of analytics to manage customer lifecycle
  - Our baseline is low

- **The issue**
  - Where do we start?
  - We did several vendor and technology rounds
  - We realise it is not just technology
### Business Layer: Optimize Not Just Measure KPI

**Key Questions:**
- which key performance areas to focus on
- What needs to be optimised for each KPI
- How will business processes change?
- How will new processes be adopted?

#### Example: Customer Lifecycle Management

<table>
<thead>
<tr>
<th>Key CLM performance areas</th>
<th>Optimization Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Drive existing customer revenue growth</td>
<td>▪ Share of wallet maximisation</td>
</tr>
<tr>
<td></td>
<td>▪ Basket size increase</td>
</tr>
<tr>
<td></td>
<td>▪ Cross-sell rate increase</td>
</tr>
<tr>
<td>2 Reduce cost of customer acquisition and retention</td>
<td>▪ Attrition rate reduction</td>
</tr>
<tr>
<td></td>
<td>▪ Lifetime value optimisation</td>
</tr>
<tr>
<td>3 Identify right set of customers to acquire and target channel</td>
<td>▪ Response rates by channel maximisation</td>
</tr>
<tr>
<td></td>
<td>▪ Customer lifetime value shift to top end</td>
</tr>
<tr>
<td>4 Increase loyalty of customers</td>
<td>▪ Increase % of transactions on loyalty card</td>
</tr>
<tr>
<td></td>
<td>▪ Increase purchase frequency</td>
</tr>
</tbody>
</table>
The Analytical Layer: Horizontal Capabilities

To Meet Business Objectives:

- Translate business strategy into big data analytics strategy – answer:
- Which key horizontal capabilities to build?
- How to build them overtime?
- Organisational choices?
- Investments?
- Business case?

Meeting Business Objectives: Develop Horizontal Solutions

- **Customer Value Analytics**: Cross sell-upsell optimisation, loyalty increase, SoW
- **Supply Management**: Supply optimisation, non-performing inventory, demand forecasting
- **Promotion Management**: Promotion modelling, optimisation etc.
- **Pricing**: Competitor analytics, elasticity modelling, dynamic pricing etc.
- **Product Strategy**: Preference and factor analysis, Assortment optimization, quality monitoring
- **Customer Service**: Consistent experience across channel, anticipate and predict needs
The Capabilities Layer: Enable Analytical Strategy

- **Insights**
  - OLAP Reporting
    - Drill-thru
    - Drill-Across
  - Descriptive Modeling
    - Describe historical event
    - Insights in inference and causality
  - Predictive Modeling
    - Modelling targeted to enable decisions
  - Insights/Limited What-if
    - Multi-dimensional querying
    - Basic scenario analysis

- **Foresights**
  - Standard Reporting
    - Comp Sales
    - Sell-thru
  - What happened?

- **Optimize**
  - What best can we do?
  - Optimization
    - Prescription of best choice amongst a complex web of options
  - What will happen?

- **Basic Data**
  - Raw Data
    - Product, Sales, Inventory, Customer
  - Decision Support
  - Decision Guidance
Technology Layer: Limiting Options

To enable utilisation of analytical capabilities:

- How to provide and manage the data?
- How to enable data science and analytical experts?
- How to democratise analytics with end users?
- How to reduce time to value and integrate with business applications?

Data Management
- Data collection & creation
- Data integration, mashing
- Information management
- Scaling
- Physical storage & cloud options

Visualisation
- Executive dashboards
- Granular drill down
- Real time transactional
- Train of thought
- Sharing & collaboration

Data Science
- From simplest to most sophisticated
- In-house vs. service
- Scale, variety & complexity
- Time to market
- Knowledge capture

Integration
- From concept to production
- Enabling business processes and downstream business applications
- Collecting feedback
- Time to market
- Operating models & governance
## Establishing An Analytics Roadmap

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Main Owner</th>
<th>Roadmap Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3. Capability: Data Science Execution</strong>&lt;br&gt;1. Explore, transform and generate data&lt;br&gt;2. Translate business knowledge into signals&lt;br&gt;3. Model, deploy, monitor, disseminate etc.&lt;br&gt;4. Provide insights to business</td>
<td>Data Science Manager</td>
<td><strong>3. Building Capabilities</strong>&lt;br&gt;1. In-house vs. partnership split&lt;br&gt;2. Resourcing &amp; technical requirements</td>
</tr>
</tbody>
</table>
Suggest Organisation Structure
Analytical Roadmap: A project Plan

**Business Stage**

- **Tasks:**
  - Understand business strategies and objectives
  - Business process & maturity assessments
  - Identify main priorities & pain points
  - Shortlist areas of focus and estimated returns

- **Output**
  - A shortlist of possible initiatives with clear boundaries and objectives

- **Owners**
  - Analytical Business Partners
  - Business Owners

**Analytical Stage**

- **Tasks:**
  - Translate objectives into analytical requirements
  - Create high level solution design
  - Draw horizontal capability strategy
  - Estimate investments & returns – Business cases
  - Finalise shortlist

- **Output**
  - Final focused shortlist

- **Owners**
  - Analytical Business Partners
  - IT owners

**Capability Stage**

- **Tasks:**
  - Draw detailed execution roadmap
  - Build skills & expertise strategy
  - Determine technical & scientific tools
  - Data readiness analysis

- **Output**
  - Technological requirements
  - Skills strategy including service procurement
  - Implementation roadmap
  - Data science operating model

- **Owners**
  - Analytical Business Partners
  - IT owners
  - Data science manager

**Technological Stage**

- **Tasks:**
  - Conduct technology maturity assessment
  - Carry out technology gap analysis
  - Write technology requirements
  - Agree vendor strategy
  - Agree cloud Strategy
  - Fix technology evolution roadmap

- **Output**
  - Technology strategy & timelines
  - Investment business case
  - Vendor recommendation

- **Owners**
  - IT Owners
  - Analytical Business Partners
  - Data Science Manager
Final Outcome: A Comprehensive Plan

1. A roadmap for the analytical components based on business prioritisation and synergies

2. A multidimensional sequential project plan where each phase details new implementations of:
   a. Platform and technologies
   b. Data & governance
   c. Skills & Capabilities
   d. Business outcomes
Thank You

Dr Ahmed Khamassi
Chief Data Scientist & Principal Consultant
Ahmed.khamassi@wipro.com