ANALYTICS: A HYBRID APPROACH

Solving business problems with a blend of products and services
Analytics Evolution

Information  >  Insight  >  Impact

Technology disruption in computing power and cost of digital data storage over the past few decades opened endless possibilities for leveraging Analytics in driving business decisions.

Analytics, at its early stage was mainly used for getting a periodic view about business performance with the most critical data elements. It was used to transform and visualize data in to meaningful business metrics. A number of reporting systems that tracks key metrics such as revenue, sales- by geography, business function etc. were used. It was the era of Information.

Analytics then evolved beyond post-mortem analysis. This era involved identifying the underlying patterns, understanding behavior and predicting outcomes. Companies started using analytics at functional levels for solving specific problems. We also witnessed an increased adoption of analytics across different industries because of measurable returns. This was an era of Insight.

Today, analytics is all about embedding intelligence into business processes for taking business decisions involving a larger ecosystem. Analytics here is sometimes invisible, pervasive and is capable of providing real-time personalized recommendations at the point of decision making. The idea here is to operationalize data driven decisions for a sustainable business value. This is an era of Impact.

The digital companies of the B2C world (Google, Amazon, LinkedIn, EBay, Flipkart, Ola, Uber) were the first who embraced analytics into business process, as their success depend upon differentiation through personalization. Storing and making data available is less a challenge now and hence a larger group is eager to adopt but would look cautiously for RoI. Let us look at some outstanding analytics impact stories in the making.

Analytics for Store Optimization

Mc Donald’s has a centralized analytics team that analyzes transactional, video data collected across 35000 plus stores to advise store owners regarding customer demand, arrival pattern, in-store and drive through configurations, product mix, staffing, layout, menu etc. After all they serve about 1% of the world population, every day!

Analytics for Route Optimization

Google recently filed a patent that can identify pot holes in the road using the GPS sensors located at cars. This information will provide users with information that will allow them to choose the best route for a smooth ride to the destination.

Analytics for Marketing Efficiency

Adidas is among the first few companies that leveraged GPS based location tracking feature to push advertisements to the users nearby which translated in to more foot falls.

All these examples stated above have one thing in common. The analytics
infrastructure has a system that is well integrated with the business process and interacts with the stakeholders to provide actionable recommendations at the point of decision making. Analytics does not stop at just providing numbers or patterns, but enable operational decisions.

Before dwelling any further, it is important to note the some of the common mistakes that organizations make before even they get ROI for such programs.

Why Does an Analytics Project Fail?

In the digital era wherein quintillion bytes of data are generated every single day, analytics solutions are helping enterprises not only stay afloat in the data deluge but also turn this data into a gold mine it truly is.

When it comes to big data, analytics helps bridge the gap between information and impact through actionable insights. The rise in technological awareness led to the widespread adoption of analytics solutions; organizations began to leverage insights from analytics for applications as we have mentioned like store optimization, improving marketing decisions, route optimization, etc.

Most organizations have a singular approach towards the implementation of analytics. However, many enterprises often fail in their attempts to improve their ROI with the help of analytics. Some of the reasons for the same are listed as follows.

1. **Unclear Objectives**

Companies trying to derive some patterns out of huge volumes of data without a clarity of objective or how to use it. An analytics project will only be as good as the objective you define.

2. **Waiting for perfect data**

More often than not, companies wait for getting all the data inputs before kick starting the project. There is no such thing called a perfect data. In real world scenario we need to deal with missing values and attributes. It is a good idea to start a project as long as you have the core data that helps you with key answers and allows you to be directionally right. Success would let you invest and iron out other elements.

3. **Not executing projects in phases**

Many Analytics projects that require massive changes to organizational structure, business processes, IT infrastructure go for rounds because of the complexities of change management. There will also be many challenges in integrating data across discrete sources. Such projects need to be handled with a well thought through prototype which gives a better visibility to the complexities and implementation constraints. Successful prototype completion and dividing the project into workable phases that users get accustomed to being worked half-done!

4. **Analytics? – Oh the Black-Box!!**

Analytics projects which reaped success on paper may not get good adoption rate because of the “blackbox” nature of such projects that delivered insights. The client may not be fully confident in acting on insights as the client does not get clear visibility to the basis on which such insights /
recommendations were made. Poor adoption rate might be because of poor change management process and static organizational culture

**The Choice of Solution is Not Always Binary**

In current technology savvy world, many companies are still approaching analytics implementation either in the product form or in the pure services form. Understand the world of products and services and then take a call on the way forward for analytics implementation!

**World of Products**

A school of thought that says some analytics problems could be solved with the help of IT softwares and products solely.

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<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td>- Faster deployment at a cheaper price</td>
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<td>- Access User Community</td>
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<td>- Trial Usage for a limited period of time</td>
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<td>- Easy upgrades at lower cost</td>
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<td>- The inherent differences in business processes between companies makes it difficult to integrate needing long customization.</td>
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<tr>
<td>- Sometimes too specific, niche and small in the scheme of big picture</td>
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<tr>
<td>- Sometime regarded as black box and generic</td>
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By design, an off the shelf product can satisfy only a few basic needs that are consistent across many businesses. The effectiveness, acceptability and ease of usage of the product gets questionable if the product tries to be everything for everyone! Remember Google wave? The Failure of the Google wave is one such example. In retrospect, among other things, the failure was attributed to its complicated user interface resulting in a product that was a bit like email, a bit like an instant messenger and a bit like a wiki but ultimately couldn't do any of the things really better than the existing solutions.

**World of Services**

A school of thought that says custom built services are the perfect solution for solving business problems.

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<th>Advantages</th>
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<tr>
<td>- Granular accurate recommendations that completely fulfills the needs of your business</td>
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<td>- Measurable impact</td>
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<td>- Can support future needs of the business easily</td>
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<td>- High cost of designing the solution</td>
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<td>- Longer implementation time</td>
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<td>- The cost of incremental services to meet business needs are equally high</td>
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<td>- Apprehension to invest as the final outcome is not clear</td>
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Let Us Solve the Puzzle!

Modern day business need a solution with the following characteristics for solving their business problem

1. **Quality of Insights**
   On demand, real time, Granular, Actionable, Insights with predictive and prescriptive Analytics

2. **Implementation Time**
   Short, Without too much disturbance to the current process

3. **Cost**
   Somewhere between licensing cost for off-the-shelf product and one time Analytics services implementation

4. **ROI**
   Faster ROI, Measurable Impact, Sustainable Advantage

Neither pure off the shelf productized solution, nor pure service offerings can in isolation cater to the above needs. This creates a need for hybrid offering

**Hybrid Analytics Solution**

*What is it?*

A business solution whose core analytics algorithms and frameworks are readily available and are flexible for customization to suit business needs

**Benefits**

- Reduction in implementation time
- Flexible customization that can incorporate Industry and Business needs
- Accurate granular recommendations that are accessible
- Easy to adopt without making much changes in the core platform
- Affordable cost (Sandwiched between Pure Products and Pure services)
- Future ready
- Strong customer support

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**Let us now understand the key ingredients of a hybrid solution.**

**Easy-to-integrate Presentation Layer**

- **User Interface for real time, easy to consume insights**

**Consumption Layer**

- **Actionable Dashboards**
- **Data Augmentation** (Multiple data sources - Internal)

**Customizable Algorithms**

- **Business Scenarios**
- **Business Rules**
- **Hybrid Algorithms**

**Reusable Frameworks**

- **Data Management** (Integrate, Clean, Create Attributes, Transform)

**Hardware, Software Architecture**
BRIDGEi2i Forecasting Engine

Forecasting Engine is a cloud-enabled one-stop forecasting platform that automatically identifies the models best suited for a series of data and generates accurate forecasts. Application has proprietary algorithms for choosing best models, enabling “what if” simulation and back testing models. The application uses advanced forecasting models along with more traditional models.

Client Use Cases

1. Commodity price forecasts for a Hi-Tech company
2. Fraud loss forecasting for a financial services major
3. Demand Forecasting for a niche manufacturing company
4. Sales pipeline forecasting for a Hi-Tech company

The use cases stated here have commonalities in terms of methods and algorithms to choose the best methods. However, the key differentiating factor in each of these use cases is a business rule engine and data management and pre-processing that optimizes forecasts to provide higher forecasting accuracy for a longer period of time. On similar lines, BRIDGEi2i is focusing on building such platforms what we call as “Technology Accelerators”. We have developed platforms around:

- Model risk governance - for financial services.
- SKU recommendation engine - for sales reps.
- Customer experience tracking as well as lead management - for marketing and sales functions

Here is the Cheat-sheet!!

Let me leave you with one quick cheat sheet that can help you zero down on the white space for identifying and designing hybrid solutions.

CHEAT SHEET – 101

1. Can analytics bring sustainable advantage to the business?
2. Is the analytics solution easy to adopt without making much change to the existing processes?
3. Does the solution have core components that covers the critical intelligence part of the solution?
4. Does the architecture allow customization based on business solutions?
5. Is it future ready? Can the solution be embedded at the point of decision making?
6. Is the Solution affordable? (Is there a scope for volume game?)
Embedded Analytics for Decision Making

We are at a juncture where the hardware maturity can support the aspirations of algorithms and frameworks. With companies such as Google open sourcing their machine learning systems, it is certainly the right time to start thinking about embedding analytics in business processes for decision making. “Productization of Analytics” is the Holy Grail that will help us reach the last mile!

“Not everything that can be counted counts, and not everything that counts can be counted.

-Albert Einstein

About BRIDGEi2i

BRIDGEi2i is an analytics solutions company partnering with businesses globally, helping them achieve accelerated outcome harnessing the power of data. BRIDGEi2i helps companies to BRIDGE the gap between INFORMATION, INSIGHT and IMPACT in their journey to institutionalize data driven decisions across the enterprise.
About Author

Pritam is responsible for product research and development as well as solution design and architecture for BRIDGEi2i. He is one of the co-founders of BRIDGEi2i.

Pritam has over 15 years of analytics consulting experience in target marketing, pricing, credit risk, audit analytics, fraud detection, forecasting, spend analytics and market research. Prior to BRIDGEi2i, Pritam served HP as the Director of marketing, customer and e-commerce analytics and led teams focused on risk and financial analytics at GE.

Pritam won several awards for innovation from designing the pricing and discount strategy for GE Plastics using game theory, to defining the capital allocation strategy for Genworth (GE Insurance) using a net income optimization framework hailed by Wall Street analysts and other company-level innovation awards at both GE and at HP. He is passionate about building innovative solutions for customers.

Pritam is a Gold Medalist from the Indian Statistical Institute Calcutta, where he completed his Masters in Statistics with specialization in Mathematical Statistics and Probability.

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