The Last Mile of Analytics

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Remember the cat in Alice in Wonderland?

"Would you tell me, please, which way I ought to go from here?" asked Alice.
"That depends a good deal on where you want to get to," said the Cat.
"I don’t much care where--" said Alice.
"Then it doesn’t matter which way you go," said the Cat.
"--so long as I get SOMEWHERE," Alice added as an explanation.
"Oh, you’re sure to do that," said the Cat, “if you only walk long enough."

The dizzying level of change around us might at times make us feel like Alice, in a very different wonderland. One where the jungle becomes forests of data, the mythical creatures become the myriad tools and techniques that people are selling and using for solving business problems using big data analytics. And we feel lost in the maze, not knowing where we are headed.

Why read this report?

Well, the last thing you would probably want to read right now is another report extolling the virtues of Analytics, citing all the buzzwords that seem to be floating in the Analytics cloud and telling you if you are not using this, you are doomed.

Let’s start instead with getting past the conversation about the need for analytics. The fact is, despite the need, many Analytics projects fail to live up to the promise of helping achieve desired business outcomes. How do enterprises focus on value generation rather than just being a part of the data bandwagon? How do business leaders actually use analytics to traverse the last mile and make better business decisions? Is it about technology implementation, capability creation or just pure outsourcing? Is Analytics just a point solution or a point of view? These questions could be viewed as the elephant in the room; the ones that need to be answered before setting out on the journey of analytics adoption. That’s what this paper seeks to answer.

Key Takeaways:

- Succeeding in Analytics and getting to the Last Mile of embedding Analytics in decision-making is not just about dealing with data. The journey from Data to Decisions requires one to look at how Analytics is operationalized in the business. And the missing piece that actually can drive or enable Analytics is not data but Culture. Can culture be enabled by Analytics?

- To make Analytics actually a part of the Company culture, it’s not enough to have a set of people providing Analytics solutions. Analytics needs to be embedded in technology accelerators that can directly enable decisions at the point of action.

- Making Analytics work across the business requires collaboration and the right choice of an Engagement Model which would vary based on the maturity of the organization and its decision-making, not its data needs.
As always, it starts with the need for bringing data into the decision making process and dealing with the data deluge that is flooding today's world.

Data is no longer restricted to industry reports, CRM systems, social and digital systems. Data is now residing in wearables, in machines, in comments made by customers and employees across channels. We all know that.

Our fundamental assumption - Why are companies using data? To take better decisions

To be able to compete on analytics, companies are accessing or at least trying to make sense of more data. The issue is not the data. There is too much of it already. The issue lies in connecting the dots between the points of data and being able to make the different systems talk to each other. Data is required to not just paint a picture of the past but to monitor, optimize and forecast the future. Analyst reports from Gartner and Forrester, thought papers from Thomas Davenport and HBR articles talk about the stages of Analytical maturity and data needs across the lifecycle. Data adoption and data consumption are two sides of the data coin that when flipped wrong, lead to failed implementation of analytics projects.

Are there certain ways in which Analytics can enable and really impact decision making, drive conversations and debate around data? For unless that’s done, there never really will be a Last Mile in the sight. So what are those key differentiating characteristics that can enable the Last Mile of Analytics?

Let’s look at the framework in Figure 1.

The data owners such as Bloomberg own the data and have traditionally been just providing data services. But over the years, some of them have been selling data as a service, or as a product to monetize data directly. On the other side, there are increasing number of platforms or tools that are solving specific problems like Marketing Automation or Lead Scoring or Risk Monitoring. These are companies that are competing on data.

Data itself cannot lead to business impact without the domain context. And using the domain context, traditional Consulting companies are also providing Analytics advisory solutions right now. And then there are niche solution focused companies who provide the required Analytics Solutions for specific functions or industries.

Current hype cycles and wave reports by Analyst firms track the Analytics companies across these classifications exhaustively. But most of these studies look at each set of companies in isolation. BI and Analytics vendors, Software Solutions, Managed Solutions etc.

When looked at from a business user point of view, what matters is how the right combination of analytics adoption and consumption can enable decision making.

We believe the answer lies in the two connecting threads: Technology Accelerators and Engagement Model.
Technology and visualization are changing the way Analytics is being offered today. The pure services model is now being challenged by products and platforms that can be embedded into devices, by visualization platforms that are meant for end business users and by customizable decision engines that can be deployed for businesses. Will the old way of doing survey analysis reports survive or will businesses need a digitized and automated multi-channel survey analysis platform?

Can companies afford to analyse their top competition and churn out PowerPoint reports or is there need for real time monitoring of the key strategic and competitive themes?

- How much will technology automate the components of decision making process?
- Is technology a subset of analytics methodology or is it core?
- How should technology be used effectively in analytics?

These are questions the businesses will have today.

Business Intelligence and Analytics has lived by the Gartner Analytics Capabilities framework which classified analytics as Descriptive, Diagnostic, Predictive and Prescriptive. Organizations and Vendors alike, have lived by this framework until recently. In January this year, Thomas Davenport, global thought leader in analytics came up with his version of the next evolution in analytics – Automated Analytics.

The implications and impact from automated analytics, a self-explanatory term, are immense and organizations will leverage its power in the coming future. But a fundamental question that arises here – Has Business Analytics truly mastered leveraging the power of the Descriptive to Prescriptive Analytics journey?

The answer here is either an emphatic 'No' or at best, a confused 'Maybe'. What is it then that is holding us back in our quest for mastery over the current Analytics Capabilities universe? To answer this question, we need to look at the repeatedly snubbed dimension of any analytics solution – Technology.

Cloud is almost as popular a buzzword today as Big Data is. Big Data – made up of large amounts of structured & unstructured data, scattered across different devices, locations at multiple levels of granularity. It is perhaps almost impossible to imagine Big Data's existence without Cloud. But it's not just data access that Cloud has helped provide. It has also helped SMBs and smaller organizations to not only access data but analyze the data into actionable insights to help them make strategic business decisions.

Let's look at another popular buzzword – Hadoop. IDC predicts a growth of 60% (CAGR) in hadoop-MapReduce technologies. Hadoop and its cost-effective capability to manage and analyze tons of data – social, structured, unstructured is positioned to help us see through today's data deluge. Why then are companies sceptical when adopting Hadoop? For all its virtues, Hadoop is still confronted with problems like single point failure, talent scarcity, immature security framework, etc. This demonstrates that although we now have multitudes of data we still are not able to leverage it completely.

The role of Technology in the Analytics universe spans across the entire Analytics Capabilities framework and spills over to the new kid on the block – Automated Analytics. The technology equivalent of the Gartner framework would have three dimensions.

Only when we leverage the right technology at the right stage will we truly leverage the power of analytics for decision making. Technology is one of the biggest hindrances to analytics evolving from incremental to strategic (or revolutionary). The interdependencies among descriptive, diagnostic, predictive, prescriptive and now, automated analytics technologies have to be effectively managed for us to truly successfully advance to automated analytics decision making. Let us take a look at each of them individually.
The technology to capture data forms the fundamental basis of any data management and analytics exercise. In today's customer-centric world, it is indispensable that businesses exist and operate as close to the customer as possible. This, in spite of increasing the amount and dimensions of data we can capture, makes it all the more important to have the right technology to do it.

Data capture is just one piece of the puzzle. Stitching together data from different sources, existing at different levels, is the biggest gap in the analytics industry effort to marry technology.

Example

A leading Technology company was facing a primary road-block towards shifting to data-driven decision making. They had a host of disparate data sources sitting across location and business divisions. The data ranged from account information, marketing operations, campaigns, lead management, etc. To truly leverage the power of this data, they needed to find a unique identifier of bringing all data to a common level (e.g., account level). The technology and platforms used for all these data sources were different and did not talk to each other.

The company attempted unifying the data across all these sources but failed. This not only led to failure of the project but discouraged the company to invest into the right technology to enable analytics and data-driven decision making.

It is clear from this example that without the right technology, data itself can't be made sense of. Generating insights is even more far-fetched. This also proves the point that Analytics is not a one-shot solution, it has to be planned and executed, just the way the organization would plan its strategy or its operations.

After we have captured and stitched the data appropriately, it still is useless to us if we can represent it in a form that is actionable. At the same time, the data may require further aggregation, segmentation, extrapolation, iterative analyses, etc. which again requires application of technologies like veterans SAS, R and relative newcomers (in data analysis) like Python or Java. Coming back to data representation, visualization and reporting technologies will have to evolve along with data analysis and processing technologies, to play an even important role in making insights as actionable as possible.

With data-driven decision making and analytics taking centre-stage, organizations are looking and growing amounts of data day by day. In the process of making sure organizations have considered all the information available, teams get drowned in the data and the primary objective of ACTIONABLE business insights take a back-seat. As the amount of data available increases, it becomes even more important to have something that helps us make sense of it. This is where technology, again, comes as a saviour.

Example

A large software company in the US was looking at its web data and wished to know consumer behaviour online and across all digital platforms. Initially, they did not know what to do with the large amounts of data at their disposal. But with the new Visualization technologies, they could represent the patterns and trends in the data visually in a very intuitive, easy to understand manner. This in turn also helped the client to derive actionable insights given the interactive nature of these technologies. That might be sufficient for today. Will that pass muster when the metrics change or when the behaviour shifts? It undermines the need to not just depend on a platform or a tool but to keep refining the insights with the right domain insights.
The biggest hurdle, perhaps, that analytics faces today is integration into business operating processes. Whatever integration and application that exists today is still ad-hoc and backward looking. Operationalizing insights from advanced analytics into regular decision making processes will help measure and optimize RoI on analytics investments manifold. Such integration technologies will help analytics move beyond the Descriptive to Prescriptive framework towards automated analytics. A key trend that is being observed in operationalizing analytics is the rise of mobile Business Intelligence that is generating not just mobile enabled dashboards but decision engines for prescriptive analytics.

Example

CPG salespersons have been using hand-held devices to record supplies made and to take orders from retailers and wholesalers. The idea of a recommender system has been popular in e-commerce but has never really taken off in the CPG space.

A CPG company wanted to build a recommender system for salespersons to understand the demand and supply for every retailer to be able to sell the right quantity of products. Such a recommender system would be practically useless if it was backward-looking. But to make insights from such a recommender system actionable, it was important to integrate these insights into the salesperson’s selling process. This is where the company integrated the recommendations into the salesperson’s handheld device to empower him with an SKU level recommendation engine which talked from both the demand side and the supply (his sales quota) side.

This is an illustrative example of how we can marry insights from analytics with the technology to operationalize them into your decision making process. This also proves the point that Analytics is not a one-shot solution, it has to be planned and executed, just the way the organization would plan its strategy or its operations.

Today, we see numerous analytics vendors and captive organization alike talking about leveraging newer technology to enable analytics operationalization into their/their client’s business processes but we have seen little evidence of this happening. Maybe mobile BI is a way to leapfrog the traditional data hurdles and empower end users to take decisions based on rapid data changes.

We however believe that the need today is for organizations to quickly adapt to newer, better technologies and implement them in their analytics solutions and product offerings. This, however, is becoming increasingly difficult with technologies rising at a rapid rate and falling off even faster, with tool selection becoming a new job description by itself. How then can an organization stay abreast in such a fast evolving eco-system? The answer lies in choosing the right engagement model marrying data expertise with domain knowledge and the ability to work with multiple technologies both custom, proprietary and open source.

Global Big Data technology and services revenue will grow from $14.26B in 2014 to $23.76B in 2016, attaining a compound annual growth rate of 18.55%.

IDC’s Worldwide Big Data Technology and Services 2012 – 2016 Forecast
Your analytics provider used to be your own captive team or a niche third party company that worked on one particular analytics problem. That's history. Companies such as Google, AirBnB etc. are themselves competing on analytics and realized the power of data and technology in transforming business models. And the friendly neighbourhood analytics company? It has changed shape. It could be the Big Consulting company that did your last Big Data implementation strategy analysis, it could be the technology company that manages your system upgrades, it could be that cool start-up which provides a single point solution for say customer experience. All faces of analytics. All use different business models. They attack different facets of analytics and solve different business problems for different users.

Questions businesses are asking today:

- What are the various models that can be used? Consulting, outsourcing, in-house capability building etc.
- How do leaders decide which model to go with at which point?

**Engagement Model**

Businesses define the methodology of engaging with the customer using their engagement model. For certain businesses, engagement model defined the business and for others, customers defined their partnership with the engagement model.

Services or products offered by a company play a huge role in business but without a good engagement model, service providers would not be able to do justice to their services and clients would not be able to reap the complete benefit out of the partnership.

In the modern day world, there are multiple methods by which clients are served. On a broad spectrum, it happens through Products and Services and when we go a little further down this road, we have classifications like Products, Custom-Products, Pure Services and Consultancy. Though we can further classify this group, we will stop here for better understanding, as it exhaustively covers the different groups that falls within the product/service category.

**Quick definitions of different categories:**

- **Product**: A software is built once and sold to customers through the same form
- **Custom Product**: A software is built once and based on the needs of the customers customization is made on the product
- **Pure Services**: Build a new solution each time based on the customer needs; or deploy people
- **Consulting**: Provide objective advice and expertise and help organization to develop any specialist skills
- **Analytic Marketplaces**: Provide access to the buyers and sellers of Analytics

Though engagement models have evolved over a period of time, customers have not changed. Customers have always been looking for a partner who aligns with the dynamic goals of the organization. They have always looked forward to a faster ROI and flexibility. More than all of these, clients want business impact i.e. a top line or a bottom-line growth. Any partnership that solves these business prerogatives through a right engagement model becomes an ideal partnership for the client.

Though all the engagement models when delivered, will see their benefits, most of the time this is hindered by the maturity level of an organization in analytics. A product that forecasts Sales revenue most of the time will not be able to accurately provide forecast numbers at a business unit level or geographic level as each BU / geography is different. Fundamentally, different organizations will be able to realize benefits (Alignment to Goals, Faster ROI, Flexibility to Goals and Business impact) using different engagement models. Before we define which engagement model works, let us try to understand the different stages of analytics maturity cycle any organization passes through per Thomas Davenport classification.
Maturity level of an Organization:

Analytically Impaired: Inconsistent, poor quality, poorly organized data; no awareness or interest from leadership; few skills and attached to specific functions.

Localized Analytic: Data usable but in functional silos; enterprise has islands of data; leadership only at the functional or process level; multiple disconnected targets that may not be strategically important; isolated pockets of analysts with no communication.

Analytic Inspirations: Organization beginning to create centralized data repository; early stages of enterprise wide approach; leaders beginning to recognize importance of analytics; Analytics effort coalescing behind a small set of targets; influx of analysts in key target areas.

Analytic Companies: Integrate, accurate, common data in central warehouse; key data, technology and analysts are centralized or networked, leadership support for analytical competence, analytical activity centered on a few key domains, highly capable analysts in central or networked organization.

Analytic Competitors: Relentless search for new data and metrics; all key analytical resources centrally managed; strong leadership passion for analytical competition; analytics support the firms distinctive capability and strategy; world-class professional analysts and attention to analytical amateurs.

Below is our assessment of the framework with the conventional thought process on maturity level of an organization and benefits in conjunction with the engagement model.

Conventional Thought Process on Engagement Model

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<th>STRONGER ALIGNMENT TO GOALS</th>
<th>FASTER ROI</th>
<th>FLEXIBILITY</th>
<th>BUSINESS IMPACT</th>
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<tr>
<td>Analytically Impaired</td>
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<td>Pure Services</td>
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<tr>
<td>Localized Analytics</td>
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But the industry has successfully moved out of this framework and has started looking at the engagement model for benefits across the spectrum of maturity cycle. For example, if an organization feels that faster ROI is the most important priority, then it should start looking for products instead of pure services or any other engagement model. And similarly if an organization is looking for flexibility as a key priority then they should move towards Consultancy or Custom products.
Emerging Thought Process

While the first three concepts are fairly standardized, let’s look at the last two terms, Managed Services and Marketplaces.

Managed services as a concept means that a team that will work as an analytics arm of the client, providing services across the spectrum, from data management to providing post-implementation guidance by working towards impact, all with a strong governance mechanism. It stems from the belief that Analytics/Data-Science is not just a single-shot solution to a sudden business problem or Analytics/Data-Science is not just a technology product or is not just a team of people with data skills like pure services.

It relies on the concept of delivering long-term analytics value through a combination of domain focused and multi-disciplinary analytics solutions combined with technology platforms that can drive decisions and track impact. Analyst firms such as Gartner call it an Analytics Center of Excellence that connects with the functional teams and owns data, insight and impact from data.

The other increasing trend that could gather steam in the future is around Analytics Marketplaces. Imagine an AirBnB of Analytics helping companies to take the right Analytics decisions and connect with the right companies depending on their maturity level and their needs?

While initial marketplace models have focused on finding individual people or data-scientists who can solve tough business challenges, with the shift towards open data and the host of new technologies and tools that are crowding the marketplace, maybe there is a need for a broader Analytic marketplace that can connect the client company with the right Analytics solution. After all, we see successful marketplaces in many industries now. Will it work for a complex B2B world? That remains to be seen.
In both scenarios, the right engagement model will adapt to the maturity level the company is in by following a structured process:

**Step 1:** Align with client goals and prioritize key Analytics requirements needed to address business challenges.

**Step 2:** Design an Analytics/Data Science white box by developing re-usable tools, frameworks, algorithms and technology assets.

**Step 3:** Embed decision engines for business users to take decisions. Create a multi-disciplinary centre of expertise to provide sustained impact from Analytics. Embed Analytics in the Culture of the Organization.

**Example**

A Fortune 500 Technology company was using one third-party product for all their forecasting needs. Later they realized that on an overall basis the system was not able to do justice to the valid requirement that client was having with forecasting. And this led to partnering up with a consulting team to solve this problem. The consulting firm aligned with the client’s goal and was able to provide the overall strategy but still the implementation was not taken care of.

From the recommendation the consulting firm provided, the client partnered with a pure services company where they asked the company to provide them with the skills that they were looking for. Engagement with the pure services company also did not yield the results the company was looking for. Each of the previous partners contributed – but still the overall problem was not solved.

They chose the managed services model of engagement which resulted in ~100X ROI on Analytics Investment, creation of a best-in-class Planning Organization, completely driven by analytics with a ~90% analytics adoption rate. Will this continue to work? We believe the combination of Technology accelerators and the right Engagement Model can help the company shift closer to the Last Mile of Analytics.

**The Last Mile of Analytics:**

Analytics will remain a competitive differentiator for businesses in the years to come. Organizations will adopt it to drive better decisions. The current business models are merging, and differentiation fading. And that makes it imperative for organizations to realize Analytics is not really a single point solution but requires significant long term investment and leadership buy in to really show the value.

Just like a Strategic Planning process that organizations undergo to decide the Strategy for the company, a rigorous Analytics Planning process to plan the priorities, the required solutions and the expected impact will ensure that companies are not just starting new Analytics projects every quarter but really driving business decisions using Analytics. "Culture eats Strategy for Breakfast" said Drucker. Imagine the breakfast buffet of Data Analytics then. The Last Mile of Analytics is an unseen destination whose mystic roads are yet to be traversed. Right now, it might seem like the Mad Hatter is dancing a merry dance with the Queen of Hearts and Alice and Alice is still lost in Wonderland. But waking up to the right technology accelerators and the right engagement model can make Last Mile of the Analytics world visible and reachable.

Jim Collins in his book “Good to Great” spoke about the differentiating characteristics that transform a company from Good to Great. In a few years from now, will we see Analytics creating such differentiating Good to Great companies? That will be the true test of the Last Mile of Analytics.

**About BRIDGEi2i**

BRIDGEi2i provides Business Analytics Solutions to enterprises globally, enabling them to achieve accelerated business impact harnessing the power of data.

These analytics services and technology solutions enable business managers to consume more meaningful information from big data, generate actionable insights from complex business problems and make data driven decisions across enterprise processes to create sustainable business impact.