TURN DATA INTO OPPORTUNITY USING BUSINESS INTELLIGENCE AS A SERVICE (BIAAS)
Data is the new oil

More data has been generated in the last two years than in the entire human history. However, research indicates that only 0.5% of this data has been analyzed and used. Imagine the untapped potential lying herein. This has propelled companies to aggressively redefine their patterns of thinking and ways of doing business by leveraging data to draw actionable insights. Business intelligence (BI) plays a significant role in making this happen. For organizations looking to capitalize on their data, this paper pegs down a Business Intelligence as a Service (BIaaS) framework to enable you to effectively adopt an end-to-end BI solution with a specific reference to the oil and gas industry.

Business intelligence is not an easy affair

Business intelligence not only includes visualization and reporting of the data, but also unearths new business possibilities by discovering data relationships one never knew existed. When your organization begins its journey to make the most of its data, it will likely have to address several barriers. Below are four that we think are key.

1. Many companies lack a concrete BI vision. They do not foresee the end-state and in-turn are lost in the process. Data is all over the place and is not leveraged to the fullest. We believe that clearly understanding the drivers and constraints for the transformation and curating a compelling narrative will help develop a sound BI vision.

2. Companies struggle to make the right choice of BI tools and technologies for the prevailing business problem. Cloud/in-premise set-up, data maturity, scaling opportunities and licensing and operational costs are a few factors that will help identify the optimum BI platform.

3. Organizations fail to associate the outcomes of BI initiatives to tangible benefits. Despite large investments and several initiatives, returns are not reaped. As the metrics for value realization across business units vary from revenue growth, customer acquisition to inventory turnover and supply chain optimization, it is critical to delineate a clear framework for impact measurement.

4. Even data mature organizations grapple with organizational inhibitions in the context of technology. Executives use spreadsheet analysis and make decisions based on instinct. They are often resistant to new technologies and tools, especially with regard to the data represented to their higher-ups. We believe that change interventions play a key role in driving user adoption. For one of the major oil and gas conglomerates, Infosys has established a strong Yammer community to promulgate Power BI as the strategic BI tool across the organization.

With these challenges in mind, the starting point of a successful BI journey is to know the current organizational BI maturity.

Know your organization's BI maturity

Father of software quality, Watts S. Humphrey said, “If you don’t know where you are, a map won’t help.” Even before you charter a BI roadmap, it is worthwhile spending time to understand where you are positioned on the BI maturity curve. There are several models and frameworks available for this purpose. However, we propound the widely accepted Gartner’s maturity model with five levels – basic, opportunistic, systematic, differentiating and transformational, with a focus on three key areas – people, processes, and technology.

Exhibit 1 is Gartner’s business intelligence maturity model. The model indicates that the low end of the maturity curve means scattered data from disparate sources and the high end means a more organized and democratized data management with dedicated teams.

Interestingly, a study conducted by Gartner found that 87.5% of their respondents were at the basic level of data maturity. This reestablishes the fact that the potential from BI is abundant if done correctly.

With our deep experience and learnings with BI implementations for clients across industries, we have built a BI maturity scenario matrix to help you better relate and locate yourself on the Gartner’s maturity model with some key business functions identified and scenarios put forth. This is in Exhibit 2.

Once you know where you are on the maturity curve, the next step is to deep dive into a BI journey to draw the maximum from the available data.
Business Intelligence as a Service (BIaaS) offering

The Infosys offering - Business Intelligence as a Service (BIaaS) - will help you take a systematic approach to fulfill your BI needs. BIaaS involves five key stages for a successful BI implementation, packaged as a service addresses end-to-end needs. Furthermore, an organization can choose to walk through only the relevant stages based on its BI maturity and needs.

1. **Strategy** – A high-level BI roadmap is formed as an enabler to achieve the organizational business strategy. First, the key areas for BI implementation and the right stakeholders are identified. A blueprint of the data architecture is formed and the to-be BI estate is set forth. The idea is to look at the initiative primarily as a business-driven exercise and then align the IT accordingly. Next, the technologies, functions, and areas for upgrade, redevelopment, de-commissioning, and re-positioning are identified. Finally, consensus is formed to envision decision-making with the application of self-service BI, cognitive intelligence, and ML/AI as a long-term goal.

2. **Requirements** – This phase aims to discover and translate the needs and aspirations of stakeholders to relevant and feasible BI use-cases. The various personas involved in the BI journey are discerned. Design thinking workshops and customer co-creation mechanisms form the means to understand stakeholder pain-points, business outcomes and how they are interpreted. With the business, functional, and technical requirements specified, a fit-gap analysis is later carried out to choose the right technology and BI tool. The BI capabilities are mapped with the business processes; a pilot plan is crafted with select use-cases.

3. **Assimilation** – With the BI platform identified and the solution outlined, the assimilation stage revolves around the data management activities in the BI journey. The disparate data sources – in-house databases, cloud storage, external sources, live data streams, etc. – necessary to weave the story are identified. At this juncture, it is crucial to evaluate the current data governance and security guidelines and re-define them as necessary aligning with the overall BI strategy. The core of this stage is to prepare and model the data – detect schemas, catalogs, form metadata, recommend enrichment and ensure quality. Data patterns are identified considering both structured and unstructured data, and natural-language queries are run.

4. **Production** – This stage enables users to narrate the insights and operationalize findings. The crux of this phase is to develop BI dashboards, visuals and reports that are necessary to draw actionable insights. The solution is developed, tested, and rolled out. The documents and artefacts are prepared for users. The infrastructure and support functions are set up to guide users in their BI journey. Webinars, workshops, and familiarization sessions are also conducted.

5. **Dissemination** – The solution is further stabilized, and a plan is executed to scale the user-base across businesses. A customer journey is traversed to walk the stakeholder from data ingestion to drawing actionable insights. Incremental new features are rolled out in a timely manner as necessary. Several change interventions such as group collaboration, gamification, and contests are implemented to increase user adoption.
An overarching and timely aspect for BI implementation includes the enablement functions, namely, governance and change management. Throughout the journey and at relevant points, it is necessary to ensure that data governance is adhered to, the change management plan is in place, the project management office is set up, agile values are incorporated and a support system is developed.

Five expert roles required for the successful implementation of BlaaS are listed below. Their responsibilities at each stage of the BlaaS journey will vary on a case-to-case basis.

1. Functional Consultant – Understands the business requirements, asks the right questions and translates the needs to technical specifications.
2. Subject Matter Expert - Enables make the right decisions with deep knowledge and technical know-how in data and business intelligence domain.
3. Data Scientist and BI Developer – Builds the necessary reports, visuals and dashboards with substantial expertise in data mining and visualization.
4. BI Administrator – Ensures the sanity and functioning of the BI infrastructure such as use of gateway connectors, security and data source settings
5. Project Manager – Manages the overarching project management activities- deliverables, financials, timelines- and assumes the role of an agile coach with sound knowledge in Scrum and Kanban, as necessary.
BlaaS success story

A major oil and gas company had serious trouble in deriving actionable insights from oil wells to perform geo-hazard analysis. The existing methods employed by them were operating in silos. Infosys engaged with the client and chalked out a BI strategy, developed customized visuals to the users catering to their specific visualization needs and also delivered a mobile solution with proactive email triggers. This provided the company’s drilling team not only with the necessary information to take action but the information was also available at their fingertips and on-the-go.

Conclusion

The benefits to an organization from BlaaS are multifold. It not only breaks silos between teams and aligns the focus towards a shared goal but also ensures redundant investments are pruned from multiple disconnected BI initiatives. Given the organized approach of the BlaaS framework, the time taken to make critical decisions is substantially reduced, giving an organization a critical edge over the competition. Needless to say, if implemented rightly, the value realized is over and above to the investment made.
About the Authors

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