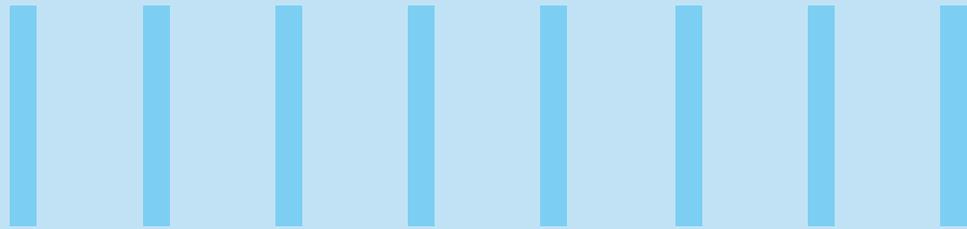


# TURN DATA INTO OPPORTUNITY USING BUSINESS INTELLIGENCE AS A SERVICE (BIAAS)



## 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.<sup>1</sup> 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 (BlaaS) 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 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<sup>2</sup>. This reestablishes the fact that the potential from BI is abundant if done correctly.

<sup>1</sup><https://www.forbes.com/sites/bernardmarr/2015/09/30/big-data-20-mind-boggling-facts-everyone-must-read/#4f5368a617b1>

<sup>2</sup><https://www.gartner.com/smarterwithgartner/take-your-analytics-maturity-to-the-next-level/>

Level 1 Basic	Level 2 Opportunistic	Level 3 Systematic	Level 4 Differentiating	Level 5 Transformational
<ul style="list-style-type: none"> <li>Data is not exploited, it is used</li> <li>D&amp;A is managed in silos</li> <li>People argue about whose data is correct</li> <li>Analysis is ad hoc</li> <li>Spreadsheet and information firefighting</li> <li>Transactional</li> </ul>	<ul style="list-style-type: none"> <li>IT attempts to formalize information availability requirements</li> <li>Progress is hampered by culture; inconsistent incentives</li> <li>Organizational barriers and lack of leadership</li> <li>Strategy is over 100 pages; not business-relevant</li> <li>Data quality and insight efforts, but still in silos</li> </ul>	<ul style="list-style-type: none"> <li>Different content types are still treated differently</li> <li>Strategy and vision formed (five pages)</li> <li>Agile emerges</li> <li>Exogenous data sources are readily integrated</li> <li>Business executives become D&amp;A champions</li> </ul>	<ul style="list-style-type: none"> <li>Executives champion and communicate best practices</li> <li>Business-led/ driven, with CDO</li> <li>D&amp;A is an indispensable fuel for performance and innovation, and linked across programs</li> <li>Program mgmt.. mentality for ongoing synergy</li> <li>Link to outcome and data used for ROI</li> </ul>	<ul style="list-style-type: none"> <li>D&amp;A is central to business strategy</li> <li>Data value influences investments</li> <li>Strategy and execution aligned and continually improved</li> <li>Outside-in perspective</li> <li>CDO sits on board</li> </ul>

Exhibit 1 – Gartner's BI Maturity Model

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.

Business Scenarios / Maturity Levels	Basic	Opportunistic	Systematic	Differentiating	Transformational
<b>Budgeting and financials</b>	Data reports pulled in as needed	Interim methods to connect desperate forecast and budget data sources	Insightful reporting but still unintegrated content treatment	Business-led ownership, defined return on data investment, evolved methods	Leadership driven; full alignment with business strategy; best of technologies, tools
<b>Manufacturing and Supply Chain</b>	"Siloed" operational reporting	Inconsistent reporting and prevalence of cultural barriers	Emergence of data strategy for production and quality management	Critical production and inventory decisions based on data insights	Automation, intelligent decision-making, predictive analytics, heavy reliance on BI
<b>Marketing and Sales</b>	Heavy use of localized spreadsheets	Attempts to draw market insights, but lacks leadership	Rich and evolved dashboards but lacks formalization	Well defined strategic outcomes from the BI implementation	Strong social media, customer data, product mix, and competition analytics
<b>Project Management</b>	Multiple ways of calculating metrics and KPIs	Though the focus is on formalizing information availability, there is no uniformity	Multiple program performance reporting and risks integrated	Delineation of best practices, continuous improvement, synergies identification	Self-driving programs, Establishments of CoE, automated PMO, better use of manager time
<b>People Management</b>	Multiple spreadsheets across regions	Incompetence in viewing talent strategically to draw insights	Disconnected sources of data readily integrated, well-defined governance	Effective and global view of employees with several parameters connected	People analytics, dynamic data management, effective restructuring decisions

Exhibit 2: Business Scenarios across the Gartner BI Maturity Ladder

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 (BlaaS) offering

The Infosys offering - Business Intelligence as a Service (BlaaS) - will help you take a systematic approach to fulfill your BI needs. BlaaS 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.

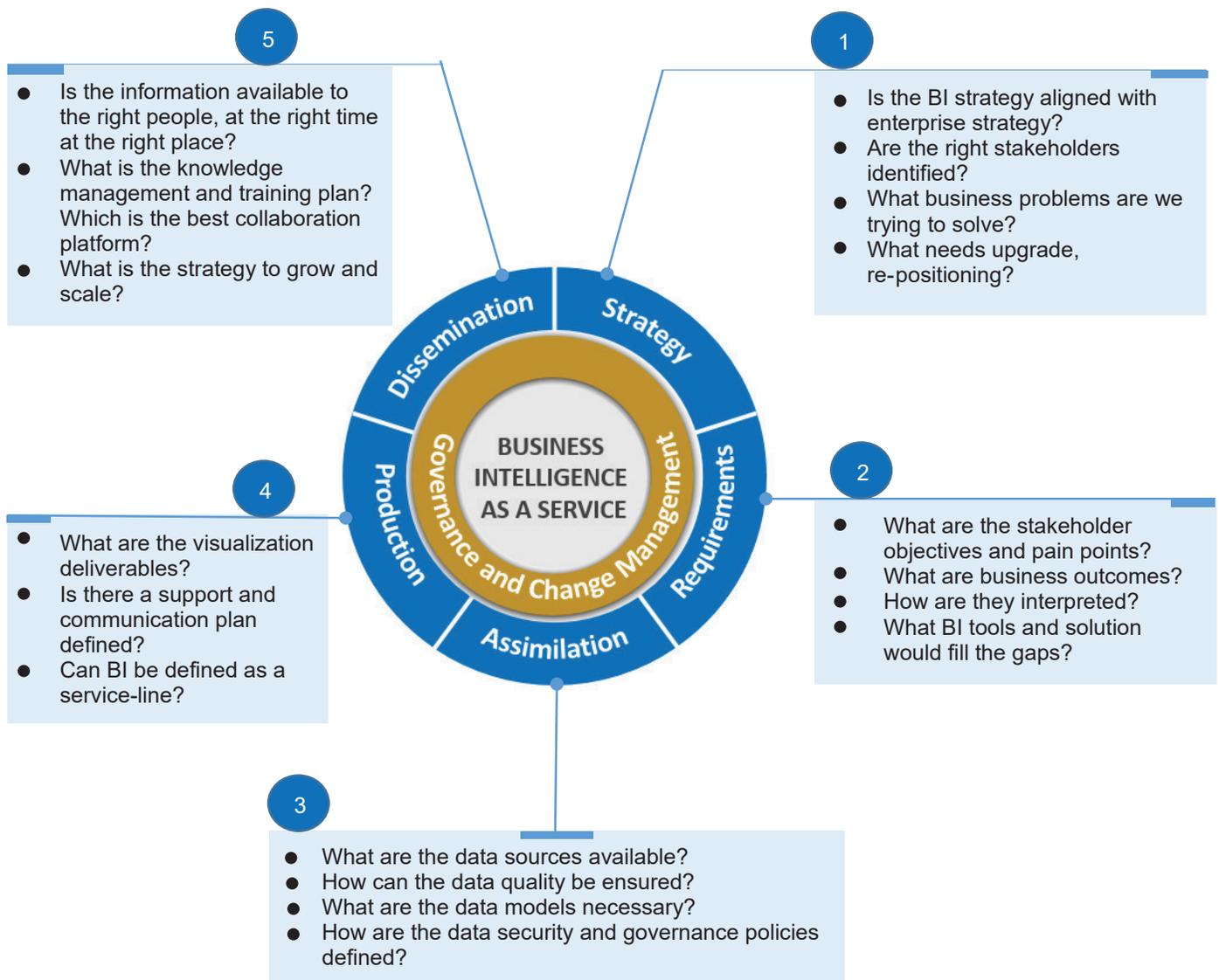


Exhibit 3: Questions the BaaS answers in the BI journey

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 BaaS are

listed below. Their responsibilities at each stage of the BaaS 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 pro-active 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



**Amit Singla**, *Principal Consultant, Infosys Consulting*

Amit has 12+ years of rich and diverse consulting experience in leading Business transformation programs for global companies across verticals. In last few years, he is driving Digital Transformation for clients in Energy vertical, key areas of scope have been, Growing Top-Line, Achieving Operational Excellence, Performance Management, Digitization of Processes and Enhancing User Experience. He has MS in Operations Research from the University of Wisconsin Madison, USA.



**Vishwadeep Rao**, *Senior Consultant, Infosys Consulting*

Vishwadeep is a part of the Energy practice in India. He has over 6 years of experience in data analytics, visualization and business process re-engineering and digital transformation in the energy and utilities industries. Prior to joining Infosys Consulting, he was a process control specialist with ABB Group helping major energy companies redefine “digital” in the Middle East. Vishwadeep holds an MBA from the Indian School of Business.



**Aditya Anand Chegu**, *Senior Consultant, Infosys Consulting*

Aditya is a part of the Manufacturing practice in India. He has over 8 years of experience in business insights, supply chain management and project management across industries. Before joining Infosys Consulting, he worked with Larsen & Toubro in their oil and gas upstream construction business, driving end-to-end project execution. Aditya holds an MBA from NMIMS, Mumbai and a Masters in Chemical Engineering from IIT Madras.



**Meera Pillai**, *Consultant, Infosys Consulting*

Meera is a part of the Energy practice in India. She has over 5 years of experience in Manufacturing-IT, MES domain & business analysis in the Oil & Gas industry with a focus on asset performance solutions. Prior to joining Infosys Consulting, she was in Reliance Industries Limited (RIL) as an application manager where she implemented and managed two business transformation projects as part of RIL's STAR (Smart Transformation at Reliance) initiative. Meera recently completed her MBA from S.P Jain Institute of Management & Research, Mumbai.

For more information, contact [askus@infosys.com](mailto:askus@infosys.com)



© 2020 Infosys Limited, Bengaluru, India. All Rights Reserved. Infosys believes the information in this document is accurate as of its publication date; such information is subject to change without notice. Infosys acknowledges the proprietary rights of other companies to the trademarks, product names and such other intellectual property rights mentioned in this document. Except as expressly permitted, neither this documentation nor any part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, printing, photocopying, recording or otherwise, without the prior permission of Infosys Limited and/ or any named intellectual property rights holders under this document.