

WHITE PAPER FOR INFOSYS:

Doing More with Data

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The Opportunities to Apply Data Analytics are Expanding Exponentially

One would think the world of data is a simple one. Unlike major business applications such as SAP or Salesforce, it does not involve business processes; it does not require change management – no end-user needs training; data does not threaten corporate silos like business applications sometimes do.

Still, the world of data is in motion. The number of data sources is expanding: while corporate clients are still focusing on making sense of their internal data, they also need to expand to additional external data sources. Social network streaming data is often the first step. A second and more important step will be to incorporate data from business partners, as well as government data, into services and decision-making.

At the same time, the software technology associated with big data and analytics is fragmented and evolving rapidly: with, for example, big data and the Apache Hadoop ecosystem of tools replacing older enterprise data warehousing technologies.

Users are turning away from traditional BI tools to data visualization products from the likes of Tableau, Qlik, and TIBCO/Spotfire. Also, NoSQL, in-memory databases, and PaaS databases are gradually replacing RDBMS.

And then there's artificial intelligence (AI). AI, principally in the form of machine learning, is beginning to transform analytics by providing a layer of judgment-based intelligence that has until now been the privilege of human beings. However, the application of AI is in its infancy and organizations are faced with the question of how to adopt this technology. Each organization needs to decide whether it is too early to invest in AI, or whether it should begin to adopt AI using a quick win approach and small scope projects; and, if so, what are the appropriate use cases? Add to this CEO pressure to implement AI, a shortage of AI and data science skills, and a need to reduce analytics costs through offshoring.

So, yes indeed, the world of data is in motion, and this brings both considerable business opportunity and complexity.

AI and Data Marketplaces Increasingly Important

In the world of data, three new phenomena have now merged: AI, IoT data, and data marketplaces.

AI is the technology that has grabbed the most mindshare in the past three years. AI is pervasive, and clients are creating industry-relevant use cases. The use cases range from advanced analytics to image recognition.

In the analytics space, AI is helping to deal with large volumes of data. This is the case for payment analytics, where AI is also helping on real-time fraud analysis needs. This is also the case for IoT, where AI will play a role at the edge level, depending on edge constraints such as local computing power, battery life, network presence or latency issues. Speed and also consumption frugality will be of the essence in AI.

Image recognition is an area where AI is already helping. Examples of projects include satellite or drone images, where the AI is detecting unexpected changes in patterns for forest fire alert needs, disease identification, or for monitoring industrial assets such as pipelines and improving road quality through detecting potholes.

Bots, and in particular chatbots, are also part of the AI journey for contact center and service desks. Chatbots are quickly evolving from complementing contact centers and self-service portals to providing additional functionality, e.g. identifying callers who are showing signs of anxiety and adapting the conversational tone.

NelsonHall is advocating that organizations should be looking at low-hanging fruit to solve operational issues rather than adopting new business models – and image recognition, as well as bots, are part of this stepped and relatively inexpensive approach to AI projects.

Data marketplaces bring an additional business model complexity beyond the technical difficulties. The concept of marketplaces that will act as intermediaries between firms that want to monetize their data and purchasers of data is a seductive one. The concept raises a lot of questions concerning the commercial model, data IPR, and data readiness. While most IT services vendors will limit themselves to using their advisory capabilities for educating their clients on the strengths and pitfalls of these emerging data marketplaces, several IT services vendors are looking to take over this intermediary role.

Selecting an IT Services Vendor for Analytics Projects

The first mission of IT services vendors is to advise their clients by assessing their data and analytics technology and process maturity, understanding the capabilities of the technologies now available in the market, and helping clients build technology roadmaps in support of their desired business outcomes. Vendors have a responsibility to help organizations to choose the appropriate technology roadmap, potentially incorporating a combination of new technologies, which may require expertise, proximity, and frequent client interactions, and mature technologies that are best delivered using a concentrated offshore delivery model.

So what criteria should organizations use when selecting an IT services vendor to assist in their data-related projects? NelsonHall believes organizations should consider the following four criteria.

Caliber of consultants. The priority for client organizations is to access expertise, and select (based on resumes/CVs and interviews), key experts and consultants that will work alongside them for the duration of the project.

Vendor data reference architecture. The second criterion is related to software fragmentation and is the caliber of the vendor's data reference architecture. Gone are the days when two to three ISVs provided the technology for managing data, and the range of software tools required is now huge. However, several IT services vendors have developed their reference architecture or "platforms." These platforms provide the "glue" for integrating software and managing processes, from data cleaning and ingestion to big data to the provision of analytics.

Use of these platforms shortens time to implementation, reduces software license costs, and provides long-term stability, enabling new software products to be phased in and out of the overall architecture. They typically rely systematically on as much open source software as possible, hence reducing software license expenses. This is not to say these platforms are free of charge; most vendors are charging for the cost of creating and maintaining them, though at a fraction of the cost of buying software licenses of COTS and integrating them. Clearly, this approach solves some of the data "plumbing" work.

Relevance of analytics use cases. Most IT services vendors have developed analytics use cases based on proprietary or open source algorithms. The nature of these use cases varies a lot, and ranges from blueprints to somewhat reusable algorithms solving a specific business challenge, to industry-specific "solutions." Great care is required here, as the term "use case" potentially covers a range of maturity levels, e.g., the term "blueprint" will often signal a consulting engagement, whereas an algorithm will typically mean something that can be reused. Use cases demonstrate that a vendor has identified pain points or opportunities in an industry, and its investment in these use cases will help clients accelerate the creation of their own algorithms.

Availability of pre-set dashboards & data workbenches. Our fourth criterion for assessing a vendor's offering is related to their IP around pre-set dashboards and data workbenches. Pre-set dashboards typically incorporate BI /data visualization software along with pre-identified KPIs (and potentially benchmarks) for specific use cases.

Pre-set dashboards, like big data platforms, are starting points for helping an organization to create its own dashboard. Having said that, in several industries (e.g., retail and online commerce, retail banking), major vendors have gained significant industry knowledge and offer comprehensive dashboards. Pre-set dashboards usually come with a software subscription and hosting option.

Finally, data workbenches are an important element of an IT service vendor's big data and analytics portfolio. Workbenches provide the software tools required for creating algorithms, from data discovery and preparation onwards. They are relevant when clients have completed data ingestion and preparatory infrastructure work and are focusing on the application of analytics. Typically, existing workbenches will be used by IT professionals, while some, with proper training, can be used by business users.

Infosys Increasingly Investing in Industry Use Cases

Infosys promotes a consulting-led approach (“100x possibilities”) to data-related projects and explores with the client the business opportunities provided by data; e.g. data monetization and new business models, operational efficiencies, and increased visibility of customer profiles (360-degree customer view).

The company is complementing this consulting approach and created its “blueprints” with the intention of reducing implementation times for both technical projects (with Nia for Data or its Infosys Analytics Workbench), and also for industry use cases (Genome solutions); for example:

- A **big data platform**, Nia for Data. Infosys estimates it has implemented Nia for Data for 80 clients, of which ~45% are in the retail and manufacturing sectors, and ~20% in BFSI
- **Dashboards** (“Insights as a service”) aligned by industry use cases. Examples include, in BFSI: trade analytics and regulatory reporting; in retail: stock-out-prediction, customer churn prediction, and propensity-to-buy-services
- A **workbench**, Infosys Analytics Workbench, for use by analytics professionals for data preparation and self-service data discovery
- **Industry use cases**, its Genome “solutions.” Infosys has structured its Genome portfolio around three main categories: customer Genome, supplier and product Genome, and asset Genome. Among the Genome solutions, NelsonHall believes approximately 35 are semi-reusable across clients. Examples of such semi-reusable solutions include: call center analytics for call prediction, inquiry conversion analysis, or customer 360 (“Infosys Retail Customer Genome”). Infosys Retail Customer Genome is structured around customer segmentation, lead generation, cross-selling, churn, satisfaction core, and customer lifetime value.

Looking ahead, Infosys is focusing its investment on AI and has developed several AI use cases relevant to analytics. Such use cases for call centers include chatbots and voice sentiment and emotion analysis; and for BFSI: fraud detection. Infosys is also investing in new AI technologies such as image recognition, and computer vision.

The company has worked with clients in sectors ranging from farming (crop analysis); utilities (automated reading of meters); CPG (detection of price tags in retail stores); P&C insurance (damage identification and classification). Infosys is promoting a stepped approach to AI that we think is appropriate to achieve quick wins and become familiarized with what AI can and cannot deliver.

NelsonHall talked with two clients of Infosys to understand why and how they used Infosys’ services.

U.S. Health Insurer Developed Analytics-Based Applications

The first client is a health insurance plan that operates in the U.S. The organization wanted to improve the visibility of its operations. In particular, it wanted to measure the profitability of its enterprise clients, identify adoption patterns of its health products, and provide underwriters with information that would help them bid for new business or re-compete.

To do that, as the first step in its analytics journey, the company needed to build a large data lake, with data coming from various applications and systems. The project was at scale with billions of data items flowing into the data lake. Once the data lake infrastructure was in place, the company needed to develop analytical applications in Python and Java.

The client selected Cloudera for its data lake IT infrastructure, and Infosys for its application services needs. Infosys helped develop analytics-based applications, testing and maintaining them. The client decided to amalgamate Infosys' team with its own resources. The organization values more than anything the technical expertise of Infosys, and expressed its view, several times, that the consultants were "just brilliant."

The client values the two IPs from Infosys: its best practices for implementing big data projects and its continuous innovation mechanism. The best practices helped the company to benefit from Infosys' experience in such projects and avoided it making mistakes. The continuous innovation mechanism helped identify software tools that could further automate its project delivery. The client felt that both these IPs demonstrated the technical expertise of Infosys.

U.S. Medical Device Manufacturer: Using Analytics to Open Up New Opportunities

The second Infosys client is a manufacturer that designs and markets medical devices to business clients as well as for the consumer market. Its consumer market products are diabetes devices that help measure and monitor the insulin and sugar levels in the blood of patients.

The company aims to differentiate its diabetes tracker devices from the competition and wanted to create an ecosystem of mobile apps, through partners or directly. For instance, the company wanted to develop a mobile app that would go beyond helping consumers navigate their insulin and sugar levels and help them make informed decisions about when and what to eat.

The client needed first to create a data lake to gather the streaming data from the medical devices, focusing initially on the standardization of data formats, in almost real-time so that the data can be used by any third-party technology vendor, and across devices.

The client used the services of Infosys at a strategic level, to help it envision how to move towards a service-based business model for its diabetes devices; and at a technology consulting level, to identify its technology roadmap and assess its current state and desired state technology landscape. Infosys was also involved in the implementation of the data lake and in developing several mobile apps.

What the client liked most was, in addition to the expertise that Infosys brought to the project, its ability to cope with regulatory compliance, covering FDA requirements in the U.S., and GDPR in Europe, through using metadata to understand what and where data could be used and stored.

Looking ahead, the client wants to go one step beyond, and expand from diabetes monitoring to identifying diabetes for each of its customers. The company and Infosys have co-invested in a joint application that will help predict any lack of insulin for each patient. Infosys is a go-to-market partner for this solution and will be targeting external clients, expanding its involvement from consulting and systems integration, to co-invest in a technical solution that Infosys will commercialize to external clients.

About NelsonHall

NelsonHall is a global industry analyst firm dedicated to helping organizations understand the 'art of the possible' in IT services (ITS) and business process services (BPS), and specifically how to identify, adopt, and optimize the next generation of digital technology and services for their business.

Founded in 1998, and with industry analysts in the U.S., U.K., and Continental Europe, NelsonHall has a 20-year track record of providing the highest quality market research to both the buy-side and supply-side of the ITS and BPS markets. All our research is onshore and in-house, and we are highly valued for both the insightfulness of our research and the quality and ready accessibility of our industry analyst inquiry/support service.

You can find out more about NelsonHall and its analysts, plus access to the latest industry insights at research.nelson-hall.com. To discuss how a subscription to NelsonHall research could benefit your organization, reach out to simon.rodd@nelson-hall.com.

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