Creating New Business Insights with AI and Data Analytics

THE REAL GOAL BEHIND the ongoing digital transformation is to strategically leverage technology — and the data it creates — to drive business value and innovation. As such, monetizing data ranks among the top business drivers fueling public cloud migration, according to a global IDG Research study.

And the benefits are real: Respondents say moving to the cloud has eased adoption of data analytics technology. The cloud is also facilitating use of cognitive computing technologies such as artificial intelligence (AI). Though skill gaps around data analytics exist, smart data use has the potential to provide business insights previously unavailable and to create new monetary value through data-driven decisions.

Data-driven decisions in the digital era
Categorizing data as a corporate asset is the starting point, but the true power of analytics can help organizations across a wide variety of situations:

- **Assessing how customer preferences** are changing through time
- **Evaluating why** customers leave or prefer certain services of a company
- **Exploring root causes** of certain manufacturing problems
- **Predicting the future value** (or optimizing the current value) of a product

However, there is a difference between collecting data and possessing the in-house ability to effectively analyze and ulti-
mately leverage the insights to make meaningful decisions – the type of decisions that enable innovation. The entire process becomes increasingly difficult as the growth of semi-structured data (website logs, clickstreams, mobile/IOT logs, social media, etc.) and unstructured data (chats, emails, documents, videos, images, voice recordings of customer interactions,) outpaces the organization’s ability to harvest them, explains Carlos Escapa, senior principal of business development for the AWS Machining Learning and Data Science Group:

Legacy analytics environments, such as data warehouses, rely mostly on periodic extracts of relational databases, which provide a very limited view over customer behavior and sentiment. Yet, the richest sources of data are semi-structured or unstructured. Companies successfully harvesting data holistically across both structured and unstructured data have a massive competitive advantage over competitors who are very slow to react or totally unable to understand customer behaviour and market trends.

Time is also money in today’s world, which is where AI enters the equation. By automating the processes that business depends on, organizations can adjust seamlessly to business changes or fluctuating customer preferences.

The cloud paves the way
Naturally, all businesses want to optimize the power of data analytics and AI to attain their business goals, seize new business opportunities, foster innovation, and expand business value. Achieving these goals requires access to processing power that’s rarely available in house.

Both AI and data analytics need sophisticated infrastructure to store, process, and serve large amounts of data fast and efficiently, explains Ozlem Celik-Tinmaz, North America lead for the Data Science Center of Excellence Team of Accenture Applied Intelligence:

However, small- or medium-size businesses who are not by nature digital (i.e., a physical product retailer, health provider, or manufacturer) rarely possess sufficient computing infrastructure to answer the needs of big data storage or high-performance computing. Also, these businesses often lack the skilled teams to run, manage, and support such infrastructure. Cloud providers give these organizations an option to outsource infrastructure and support team needs.

Survey respondents agree, with more than half reporting that the public cloud has eased adoption of big data and analytics technology. Additionally, 39% indicate that the cloud enables the use of AI. Digging deeper, companies at various stages of cloud
maturity are likely to report that the cloud enables the adoption of analytics (51% for mature vs. 45% for evolving) and AI (35% mature vs. 37% evolving). The ability to monetize data (43%) is a top measure of success with respect to cloud deployments. Companies that are more invested in the public cloud are more likely to report better utilization and monetization of data (44% vs. 34%).

According to Escapa, incorporating semi-structured and unstructured data sources significantly increases the magnitude of data when compared to legacy relational databases:

To properly normalize, tag, annotate, and prepare those new sources for analytics, there is a need for much bigger scale for networking, storage, and compute. Further, the data flow is irregular, with huge differences between normal and peak usage. Cloud-scale elasticity dispenses with the need for capacity planning and allows companies to stream and transform data for analysis in real time, without limits.

Cloud environments also have the basic constructs needed to ingest and process data at scale, as well as the various compute resources (CPU/GPU, depending on the algorithms used) needed to build and operate machine-learning models with very large amounts of data (terabytes to petabytes).

Recognizing a gap

Although organizations clearly understand the potential for real bottom-line impact with data analytics and AI, the skills gap is a clear challenge. Specifically, when ensuring the success of cloud deployments, data analytics surfaces as one of the top two in-demand skills (41%). Those in IT are more likely than non-IT peers to cite the need for more analytics skills (56% vs. 38%). Likewise, respondents in certain verticals — consumer products (50%) and industrial products (43%) — are more likely to consider analytics an area of need.

The first challenge is data engineering skills to architect pipelines that ingest and make data ready for analysis. For instance, there is a noticeable shortage in skills needed to define and deploy a data strategy that prepares their lines of business to effectively use AI for business process improvement and to create new products and services.

Compounding this, data scientists are in short supply — often commanding very high salaries and making data science unaffordable for many enterprises.

Unfortunately, an organization’s lack of these crucial skills tends to manifest itself through the inability to ask the right questions and recognize the potential areas where data can help. Says Celik-Tinmaz:

How organizations frame questions can ultimately determine whether or not data analysis will provide the type of answers the lines of business need. Knowing that data cannot address all business problems, the goal is to identify use cases that make sense and yield maximum business value. For instance, harvesting and using data from non-traditional sources, such as
Humans don’t deal well with monotonous tasks, and they make mistakes; machines are better at ensuring consistency and catching errors. For example, instead of sampling, automation lets companies analyze every single customer interaction across multiple channels.

voice recordings of customer calls at the call centers, images of products, or unstructured text documents in social media posts or insurance claims can help identify trends in product performance, predict optimal pricing structures, and learn about customer preferences.

Closing the gap
Fortunately, a few avenues exist for organizations hoping to close the gap.

The first approach is to undergo a strategic realignment to become a truly data-centric organization. Taking this approach starts with appointing a chief data officer to define a data strategy, as well as a monetization baseline. One of the keys to success along this journey includes identifying data providers and data consumers within the organization and making each group aware of its responsibilities for data quality and correlating service level agreements (SLAs). Additionally, a data operations team can help create and maintain a data lake and data catalog, as well as help data providers market their data-as-a-product both internally and externally. Finally, establishing a data-science team or a cross-functional “center for data science excellence” helps the lines of business both adopt and maintain a data-driven culture.

Of course, at least initially, the route to becoming data-centric can prove overwhelming. After all, not all organizations are in the market to hire data analytics experts or entire data science teams, nor can they afford to invest in expensive infrastructure that places a bigger burden on existing IT teams. In this instance, seeking out external assistance can pay dividends. Properly sourced third-party partners can play a meaningful role in addressing talent gaps, whether that involves outsourcing data analytics needs to consultant companies or looking for staff to augment existing teams, either for training or for additional eyes and hands on the data.

According to survey results, more than one-quarter of respondents will turn to third parties for data analytics skills and the platform expertise necessary to support analytics and AI technologies. Additionally, respondents in manufacturing (33% consumer/30% industrial) and finance (28%) verticals are most likely to turn to third-party partners for assistance. In concert with the greater demand for data analytics skills among companies in the early stages of cloud adoption, there is also a higher likelihood among that group to turn to a third party for help (29% vs. 22%).

When working with a proven partner, organizations can rely on experience when efficiently choosing and obtaining the appropriate cloud services. Partners also can provide experts to collect, engineer, and process data to deliver data-driven insights and invent new processes or offerings with measurable impact in both profitability and revenue.

The bottom line
Companies recognize the potential for data analytics and cognitive computing technologies such as AI to drive innovation and revenue. According to CIO’s 2018 State of the CIO report, investments in data and business analytics continue to be one of the top two priorities.

Although many organizations are leveraging public cloud deployments to foster the adoption of big data and analytics technology, skills gaps remain. There’s good news, though: Specialized third-party providers can help provide needed expertise and optimize the cloud for peak performance and business value.

Click here to learn more.

For more information, please contact:

Ozlem Celik-Tinmaz
North America lead for the Data Science Center of Excellence Team of Accenture Applied Intelligence
ozlem.celik-tinmaz@accenture.com

Accenture AWS Business Group
accentureaws@amazon.com