



Building a Data-Driven Culture With AI-powered Insights for All

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Data, data everywhere...Not a drop of insights!

Organizations have been investing in Analytics and Business Intelligence (BI) for many years now. However, a common problem they are facing is that they are still trying to solve business problems on an ad-hoc basis. For instance, when a senior executive asks his BI analyst the reason behind the drop in sales, the analyst goes back, builds a regression model and then presents the top two factors that influenced the drop. Now, if the analyst is asked to explain the reason behind these factors, he must go back and build another model. They are now in a vicious circle to refine the model and eventually decide on the next course of action. In the process, the executive has lost precious time in taking corrective action, not to mention the environment is likely to have changed and a competitor may have gotten the better of him.

Organizations with more mature Analytics and BI implementations say that while they have overcome the challenge of ad-hoc reporting, they have realized that analytics tools only do a good job of creating reports and visualizations to answer questions users are informed enough to ask. Therefore, a business user must be aware that a relevant data pattern exists in order to ask a question in the first place. Also, today a simple summary and report of factual insights, though valuable, is no longer enough and organizations often need an external consultant or a significant investment in employee time and training to analyze reports in the business context and decide the next course of action. As a result, businesses incur an opportunity cost which is often restrictive or prohibitive in the adoption of data analytics or business intelligence platforms.

According to Forrester, however, the most alarming challenge that organizations are facing is that no large enterprise today is sourcing, curating, analyzing, and deriving insights from all of its transactional data. Anecdotal evidence shows that most enterprises manage to get about a fifth of their structured data into enterprise data warehouses and data marts. If one adds unstructured data to the equation, Forrester's estimate falls to below 10%*. As the volume of data expands exponentially, so has the need for automated, real-time insights that are personalized to the employee role, department and goals.

Given the inherent gaps in present-day BI technologies, organizations fail to realize the dream of a data-driven culture and have started looking for ways to make their BI applications more efficient and effective. Artificial Intelligence (AI) and machine learning (ML) have the potential to bridge this gap and help organizations cover the last mile to reach personalized, actionable insights at the right time and the right place.

The Makings of AI-Powered Analytics

AI can enable BI tools to analyze massive amounts of data at high speeds to produce clear, contextual, and useful insights

An AI-powered system can clarify the importance of each data point at a granular level, and help human operators understand how that data can translate into real business decisions. By embracing the confluence of AI and BI, businesses can synthesize vast quantities of data into coherent plans of action. Therefore, AI will not replace a traditional BI platform, but augment it. It won't replace data scientists, but empower them and instill a data-driven culture within the organization.

Gartner suggests that analytics of the future will be a combination of machine learning, natural-language query and narration (NLP/NLG), automated advanced analytics and visual-based data discovery.

Automated Data Discovery

Enterprise data warehouses (EDWs) will continue to be a key element for BI. However, EDW implementations are usually long, complex and require significant effort to maintain. Machine-learning can augment data profiling and data quality, harmonization, modeling, manipulation, enrichment, metadata development and cataloging. Machine-learning based tools can get enterprises to analyze much more data and leverage it to making more accurate decisions.

Conversational Analytics

Executives and non-data analysts have always wished for data to simply “tell them a story.” This has largely come true with natural language processing (NLP) and natural language generation (NLG) technologies. The NLP engine parses every natural language interaction with users and translates a question into a query and gets an answer via a programmatically generated narrative based on the result set returned by the query. Some executives prefer responses in graphs, some prefer verbose narratives but the most effective method is a combination of narratives and visualizations. Some BI providers are also creating Chatbots as separate applications. These can allow non-technical BI users to ask questions and receive dynamically generated data visualizations and written highlights without knowing anything about the underlying data structures or metadata.

Automated Insights Discovery

AI/ML powered tools today can suggest areas of interest to explore based on data patterns and trends. These tools can also suggest the most useful reports and dashboards and “next clicks” based on colleagues’ usage patterns. They can point out possible issues and recommend the next course of action to avoid impact on the organization. They can forecast future market trends along with recommendations to plan future go-to-market strategies.

AI-powered analytics and conversational analytics are part of an emerging paradigm and several leading analytics vendors are working in this direction. Course5 Discovery is one such ‘Personal Analyst-on-Demand’ catering to the real-time needs of analysts, influencers and decision-makers by facilitating them with actionable insights around their customers, channels, content, categories and regions in a personalized manner. While many vendors are trying to deliver automated, AI-powered insights, Discovery goes one step ahead with its Book of Knowledge (BoK). To give back to the digital community and create transparency, we have operationalized our behind-the-scenes knowledge-base and exposed it to all our clients who are curious about root cause analysis (RCA) against their critical business KPIs, and are looking for prescriptive insights.

Course5 Discovery – Insights Analyst-on-demand Solution powered by AI

Course5 has been working with organizations across the globe for more than 18 years to solve complex analytics problems. We understand that an organization doesn’t just buy a product but the solution to a pressing problem. After listening to our customers, we have built Discovery, with the vision to enable and empower every employee with human-friendly, readable and actionable insights on the medium of their choice. The building blocks of Discovery are:

Inbound/ Outbound Data Connectors:

Discovery can sit on top of multiple 1st party (EDWs, multi-dimensional data cubes, etc.), 2nd party and 3rd party data sources and perform automated data extraction and metadata management using a library of REST APIs.

Semantic Layer/ Abstraction Layer:

As we keep collecting data from various sources, the data needs to be mined and transformed for consumption by business users. The semantic layer captures and persists all the pre-computed data after a series of transformations and stores it in one central location. This approach helps reduce the number of hits on the database, gives an efficiency boost and reduces the Chabot response time.

Model Factory:

Our repository of pre-trained statistical models is designed specifically for industries like CPG, FMCG, and Retail. We have built statistical models for some relevant use-cases like demand forecasting, pricing recommendation, Next Best Offer (NBO)/ Next Best Action (NBA), Market basket analysis, cross-sell/up-sell recommendations, and even simple causal models. Normally, as we would move from one industry to another, we would have to re-train the model but the advantage our pre-trained model is that the basic metadata is already known. The only change would be the actual data values under the metadata. We already know the relationships among cross-functional data dimensions. We know the dimensions that have a strong relationship and those that have weak relationships. All this knowledge resides in our **Book of Knowledge (BoK)**. This BoK works behind the scenes to help our machine learning models and AI Engine learn faster about the organization and its problems.

Real-time Decision Engine:

Some questions may have multiple answers; however, the real-time decision engine helps contextualize and personalize responses based on the role, department and goals of the employee.

NLU Engine (Persia):

Every time the user interacts via Search, Chat or Voice, the engine will parse the intent and entity hidden in the question. For example, if the user asks, “what was my booked revenue last month?” then “booked revenue” is the critical metric, which in NLP language is the intent. Further, the user has asked for the booked revenue “last month” which is the dimension or entity. Using this intent and entity mapping the NLU engine checks for the response in the semantic layer first and, if not found, computes it. This entire process is performed within a matter of 2-3 seconds.

As AI/ML techniques transform analytics as we know it, data and analytics leaders should plan to adopt AI-powered analytics to stay ahead of competition. The leadership team at Lenovo have realized this potential and are collaborating with Course5 to upgrade their existing analytics environment.

As the Ecommerce Director at a large Technology brand in North America said to us, “Like any other large global enterprise, we are overwhelmed with hundreds of dashboards and scorecards floating across our organization with factual dated insights.” What they were looking for was a solution that could help them augment their existing BI dashboards and improve them with causal, predictive and prescriptive narratives. Course5 is helping them achieve this with **Augmented Dashboards** that are enriched with personalized and actionable insights in the form of narratives and charts. Our solution also gives them the ability to interact with **Chatbot – Diva** in natural conversational language to find specific insights. **Once we deployed Course5 Discovery for their Sales function, we recorded the Speed-to-Actionable Insights of 11 minutes in comparison to 7 business days prior to deployment.**

Another pain point for the client was that their sales representatives were always on the go and needed a mobile medium to consume insights when they are on the field. To help the sales reps we have created a mobile-based **Chatbot – Henry**. Henry has been trained on four key data sources: Clickstream data (Adobe Analytics), SAP Financial data, CRM data (Salesforce), and Email performance data (Eloqua). With the help of Henry, sales reps can access personalized insights on the go via conversations instead of having to read detailed reports and dashboards. **We are currently delivering actionable insights in less than 3 seconds.**

Key Considerations to Ensure Success

AI-powered analytics has brought tremendous changes in the business world and we've seen here just a few examples of how Discovery can help organizations realize their potential. However, it's important to note there is no one-size-fits-all approach to such implementations. Rather it's a journey that organizations must embark on only once they have reached a certain level of maturity in their existing BI implementation. As is true for any remarkable journey, organizations must remain patient and not rush to reach the end-state. Course5 typically recommends a minimum of a 12-month roadmap with Proof of Concepts (PoCs) and continuous feedback with stakeholders to ensure alignment with the organizations' overall strategy and goals. Course5 believes that adoption is a key measure of success for such programs, and therefore we emphasize on having a strong organizational change management program with training, demos and solution champions who drive adoption within the organization. This high adoption rate translates to a data-driven culture that can bring operational improvements, improved ROI and competitive advantage to your organization.

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Know more about Course5 Discovery

Get Actionable and Human-Friendly insights across multiple consumption mediums and personas to create an Insights-First culture that rewards Data-Driven Decision Making.

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About Course5 Intelligence

Course5 Intelligence enables organizations to make the most effective strategic and tactical moves relating to their customers, markets, and competition at the rapid pace that the digital business world demands. We do this by driving digital transformation through analytics, insights, and Artificial Intelligence (AI). Our clients experience higher top line and bottom line results with improved customer satisfaction and business agility. As we solve today's problems for our clients, we also enable them to reshape their businesses to meet and actualize the future.

Rapid advances in Artificial Intelligence and Machine Learning technology have enabled us to create disruptive technologies and accelerators under our Course5 Intelligence suites that combine analytics, digital, and research solutions to provide significant and long-term value to our clients.

Course5 Intelligence creates value for businesses through synthesis of a variety of data and information sources in a 360-degree approach, solution toolkits and frameworks for specific business questions, deep industry and domain expertise, Digital Suite and Research AI to accelerate solutions, application of state-of-the-art AI and next-generation technologies for cognitive automation and enhanced knowledge discovery, and a focus on actionable insight.



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