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The Next Applied

Cognitive Computing And Implications For BFSI

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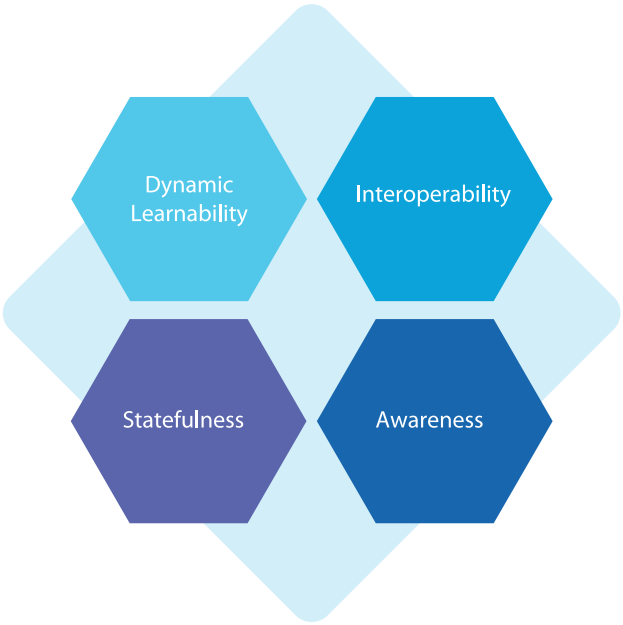
Introduction

Cognitive computing (CC) refers to the ability of a machine or a system to perceive, learn, and reason in a way that mimics the human brain. The result is an intelligent system with real-time responsiveness to real-life situations. Continuous learning on the job is a way of life for such systems.

With the advent of reels of information in the form of Big Data, and increased complexity in a VUCA world, creating sense and structure out of uncertainty is key to develop a competitive advantage. CC combines machine learning with artificial intelligence, thereby enabling people to take better decisions. CC systems sense, predict, infer, and even "think."

The following components are critical to the optimal performance of a CC system:



Dynamic Learnability: Learning and adapting as input, information, or context changes — without the need for manual intervention

Interoperability: To ensure real-time, seamless communication with humans, CC systems use inbuilt image and speech recognition algorithms

Statefulness: Alternating between time states is critical to ensure that data is remembered and transferred as appropriate to create the desired response. CC systems should possess the ability to remember past interactions and states, and relate these with the current state

Awareness: CC systems should be designed in such a manner that they are aware of the variables required to support the best decision — user requirements, language and syntax, time and location, operational objective, and other such contextual elements. Responsiveness should be high, and the system must be continuously in sync with any changes.

Relevance for Banking, Financial Services & Insurance

Since the recent financial meltdown, the BFSI industry has been witnessing transformational changes. A key change is that the customer has become the central figure in terms of how to do business; the customer drives new business models. To keep pace with these changes and ensure speedy and effective service delivery, the sector has turned to

incorporating the latest technology into mainstream business processes. IT has been leveraged to transform core banking through the introduction of electronic trade settlements, algorithmic trading, instant fund transfers, automated portfolio decisions, and advanced regulatory monitoring; the new game changer is the use of systems to drive customer delight. Cloud computing can enhance the customer experience through cost optimisation and by enabling a deep understanding of customer needs.

The following three elements are key to understanding what CC systems offer:

What is to be manipulated?

Data, processes, and systems to achieve the desired outcome

How is it to be manipulated?

Through responsive and reactive algorithms and programs.

Who is going to manipulate these?

"Intelligent" systems.

CC presents a new realm of possibilities through intelligent management of available data. With innumerable data points on interactive systems, the key challenge to financial institutions today is to make sense of the unstructured data that is currently unusable by existing applications.. Human judgement of currently available data is an important factor that needs to be considered to arrive at feasible solutions.

CC systems have the ability to deal with unstructured data along with structured data. They open up the possibility of deriving insights from untapped information such as blogs, social media posts, chat conversations, and comments and queries from customers. With continuously evolving intelligence that marries algorithms and learned judgement, CC systems can learn to handle more and more situations. This is a major improvement over conventional computing systems, which follow a definite flow.

Opportunities in BFSI

While traditional IT services cater to automation needs, which result in cost benefits, the more unpredictable and ad hoc need is Augmentation Services — which require real-time human analysis, personalised and customised to specific customers.

Personality-based and Contextual Customer Service

With the increasing commoditisation of banking services and products, customer service has emerged as the key differentiator for a bank in the marketplace. Today's highly interconnected world has given rise to myriad customer touch points. There are multiple options available to customers to perform

routine transactions such as money transfers or the recommendation of a service to a friend. Customer interactions with a bank through channels such as social media, e-mail, mobile, and chat are rich sources of information. These are waiting to be harnessed; they can help provide personalised service.

CC systems can derive psychographic profiles for each customer based on the Big Five personality traits — Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

Further, this information can be combined with the context of the customer interaction to serve the customer in a way that not only includes an understanding of the problem but also empathises with the customer to solve it.

Here are a couple of illustrations of personality-based and contextual customer service:

A woman calls to notify a bank of her husband's death, and asks about the insurance amount she is entitled to. The knowledge that her personality tends towards extraversion will help the bank route the call to the appropriate customer care executive to serve her better. Typically, an empathetic listener will help alleviate the customer's nerves and then provide a detailed overview of the best solution. A CC system can analyse the circumstances and the woman's query to synthesise information quickly and provide a suitable answer to her query.

The stock market has crashed, and a customer whose personality tends towards neuroticism calls up in panic to transact on his portfolio.
Calming the person down so that rational investment decisions can be taken is critical this situation. Given the rapid changes that in happen in a stock market crash situation, a CC system will look at the overall macro market scenario, use predictive analytics to arrive at probable consequences for the customer by understanding the customer's risk profile and portfolio, and provide sound financial advice.

Cyborgs in Insurance

Underwriters at insurance firms refer to diverse data sources to arrive at the risk estimate for any policy to take optimum decisions. For example, while underwriting property insurance for a clothing manufacturer, the underwriter will refer to engineering surveys, natural disaster maps, financial statements, past loss reports, and so on. These are highly unstructured and subjective data points. While an underwriter would like to look at as many sources as possible for the risk estimate, human limitations result in restrictions towards the

consideration of all valid data points. Also, financial institutions face the challenges of accuracy and thoroughness when it comes to underwriting.

Given that each policy risk needs to be individually assessed, and that the number of experienced underwriters is limited, organisations grapple with the challenge of scalability when it comes to delivering underwriting services. Traditional technology tools have the drawback of introducing assumptions and templates in the underwriting process. Given the variety in policies, this can result in a less-than-accurate risk estimate.

The above two challenges can be tackled through an "Underwriter Cyborg". This can synthesise all data sources, correlate them, understand historical patterns, predict future trends, and also pull in a bunch of other relevant data points that will aid individuals' expertise — and perform hand-in-hand with them — to deliver accurate estimates.

The ability to learn from earlier risk estimates can be incorporated through this methodology. Additionally, the cyborg can introduce scalability in the underwriting function. It can do away with assumptions and the template-based risk assessment approach to adopt a fact-based, data-centric, customised approach based on the details for each policy.

Such a CC solution will not only increase risk estimate accuracy but also greatly increase the throughput of underwriting departments.

Challenges in adoption

Cognitive computing addresses some of the most significant problems in the corporate world, but has not gained wide acceptance due to practical challenges that include:

Skills availability: CC systems tend to be complicated, and require specialised skillsto develop and maintain. As of today, expertise in developing, deploying, and utilising such systems predominantly resides in the research and academic fields rather than in the corporate domain.

Return on Investment: CC systems that solve specific domain problems need to be customised to individual business contexts, domain-specific ontologies, as well as regulatory environments. Introduction of these customisations over and above already expensive systems needs a strong business case to justify the investment.

About Mphasis

Mphasis (BSE: 526299; NSE: MPHASIS) applies next-generation technology to help enterprises transform businesses globally. Customer centricity is foundational to Mphasis and is reflected in the Mphasis' Front2Back™ Transformation approach. Front2Back™ uses the exponential power of cloud and cognitive to provide hyper-personalized ($C = X2C^{2}_{TM} = 1$) digital experience to clients and their end customers. Mphasis' Service Transformation approach helps 'shrink the core' through the application of digital technologies across legacy environments within an enterprise, enabling businesses to stay ahead in a changing world. Mphasis' core reference architectures and tools, speed and innovation with domain expertise and specialization are key to building strong relationships with marquee clients. To know more, please visit www.mphasis.com