UNLOCKING NEW POSSIBILITIES WITH ARTIFICIAL INTELLIGENCE
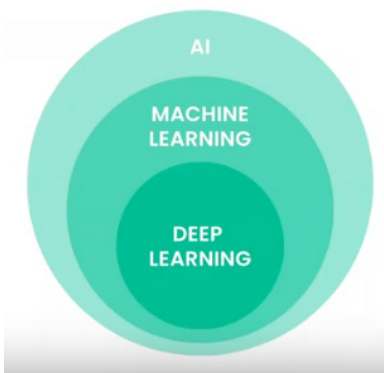
Abstract

We hear about Artificial Intelligence in every third conversation. But do we really understand how Artificial Intelligence can help improve KPIs and customer satisfaction? What are the challenges involved in designing and developing AI solutions? This white paper will give you some insights to answer the above questions and is written based on Infosys' experience in building AI solutions for CRM.

This whitepaper is written for CMO's, Sales Directors, CIO's, or organizations who are looking to enhance customer experience using the latest technology elements.

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Introduction to AI

Artificial Intelligence (AI) is the ability of a system or machine to perform tasks that are genuinely identified with intelligent humans. The building blocks of AI are machine learning and deep learning. These subsets of AI help applications learn things when they operate on a specific action or transaction and use these learnings to improve processes.

Machine learning refers to a set of algorithms applied to train a computer or machine. It provides systems critical ability to learn and improve (processes) based on experience.

Machine learning algorithms can be broadly divided into four categories:

*   Supervised Learning - This approach makes use of algorithms which are based on a "labeled" dataset - in which all records are a superset of outcome information.
*   Semi-Supervised Learning - This approach leverages algorithms which are based on a combination of labelled and unlabeled training data
*   Unsupervised Learning –– In this learning, algorithms learn from unlabeled datasets – i.e. without the outcome variable.
*   Reinforcement learning – In this technique, the algorithm decides on the best course of action to obtain maximum reward under a given circumstance.

Deep Learning is a stream of Machine Learning that:

*   Comprises of multi-dimensions of non-linear processing units (or neural networks) forming deep-layered architectures.
*   Learns multiple levels of representations corresponding to different levels or layers of abstraction; each level contributing to the conceptual hierarchy.
*   Learns in both supervised (for classification problems) and/or in an unsupervised manner (which is used for Pattern Analysis or Cluster formation).

Using the above-mentioned machine learning techniques and AI algorithms, CRM systems can manage customer relationships, build all types of apps, and handle different customer experiences.

Infusing CRM applications with artificial intelligence allows organizations to garner actionable customer insights and create winning growth strategies. These AI-enabled apps help understand customer insights, scan images, and compare and learn based on huge customer data that has been accumulated over time. It also helps apply analytics and ML techniques to generate trends and predict customer behavior. Organizations like Call Minor and Eureka use AI to capture customer interactions by tagging transcriptions according to key topics and categorizations. Injecting the right data into a CRM system generates key insights, specific data with respect to competitors, and ideal use cases. With this learning, apps can provide suggestions and solutions to provide the best customer experience.

Possibilities with AI Technology

The availability of customer data is rarely a challenge in today's world. However, making sense of this data often proves to be a complicated task. AI helps in the synthesis and analysis of this data, irrespective of the location it is in. Companies across various industries like banking, travel, and insurance use AI to encourage self-service transactions. Tata AIA Life Insurance has made 80% of its transactions self-service using AI. Indigo airlines have improved turnaround times for its flights and Bajaj Allianz Life Insurance has enabled digital transformation to meet business challenges.

Companies are using AI tools to do predictive analysis, speech recognition, and identify patterns to understand customer moods and intentions.

1. Content moderation on social media: Twitter is using Artificial Intelligence to find racist content and disable accounts automatically, in turn, enhancing the user experience. Similarly, Facebook and Instagram are using big data and AI to identify cyberbullying comments and remove offensive comments.

2. At call centers, AI is used to identify support ticket trends and recommend the best responses. Applications like Wise.io can identify which group of agents are best equipped to deal with certain tickets. Similarly, Digital Genius understand and expect based on case core Information and help to automate response and minimize data entry

3. In some cases, AI is used to predict call intent and reduce escalations with speech analytics. Using AI, some tools can understand natural language queries and provide correct answers consistently. Example is Akira, the virtual AI assistant

4. Some organizations use AI to analyze patterns in CRM and do a daily predictive lead score. Inside sales offer predictive analytical solutions to generate accurate lead scores in addition to recommendations.

Using customer data, companies are identifying new issues and coming up with ideas to resolve them. Thus, creating opportunities for revenue generation and resolving customer problems.

Case in point – A leading utilities company identified a new issue through AI model

One of the major utility companies in the USA offers a water line protection program to its customers to ensure that the water lines are protected and serviced immediately in case of any leakage or repairs.

The company engages with various contractors to provide these services. It observed that the expenses incurred increase with the number of complaints it receives. To reduce this cost in services and continue to provide the best customer experience, the utility company invested in AI-enabled Dynamics CRM.

The AI solution helps the company analyze customer complaints with various parameters. It also helps identify some of the problems in advance allowing the company to take proactive measures to resolve them.

A better understanding of customer issues also enables the company to develop new products like Leak Detection Program.

The program helps identify leaks in pipes using a simple device. This device triggers notifications/ alerts to the relevant customer whenever a leak is detected in any pipe. It also automatically stops the water flow through that pipe. The product is well accepted by customers as it really helps in stopping leakage and monitoring the flow of water using a simple smartphone app. It has been identified that with the leak detection device, customers experienced a 50% reduction of their water leakage and saved 30% on the water bill.

Technology Options

There is no dearth of AI-powered applications in the market. IBM's Einstein and Microsoft's Dynamics Insights are some of the examples. These applications utilize various Artificial Intelligence features to help understand customer insights. Before zeroing down on a solution, companies must evaluate all the options and assess which one is ideal for their requirements.

AI-enabled CRM applications should offer the following functionalities.

1. Empower organizations to better analyze customer data, create a unified view, and unearth new opportunities.

2. Allow users to automate customer-centric experience and provide customizable profiles, business measures, and experience.

3. Enable access to data across various platforms and provide a mechanism to analyze data and garner meaningful insights to generate conclusions.

4. Provide options to clean data across disparate sources and standardize it.

5. Provide options to classify and identify images. It should be able to retrieve the image and remove back noise from the image with facial recognition.

6. AI should have in-built natural language processing capability. For example: If an AI solution already has NLP capability, the time to value for an application that can understand product reviews and accordingly customize product recommendations can be significantly reduced.

Companies should take a flexible approach to AI implementation and allow experimentation. Any AI solution should have options to take various inputs to provide relevant results. For instance, users for AI solutions at a manufacturing plant are comfortable with six lean sigma standards. They prefer to experiment with given inputs and observe how a product is behaving to conclude its final behavior. In such a situation, a black box AI solution which autogenerates results may not be ideal. The AI solution should be open and provide options to experiment and give results.

Challenges

- **Data quality**
  Before a company can fully benefit from AI, it needs to ensure that the data can pass the 'sniff test'. Is it up to date? Does it accurately reflect the customer's relationship with the company? Because we understand that, data quality is utmost important for the success of AI solution.

  Solution: To make AI solution successful, marketing teams should complete data cleanup projects and that should be their first step to be successful. Management can also verify the quality of data using questions like 'has a team of experts ensured that they can navigate everything from different sources of data while covering compliance issues?'

- **Human assist factor**
  We understand that, AI help humans to resolve many problems but not to replace humans. the goal should be to make use of data and component elements (e.g., voice check, SMS messaging, etc.) so marketers can apply their plans instead of routine tasks. That's why it's important to make sure the AI solution has repetitive human monitoring which validates and allow people get best results, allowing for smarter AI applications.

  Solution: Improve human collaboration across all stakeholder groups. Develop policies to assure that the development of AI will augment human capabilities and drive the common good.

- **Phrasing queries**
  A majority of the existing AI solution can only answer direct questions.

  Solution: Account for all the possible text combinations for various questions while developing an AI solution. The

algorithm should be able to intelligently understand the questions while answering. This includes text variations, speech recognition, etc.

- **Increased cost**
  It can cost a lot of money and time to build, rebuild, and repair. Robotic repairs can help reduce time and dependency on human help, but that'll cost more money and resources.

Solution: Diligent planning should be done before starting the development process. Organizations should have a clear understanding of requirements, ROI, and the value that AI brings. This can help them balance costs with benefits and make informed development decisions.

- **Increased dependency**
  As witnessed in the case of smartphones

and other technology, humans can sometimes become too dependent on AI.

Solution: It is important to understand the level of human intervention required for AI solution. AI solution outputs should be reviewed iteratively by humans. Furthermore, human assist should be accounted for at each stage.

Conclusion

Artificial Intelligence provides enormous benefits. From robots and intelligence systems to driverless cars and healthcare, AI can make a critical impact across all fields. It is already being used to reduce fraud in banking and card-based domains and increase security with facial recognition. Governments across the world are also using AI for increasing cyber vigilance and providing enhanced services to farmers. We believe that the usage of Artificial Intelligence for areas like early detection of cancer, diagnosing eye diseases, and information sharing in the case of a pandemic will increase with time. While some applications will help reduce

the burden of chronic conditions, others will help us take proactive actions faster during unprecedented times like COVID-19. AI can be leveraged to drive a paradigm shift in the financial industry as well. It can help optimize fund management based on stock market fluctuations, give investors better visibility for their securitization assets, and so much more.

With 5G technology coming to every corner of the world, penetration and adoption of AI solutions will only increase. Now is the time to shift the gears, move beyond POCs, and explore what AI can truly do for us.

About the Author

Viswam Lingadally is a Principal Consultant with Infosys. He has over 15+ years of experience in the Microsoft Dynamics space and works on Dynamics CRM Implementations and presales. He is interested in thought leadership, developing and implementing solutions with next-generation technologies across AI, Automation, and related CRM domain space.

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