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AI Transformation in the Futuristic Software Industries

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***Abstract*— In this present-day Artificial Intelligence (AI) is comparatively new for the software industry and the same time for a functional world. This is one of the top-notch inventions in this modern era. Digitalization might be the new normal across industries, but companies now face the challenge of acceptance innovation while ensuring business as usual for all day-to-day various processes and purposes.**

Software that is socially intelligent and aware of human behavior is a major contributor in the transformation journey. Software Industries are depending on Agile, automation, cloud, digital marketing solutions and artificial intelligence (AI) is poised to simplify the transition further.IT industries now expect software to be powered by native AI capabilities and that is where the Software as a Service (SaaS) comes in a vital role.

AI has become a growing force in business. Software Industries are being reshaped by AI and this opens the massive opportunities for the existing software companies to help and drive a more simplified journey to satisfy their clients expectations and needs. This paper will showcase how AI portfolio can accelerate digitization initiatives helping industries to utilize their core systems effectively.

INTRODUCTION

Before examining how artificial intelligence technologies are impacting the current business world, it is important to define the term. "Artificial intelligence" is a broad and general term that refers to any type of computer software that engages in humanlike activities, including learning, planning and problem-solving.

1. *Learning Processes*: This focuses of collecting data and then creating algorithms, administer and figuring out device with step-by-step direction for how to complete the distinct task.
2. *Reasoning Processes*: This aspect of AI development focuses on choosing the right algorithm to reach a desired goal.
3. *Self-correction Processes*: This aspect of AI programming is designed to constantly fine-tune algorithms and ensure they provide the most accurate outcome possible.

SOFTWARE SEGMENTS FROM AI PROSPECTIVE

There are multiple guidelines and their respected segments what software companies need to follow:

1. *Software data management:* For many Organization biggest challenge is cost to manage the large volume of data and to meet business needs. AI helps to transform technology that is essentially low-level automation into intelligent, learning systems. The goal is to find a data management Product to make data as useful as possible while minimizing cost, risk and resource consumption using PaaS, IaaS and SaaS or on-premises infrastructure. AI Data Pipeline flow starts from Data collection, Data cleansing, Validation on test data set to maintain the quality followed by Deployment.

2. *Customer relationship management (CRM)*: Artificial intelligence is also changing customer relationship management (CRM) systems. For Organizations Customer relationship is the ongoing process to make interactions with the past, current and potential customers. The goal is remarkably simple to improve and grow the business by providing a better service to the consumers. CRM systems helps to manage the customer data and supports digital commerce, marketing and sealed need AI integrated in the system. CRM systems integrated AI technology to improve the customer experience. Software companies like HubSpot CRM, Salesforce, Monday.com are enhancing core CRM offerings with AI.

3. *Security:* This section is using AI for controlling cyber threats by identifying malware and spyware trends.AI can be used to update security databases. AI can collect data from different records to identify the new threats. As machine learning is becoming advance it can be used to help AI to distinguish between normal activity and abnormal activity. Security information and event management (SIEM) software provides security solutions. SIEM is mostly used by the larger organizations where the strong factor is compliance. SIEM provides monitoring and reporting and send alerts if any activity is run against predetermined rulesets. SIEM software collects and aggregates log data generated throughout the organization's technology infrastructure, from host systems and applications to network and security devices such as firewalls and antivirus filters.

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4. *Supply chain:* For implementing AI into supply chain management (SCM) there is the need to understand the importance of Supply chain planning. In supply chain and inventory industry AI is gaining the rapid stakeholders. AI in supply chain is allowing companies to frequently interact with stakeholders and track their operations, enhance supply chain management productivity, business strategies and include Digitization of sales process for greater flexibility. Oracle develops and builds tools for SCM software by integrating machine learning capabilities into their customer experience cloud computing.

FRAMEWORK AND ARCHITECTURE: EMBEDDING AI

Software Industry platforms are expanding machine learning capability to gather data on consumers software usage, exclusively in terms of assuring higher productivity and delivering business outcomes. For planning long-term and short-term AI embedding and/or interoperability, these competitors must inquire:

- Is the current and future AI acceptance primarily drive by autonomous AI software players? If answer is yes, then what kind of growth would be at next level in this space?
- What is the outlook for system integrators in terms of realizing business freedom within the creative context-aware software applications enabled world?
- How can we incorporate AI-enabled open system tools and services with commercial products? How will we design the reference architecture, and which all use case aspects do we incorporate?
- How can we endorse and progress beyond chatbots? More specifically, how can we infuse augmented brilliance into existing business processes and function?
- Some jobs will become obsolete. These includes drivers (because of raise of self-driving cars)
- What role do those commercializing A.I. play in addressing the social implications of A.I.?
- Is it OK to make A.I. systems capable of mimicking human emotion, especially if it is learning from us in real time?
- What is the acceptable point at which we are all OK with A.I. evolving without humans directly in the loop?
- Are we developing A.I. to seek a deeper understanding of ourselves? Can we use A.I. to help humanity live a more examined life?

ISVs too must plan their products and services, computing AI infusion by keeping in mind some extremely specific factors:

Independent software vendor (ISV s) must plan a

- Biggest trends in AI software development are AI-enabled coding apps like TabNine, Caffe, TensorFlow, Keras. They certainly bring "autocomplete" into the software development process to improve speed and accuracy during the development journey.
- Developer experience for delivering enhanced applications on major portfolios.
- Granting extensions and preservations of AI competence in major modules.
- Partnerships with autonomous AI software players for accelerated adjustment to counter the digitization opportunities.
- Advantage of an AI platform on top of the ongoing platform to address current business scenarios.

PROCESS TO FOLLOWED IMPLEMENTING AI IN AN ORGANIZATION

- Educating people about AI and it starts from very top level in the organization.
- AI readiness audit should be performed to study the state of organization in terms of adopting AI.
- AI Case studies are then developed through the consultation process which is carried out with all the stake holders.
- Management decides which project to implement.
- When one project is completed, another project is selected. This is the ongoing process.

ENERGY CONSUMPTION PATTERN INSIGHTS AND RECOMMENDATION BY AI- POWERD SMART ALERTS

The current Cloud computing offers Businesses to access information anywhere with compatible devices. Organizations have extraordinary opportunities to transform their businesses. The wide range of services are offered by cloud companies in the form of Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). Below figure highlights a possible reference structure for enterprises on the path to digital transformation, specifically for processes which have dependences across multiple layers of commercial enterprise software, integration, data and analytics, and mobile platforms.

Consider the following example.

Customer Representatives which can help the utility customers anytime and anywhere by encouraging to sign up to receive alerts with connection and recommendations for new and existing accounts.

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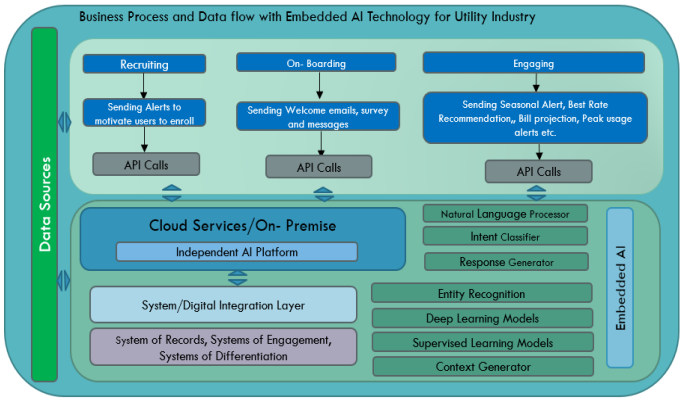

Fig.1 Business Process and Data Flow with Embedded AI for the Utility Industry

TOP 7 MOST COMMON USES OF CLOUD COMPUTING

1. *Infrastructure-as-a-Service (IaaS) , Platform-as-a-Service (PaaS) and Software as a service (SaaS):* IaaS is cloud-based services, pay-as-you-go for services such as storage, networking, and virtualization. PaaS is hardware and software tools available over the internet. SaaS is software that is available via a third-party over the internet. On-premises: software that is installed in the same building as your business.
2. *Hybrid cloud and multicloud:* Hybrid cloud is a combination of public and private clouds, usually to orchestrate a single IT solution between both. Multi-cloud entails multiple cloud services from one or more providers, for example AWS for application workloads and Microsoft Azure for enterprise database.
3. *Test and Development:* Testing for cloud enabled software uses cloud environments and infrastructure to simulate realistic user traffic scenarios to measure software performance, functionality, and security. In cloud testing, cloud provider owns the hardware, runs the test, and delivers the test results.
4. *Big data analytics:* Process used to extract meaningful judgement like invisible arrangement, anonymous interaction, market dynamics, and customer desire. Big Data analytics helps in better decision making and preventing forged exercises.
5. *Cloud storage:* Cloud storage normally maintained and managed by third party cloud providers. Cloud storage saves your data to a remote database in a very secure manner, so you do not have to worry about the data at your local storage.
6. Disaster recovery: Another benefit derived from using cloud is the cost-effectiveness of a disaster recovery. There are top 3 types of Disaster Recovery Plans
    - Data Center Disaster Recovery
    - Cloud-Based Disaster Recovery
    - Virtualization Disaster Recovery
7. Data backup: Backing up data has always been a complex and time-consuming operation. Cloud backup is a service in which the data and applications on a business's servers are backed up and stored on a remote server.

FUTURE AI COMPUTING IN BUSINESS WORLD:

AI basic objective is to enable computers to perform intellectual tasks, problem solving and understand human communications. It gives customer service departments the ability to satisfy their customers more and that leads to improving customer experience. AI can support three important business needs:
automating business processes, gaining insight through data analysis, and engaging with customers and employees. Enterprises will expect partner software companies to integrate the necessary intelligence across product offerings. In terms of gaining a competitive edge, these companies will invest in areas that justify returns on investment (ROI) and meet time-to-market requirements.
Now is the time vendors step up their game and deliver offerings and educate people to accelerate AI adoption in their Business that will help increase sales, improve customer experience, automate work process. It improves the agility, reduces barriers.
By using cloud computing, massive amounts of data can be stored in the same system, as companies grow there is always the need of scaling without human interventions and here the time can be reduced from months to hours, by using cloud computing, massive amounts of data can be stored in the same system providing the better security. Businesses can improve efficiency, reduce expenses, find new revenue sources, and empower and engage employees differently.
There are few major big tech companies—most of them are American companies and few are Chinese--that are overwhelmingly responsible for the future of artificial intelligence. In the U.S., they are Google, Microsoft, Amazon, Facebook, IBM, and Apple ("G-MAFIA"). In China, it is the BAT: Baidu, Alibaba, and Tencent.

REFERENCES

[1] Adam Uzialco, “How Artificial Intelligence Will Transform Business [Editor].” Business News Daily, April 22, 2019
[2] Linda Tucci, “artificial intelligence [Editor].” Tech Accelerator
[3] Top 10 companies in Artificial intelligence supply chain market, Meticulous blog, November 9, 2020
[4] Sofiya Merenych,” Modern artificial intelligence frameworks that make AI available to everyone [Business and Tech Writer].” August 19, 2019
[5] Sayantini,” Top 12 Artificial Intelligence Tools & Frameworks you need to know [Data Science Enthusiast]”, November 25, 2020.
[6] Alexiei Dingli,” *10 questions, you always wanted to ask an AI disruptor, but never did!* [Professor].” November 17, 2019”
[7] Amy Webb,”16 uncomfortable questions everyone needs to ask about Artificial Intelligence [Author]”
[8] Chris Milan,”How cloud computing helps your business[Author].” Embrace Technology, September 27,2016
[9] Jonathan Johnson,” [Tech Writer & Blogger].” BMC Blogs, June 8, 2020