**Assignment 1**

## Use cases of AI: AI is changing every industry and business function, which results in increased interest in AI, its subdomains, and related fields such as machine learning and data science. As of 2018, 37% of organizations were looking to define their AI strategies. There has been significant progress since then and according to a recent O’Reilly survey, 85% of organizations are using AI. To integrate AI into business, one needs to identify how AI can serve the business and the possible use cases of AI.

**1.Marketing**

Marketing can be summarized as reaching the customer with the right offer, the right message, at the right time, through the right channel, while continually learning. AI can provide accurate insights and suggest smart marketing solutions that would directly reflect on profits with customer data. Top three AI use cases in marketing:

Marketing analytics: AI systems learn from, analyse , and measure marketing efforts. These solutions track media activity and provide insights into PR efforts to highlight what is driving engagement, traffic, and revenue. As a result, companies can provide better and more accurate marketing services to their customers. Besides PR efforts, AI-powered marketing analytics can lead companies to identify their customer groups more accurately. By discovering their loyal customers, companies can develop accurate marketing strategies and also retarget customers who have expressed interest in products or services before.

Personalized Marketing: The more companies understand their customers, the better they serve them. AI can assist companies in this task and support them in giving personalized experiences for customers. As an example, suppose you visited an online store and looked at a product but didn’t buy it. Afterward, you see that exact product in digital ads. More than that, companies can send personalized emails or special offers and recommend new products that go along with customers’ tastes.

Context-Aware Marketing: You can leverage machine vision and Natural Language Processing to understand the context where your ads will be served. With context-aware advertising, you can protect your brand and increase marketing efficiency by ensuring your message fits its context, making static images on the web come alive with your messages.

## 2.Sales

## Pre-Sales

**Sales Forecasting:**AI allows automatic and accurate sales forecasts based on all customer contacts and previous sales outcomes. [Hewlett Packard Enterprise indicates that](https://www.clari.com/product/forecast-management) it has experienced a 5x increase in forecast simplicity, speed, and accuracy with Clari’s sales forecasting tools.

## Sales

**Sales Data Input Automation:** Automatically sync calendar, address book, emails, phone calls, and messages of your salesforce to your CRM system. Enjoy better sales visibility and analytics while giving your sales personnel more sales time.

[**Predictive sales/lead scoring:**](https://research.aimultiple.com/predictive-sales-lead-scoring/)Sales forecasting is automated with increased accuracy thanks to systems’ granular access to lead scores and sales rep performance. For scoring leads, these systems leverage anonymized transaction data from their customers, sales data of this specific customer. For assessing contact factors, these systems leverage anonymized data and analyze all customer contacts such as email and calls.

**Sales Rep Chat/ Email Bot:**Chatbots are ideal to answer first customer questions. If the chatbot decides that it can not adequately serve the customer, it can pass those customers to human agents.

**Sales Rep Response Suggestions:**AI will suggest responses during live conversations or written messages with leads. Bots will listen in on agents’ calls suggesting best practice answers to improve sales effectiveness

**Sales Rep Next Action Suggestions:** Your sales reps’ actions and leads will be analyzed to suggest the next best action. This situation wise solution will help your representatives to find the right way to deal with the issue.

**Meeting Setup Automation (Digital Assistant):**Leave a digital assistant to set up meetings freeing your sales reps time. Decide on the targets to prioritize and keep your KPI’s high.

**Prescriptive Sales:** Most sales processes exist in the mind of your sales reps. Sales reps interact with customers based on their different habits and observations. Prescriptive sales systems prescribe the content, interaction channel, frequency, price based on data on similar customers**.**

**3.Data Visualization**:

Visualize your data for better analytics and decision making. Let the dashboards speak. Convey your message more easily and more esthetically. Our website has [more information about data visualization](https://research.aimultiple.com/data-visualization/) if you are interested.

**4.**[**Data Management & Monitoring**](https://research.aimultiple.com/data-management/):

Keep your data high quality for advanced analytics. Adjust the quality by filtering the incoming data. Save time by automating manual and repetitive tasks.

**5.Data Cleaning & Validation Platform**:

Avoid garbage in, garbage out by ensuring the quality of your data with appropriate data cleaning processes and tools. Automate the validation process by using external data sources. Regular maintenance cleaning can be scheduled, and the quality of the data can be increased. Feel free to read [our in-depth guide about data cleaning](https://research.aimultiple.com/data-cleaning/) if you want to have more information.

**6.**[**Synthetic Data**](https://aimultiple.com/synthetic-data-generator)**:**

Computers can artificially create synthetic data to perform certain operations. The synthetic data is usually used to test new products and tools, validate models, and satisfy AI needs. Companies can simulate not yet encountered conditions and take precautions accordingly with the help of synthetic data. They also overcome the privacy limitations as it doesn’t expose any real data. Thus, synthetic data is a smart AI solution for companies to simulate future events and consider future possibilities. You can have more information on synthetic data from our related article.

**7.**[**Data Labeling**](https://research.aimultiple.com/data-labeling/):

Unless you use unsupervised learning systems, you need high quality labeled data. Label your data to train your supervised learning systems. Human-in-the-loop systems auto label your data and crowdsource labeling data points that cannot be auto-labeled with confidence.

**8.**[**Self-Driving Cars**](https://research.aimultiple.com/self-driving-cars/):

From mining to manufacturing, self-driving cars/vehicles are increasing the efficiency and effectiveness of operations. Integrate them into your business for greater efficiency. Leverage the power of artificial intelligence for complex tasks.

**9.Vehicle Cybersecurity**:

Secure connected and autonomous cars and other vehicles with intelligent cybersecurity solutions. Guarantee your safety by hack-proof mechanisms. Protect your intelligent systems from attacks.

**10.Vision Systems**:

Vision systems for self-driving cars. Integrate vision sensing and processing in your vehicle. Achieve your goals with the help of computer vision.

**11.Driving Assistant**:

Required components and intelligent solutions to improve rider’s experience in the car. Implement AI-Powered vehicle perception solutions for the ultimate driving experience.

**12.Robotic Process Automation (RPA)**:

Digitize your processes in weeks without replacing legacy systems, which can take years. Bots can operate on legacy systems learning from your personnel’s instructions and actions. Increase your efficiency and profitability ratios. Increase speed and precision, and many more.

**13.Collaborative Robot**:

Cobots provide a flexible method for automation. Cobots are flexible robots that learn by mimicking human workers’ behavior. Smart engineering systems for solutions still requiring human oversight.

**14.**[**Cashierless Checkout**](https://research.aimultiple.com/self-checkout/):

Self-checkout systems have many names. They are called cashierless, cashier-free, or automated checkout systems. They allow retail companies to serve customers in their physical stores without the need for cashiers. Technologies that allowed users to scan and pay for their products have been used for almost a decade now, and those systems did not require great advances in AI. However, these days we are witnessing systems powered by advanced sensors and AI to identify purchased merchandise and charge customers automatically.

**15.Invoicing:**

Invoicing is a highly repetitive process that many companies perform manually. This causes human errors in invoicing and high costs in terms of time, especially when a high volume of documents needs to be processed. Thus, companies can handle these repetitive tasks with AI, automate invoicing procedures, and save significant time while reducing invoicing errors. The company avoids re-invoicing costs with AI tools, as well. For example, [Hypatos also indicates that](https://hypatos.ai/en) automated [invoice capture](https://research.aimultiple.com/invoice-capture/) can lead up to 90% cost saving in your invoice-related processes.

**16.**[**Predictive Maintenance**](https://research.aimultiple.com/predictive-maintenance/):

Predictively maintain your robots and other machinery to minimize disruptions to operations. Implement big data analytics to estimate the factors that are likely to impact your future cash flow. Optimize PP&E spending by gaining insight regarding the possible factors.

**17.**[**Manufacturing Analytics**](https://research.aimultiple.com/manufacturing-analytics/):

Also called industrial analytics systems, these systems allow you to analyze your manufacturing process from production to logistics to save time, reduce cost, and increase efficiency. Keep your industry effectiveness at optimal levels.

**18.Inventory & Supply Chain Optimization**:

Leverage machine learning to take your inventory& supply chain optimization to the next level. See the possible scenarios in different customer demands. Reduce your stock, keeping spending, and maximize your inventory turnover ratios. Increase your impact factor in the value chain.

**19.Robotics**:

Factory floors are changing with programmable collaborative bots that can work next to employees to take over more repetitive tasks. Automate physical processes such as manufacturing or logistics with the help of advanced robotics. Increased your connected systems by centralizing the whole manufacturing process. Lower your exposures to human errors.

## 20.AI-driven research & development:

## Automated component design is the leading use case in AI-driven R&D. The goal: Letting software independently develop dozens of different designs in short periods, given a set of predefined constraints. The optimal design is chosen afterwards. For this task, digital twins and simulations often complement the AI techniques.