Artificial intelligence (AI) was founded as an academic discipline in 1955, and in the years since has experienced several waves of optimism, followed by disappointment and the loss of funding (known as an "AI winter"), followed by new approaches, success, and renewed funding. Thanks to the greatly increased processing power and cloud storage capabilities, we are now entering a new phase of the AI renaissance.

Companies have started leveraging AI to upgrade offerings and create new products and services. AI is helping them transform practices, processes, infrastructure, and underlying business models.

According to Accenture, AI can increase corporate profitability by an average of 38% by 2035.

We are currently able to gather and store vast amounts of data. Companies have access to financial data, data about sales, production, customers, employees. The next step is to analyze it, understand it, and use it to make informed decisions about the business's future. We shouldn't be surprised that AI consequently penetrates almost all business areas to increase efficiency, accuracy, cost-effectiveness on the one hand and decrease manual work, time, and effort consumed by simple, repetitive tasks on the other.

AI IN FINANCE

For many financial institutions using AI becomes a new way of operating. The global Financial Services sector is undergoing profound digital transformation backed up by the advancement in AI.

Also, corporate finance departments are profiting from automation powered by Machine Learning.

RPA (Robotic Process Automation) is already well known to finance teams. It mimics human interaction with core systems, web, and desktop applications to execute processes. With support from AI, it can train and teach software robots to process transactions, monitor compliance, and audit processes automatically.

The corporate finance sector uses RPA powered by AI to retrieve tax and process invoices. It reduces human error, saves money through avoiding late fees, cuts down on irrelevant costs, increases focus on higher-value activities, organizes invoice processing with your ERP. It can track down the relevant information, finding the source of a problem, and suggesting which payments to match to which invoices.

Thanks to AI, CFOs can access financial forecasts, real-time market values, and global statistics that can help them identify changing market trends and patterns and use them for their planning and decision-making processes.

A significant benefit that AI can bring to finance is fraud detection. With advances in fraud analytics, systems can learn, adapt, and uncover emerging patterns for preventing fraud.

AI IN FINANCE at a glance:

- Better financial decisions
- Intelligent automation
- Better accuracy and efficiency
- Fraud detection, mistakes tracking and correcting

TOOLS: Blue Prism, Inflectra Rapise, UiPath, Automation Anywhere, Pega, Ziotis
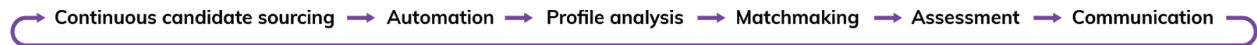
AI IN HR

Artificial Intelligence is well known for changing the human experience. It can analyze human behavior, identify key elements of different processes, and improve how people interact with systems, applications, even each other, and then alter this experience. No wonder it was much appreciated by Human Resources.

There are two key areas where AI can support HR. It can change both: candidates' and employees' experience.

Candidate experience

There are some aspects of the hiring process. The bigger the organization, the more complicated it gets. The HR department is responsible for continuously providing new candidates for open positions, encouraging them to apply, analyzing their profiles, matching their skills and abilities with the right team and position, checking their skills, maintaining a positive atmosphere, and closing the process in a given time. Luckily, AI turns out to be extremely helpful in this process.

Continuous candidate sourcing ➝ Automation ➝ Profile analysis ➝ Matchmaking ➝ Assessment ➝ Communication

With the advance of digital marketing, so much data is available to personalize the timing, medium, and message of candidate outreach. Automated tools can not only find but also contact candidates with personalized messages exactly when they are available.

Some algorithms can analyze a candidate's previous work experience and interests and match them with open roles best suited for them. It also improves the candidate experience by automating repetitive, low-value tasks and freeing up time.

AI provides solutions increasing the HR team's efficiency and effectiveness, giving quality candidate recommendations to recruiters, extracting candidate information from resumes into fields created for skills, education, experience, qualifications, contact details, and much more.

Video interview solutions filter the talent pool, using data points such as body language, facial expressions, reaction time, evaluation of vocabulary, etc.

AI systems can send customized, automated messages to ensure that candidates are informed at the right times, minimizing unnecessary anxiety and ensuring that qualified candidates remain engaged.

Employee experience

Monitoring satisfaction level, engaging in internal projects, and maintaining a high employee retention level is often also under HR department responsibilities. In a big and geographically spread organization, it's not easy to do it. Yet still, companies want to analyze sentiment and employee needs. AI can help HR gather insights directly from employees and deliver the experience they want and ask for, which, as a result, boosts engagement and lowers turnover.

AI can also boost Learning and Development Programs. With the data gathered from employees, it's possible to create agile and adaptable learning programs that can meet employees' individual needs, personalizing the learning journey based on job role, existing skill sets, development plan, and future goals.

Apart from that, employee data analysis can empower managers to solve problems and lead to more informed decisions that affect employee and organizational success.

AI IN HR at a glance:

- Increase HR efficiency and effectiveness,
- Provide quality candidates
- Personalize engaging communication
- Create Feedback Culture

Tools: Sovren Parser, Ideal, HireVue, fetcher, Cultivate

AI IN SALES

Machine Learning can support finance and HR. Indeed, there is a potential to optimize sales with the enhancement of AI.

Forecasts are complicated but automatable. AI allows automatic and accurate sales forecasts based on all customer contacts and previous sales outcomes.

AI systems can leverage data from hundreds of sales reps to understand the factors that increase a prospect's likelihood to buy and help sales reps focus on the right opportunities. Better prioritization can enable sales reps to use their time better.

After a lead generation, it is necessary to determine the priority of leads. It is possible to use AI to score customers' likelihood of converting based on 3rd party and company data.

AI will synch data from various sources effortlessly, and intelligently into CRM. It will set up meetings, update calendars, send invites, and create necessary communication.

Depending on the type of business, machine learning can also optimize pricing and generate more sales. AI-based dynamic pricing tools enable enterprises to change their price based on real-time data, including customer's price perception. It can monitor competition and suggest discounts.

Unsurprisingly, price plays heavily into purchase considerations. However, the perceived value goes a long way towards ensuring customer satisfaction at any price point. Consumers are willing to pay more if it means they'll enjoy a positive customer experience.

AI IN SALES at a glance:

- Upselling and Cross-Selling
- Price optimization
- Improving customer engagement
- Supporting Sales teams
- Forecasting
- Understanding customer needs

TOOLS: Appier, Tact.ai, Crystal, Calara (scheduling service), LeadCrunch.ai, Conversica

AI IN MARKETING

Nowadays, the majority of marketing activities are based on data. We know how Google and Facebook are using data to personalize users' experience and optimize their profits. Tinder's, Netflix's, and Spotify's recommendation engines are also famous. These giants discovered the potential of AI very quickly and implemented it into their services. Thanks to them, AI in online marketing became a necessity. Now we know that AI improves customer experience and drives conversion. It can personalize interactions to deliver an optimal customer experience at scale across web, mobile, email, and ads (personalized content, tailor page layouts & designs, recommendations, retargeting).

Analyzing and modeling buyers' behavior

AI simulation and modeling techniques paint a clear picture of buyers' psychology and purchasing behavior (online and offline).

Personalization is critical. Brands must understand their customers to provide experiences that suit their needs and continuously nurture customer loyalty.

Thanks to AI, marketing departments learn how people interact with their business and what they think and feel about their brand, services, and products. Comments, reactions, and conversation analysis lead to deep sentiment, understanding that in the next steps allows marketing to design and implement optimization techniques towards negative perception and support positive emotions.

We could say the AI gives marketing departments self-awareness. With the data about marketing performance, businesses can better manage their marketing operations by suggesting the marketing activities that yielded the best and cost-efficient results.

Last but not least, marketing can profit from AI-powered Digital Asset Management. Marketing departments are generating a lot of content (text, images, videos, etc.). AI automates asset categorization, indexing and metadata tagging. This speeds up the search and use of digital marketing assets as well as their re-use and repurposing for cost-efficient delivery of brand campaigns.

AI IN MARKETING at a glance:

- Providing better insights and suggesting actions upon data
- Providing a more detailed analysis of campaigns
- Identifying prospecting customers
- Improving user experience through interaction design
- Increasing conversion rate
- Sentiment analysis

EXEMPLARY TOOLS: Cortex, Sensai, Brand24, Optmyzr, FunnelAI, TalkWalker

AI IN SOCIAL MEDIA

Social Media turned out to be very prone to adopt machine learning. It is a perfect environment for a recommendation engine to learn, test, and improve itself. It listens to us, discovers our interests, monitors our activities to identify our habits, specifies our needs, and attracts our attention to recommended content, products, or contacts.

The combination of data analytics, AI, and social media allows us to deeply and rapidly analyze customer needs and opinions. Trends and patterns appear and enable comprehensive market research into key consumer insights.

Companies can benefit from social listening in order to see what the customers value. It allows them to look beyond the numbers to consider the mood behind the data (including images and video recognition). Continuous monitoring and analyzing moods can save the brand from unexpected, widely spread crisis on the one hand, and give it some more attention thanks to identifying and supporting positive influence on the other.

The insights help to build a relationship with the customer and sustain engagement and positive perception.

AI-powered social media tools can analyze a company's posts and posts of competitors to determine what to post for maximum effect, how often to post, and what creative is most effective.

AI can also analyze paid advertising across social media platforms then offer recommendations to improve performance based on data.

Furthermore, AI tools can write social ads optimized for clicks and conversions, thanks to AI's ability to predict, at scale, which language will improve results.

AI IN SOCIAL MEDIA at a glance:

- AI can help in improving the user's experience
- AI can predict the user's behavior
- Give a more personalized experience to the users
- AI can help you gather valuable data.
- AI can improve, recognize and delete bad content
- Monitor and predict trends
- Understand user/customer psychology

EXEMPLARY TOOLS: DeepBrand.ai, Brand24, Sentione, Specto Meter, Mentionlytics, SocialBakers, Optmyzr, Pi Datametrics, INK

AI IN MANUFACTURING

AI can successfully operate not only in digital assets but can also support physical processes. One of the applications is manufacturing.

Predictive maintenance is a technique allowing companies to monitor, evaluate, and predict equipment failures. By combining inputs from devices, sensors, and cameras, AI can estimate possible issues with high probability and prevent them. AI can recommend optimal time for maintenance, taking equipment down, and fixing it preemptively. It can also order necessary parts ahead of time. With predictive maintenance implemented, companies can reduce reaction time from hours down to a minute.

Anomaly detection is another tool, often paired with predictive maintenance. AI is responsible for detecting any credible problems during the operations of the manufacturer. By observing typical working parameters, it can learn what the nominal conditions are. Later on, using all available data from the observed system, it detects failures before they cascade into catastrophic events. AI can especially shine in production systems, where correlations between the manufacturing and production flow rates are complex.

With recent advances in computer vision, AI can also support factory supervisors with Surveillance capabilities. Typical cameras-based systems can be turned into genuinely modern monitoring solutions, with individual employees being tracked with face recognition. AI can also monitor if safety procedures are followed, hands are washed, and can check if employees are wearing face masks or hats. Any potential problem can be reported to the supervisor with a specific frame and highlight. This can especially help in a setup with many temporary workers who might not be thoroughly familiar with company procedures.

Finally, AI can also help with inventory management. Costs of storing inventory can reach 20-30% of the total cost of a product. AI can recommend optimal time to sell or hold inventory, track storage capabilities. It can even be responsible for controlling the rate of production to maximize revenue. At the same time, AI can also track market prices and economic indicators, and predict the optimal time to buy supplies, improving stable production and supply chain.

AI IN MANUFACTURING at a glance:

- Lower costs with Predictive Maintenance
- Avoid downtime with Anomaly Detection
- Monitor safety of employees and procedures
- Optimize inventory costs and supply chain

AI IN FOOD PRODUCTION

AI can also be applied specifically in the Food Production industry, which can benefit from advances in deep-learning, especially related to vision.

Food sorting can be quite tricky, especially since food comes in diverse forms, shapes, and sizes. Fortunately, Convolutional Neural Networks connected to cameras can accurately detect multiple types of food and help with preliminary sorting. Such a solution could free up human workers for other tasks.

AI can also handle both quality control and food safety areas. Using a combination of chemical sensors and cameras covering both visible and UV-spectrum, AI can enforce that both ingredients and processed products are within acceptable standards. It can also detect possible contamination or foreign objects, increasing the safety and quality of produced goods.

Food production is not only about taste - but it's also about the physical design of its container. AI can enhance the designer team with new ideas for cover materials, colors, and patterns expected to increase sales. Prompt for AI can be as simple as some text describing the original design or other requirements. The system will provide several proposals, from which the human team can pick the best one.

AI can also predict customer behavior, which can be especially useful when proposing new product variants. Recommendation engines can find a niche that could be explored and how users will endorse the new product in that niche.

AI IN FOOD PRODUCTION at a glance:

- AI can perform food sorting
- AI can improve quality control
- AI can detect foreign objects and increase food safety
- AI can decide on new variants and product design

AI IN PHARMA

The Pharma industry can benefit from AI, especially with its capabilities in helping in the drug design process. With the typical time for new drug development being cut from five years down to one year, the potential is enormous.

Creating new drugs is a complicated and time-consuming process. Only around 1 in 8 trials end up with a successful release of a new drug. AI can increase those odds by performing preliminary filtering of the most promising solutions. Vision-based solutions can analyze the effects of new compounds and their impact on cells.

NLP-based solutions can be applied to sift through medical literature and the newest papers to find correlations of drugs that haven't been utilized yet. This novel approach is possible since AI can process orders of magnitude more text than human employees. Narrowed down proposals can be later on passed to a human team for actual tests.

Machines can also help in genomics studies, identifying active structures and narrowing down DNA regions responsible for genetic diseases. Large datasets can be mined with the help of AI to have a better understanding of how different mutations affect us. Eventually, we can expect to have new drugs specifically designed to target specific genetic variants.

AI IN PHARMA at a glance:

- AI can help design new drugs
- AI can find new molecules and predict their interactions
- AI can quickly sift through available medical data

About us

#BeForeverDigital #GoBeyondTechnology #SparkInnovation

Webellian is a privately owned French-Polish company founded in 2012 with headquarters in Warsaw, Poland.

Our international culture supports the Digital Transformation of big brands and global corporations, trusting us with their complex IT projects. Webellian is a fully integrated Digital and IT consulting firm helping its clients to face today's challenges and tomorrow's uncertainties by building long term partnerships and sustainable solutions. Our expertise ranges from bespoke software development to building Cloud solutions, from creating data solutions to building complex ML models.

With our passion for innovation, technology, and excellence, we empower you to move confidently forward on your Digital Transformation journey.

Today, we know that we will be forever digital and that we will have to go beyond technology. Where should we start?