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Current State and Future Directions for AI Research in the Corporate World

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ABSTRACT

The purpose of this study is to survey recent work on AI in corporate settings and to suggest directions for further investigation in this area. This article first describes the historical development of research on AI in business by analysing 404 relevant papers retrieved from Web of Science and Scopus. It then goes on to highlight key publications in the area and the top venues for publishing AI-related research. The last step was to thoroughly examine the literature for latent subjects using a text-mining method based on Latent Dirichlet Allocation. The results show that there are 18 distinct areas of AI study, with four major groups forming: AI systems, AI techniques, AI social effect, and AI organisational influence. Robots and automated systems, the integration of the Internet of Things and artificial intelligence, ethics, and the law are among the many topics covered in this study's presentation of key developmental trends and the problems they pose. Lastly, a research agenda is put out to steer future business AI research in a way that addresses the trends and issues that have been discovered.

Introduction

Businesses, economies, and societies are being transformed by artificial intelligence (AI), which is changing the way stakeholders and citizens interact. The ancient Greeks and other mythologists may have laid the groundwork for artificial intelligence by suggesting that automatons had feelings and intellect. Artificial intelligence (AI) was supposedly born at a workshop in 1956 at Dartmouth College in the US. Since then, other branches of study have contributed to AI research [1-8]. Despite significant progress in AI research, most of it has been conducted in silos with little interdisciplinary exchanges. For example, computer scientists have created sophisticated deep learning algorithms, social scientists have been debating the legal and ethical implications of AI, and business management scholars have examined how AI will affect customers, firms, and stakeholders in a highly automated and interconnected corporate landscape. Also, nobody has been able to agree on a single definition of AI. In a recent review, we compiled four distinct AI system definitions along two dimensions: reasoning-behavior and human dimension of performance-rationality. These include, first, systems that mimic human thought and behaviour, second, systems that think and act rationally, and third, systems that mimic human thought and behaviour without acting rationally. AI systems ought to be able to do the following: understand and use natural language for communication, store information in a knowledge representation, reason autonomously (using that representation to answer questions and draw new conclusions), and learn from new situations and patterns (machine learning). Even without a universally accepted definition, research into AI's potential uses continues to proliferate. With a total of $24.0 billion invested in 2018, the global expenditure on cognitive and AI systems continued its consistent upward trend from previous years. Forecasts indicate that this investment will reach $77.6 billion in 2022. With a thorough understanding of the work done in various business domains (e.g., manufacturing to services) and disciplinary fields (e.g., marketing,

tourism, management, sociology, psychology, etc.), AI practitioners and researchers will be better equipped to drive future advancements in research on AI's business applications, which frequently necessitate a multidisciplinary approach. Researchers will have a solid basis to prioritise their study with such a complete understanding looking ahead to the latest AI developments and posing important research issues for the future.

Methodology

areas of focus and experts in the field to direct efficient investment in critical areas of AI for companies [9–18]. The use of artificial intelligence (AI) in business has been the subject of numerous attempts at a comprehensive literature review. One such study aimed to systematically map the diffusion stages of BI&A implementation, with the hope of informing future research on the often-ignored post-adoption stages. gather information on banking-related literature covering the years 2002–2013 with an emphasis on business intelligence (which makes use of certain AI algorithms for predictive analysis). explore the literature on artificial neural networks (ANNs) and their commercial applications over the past 20 years and discover that the majority of the papers deal with expert systems and their practical uses. The last step is to review the relevant literature in the International Journal of Information Management in order to pinpoint problems with AI decision-making in the big data age, as well as to propose solutions, such as theoretical advancements and AI applications. These endeavours shed light on the state of AI and business research generally, but they zero in on particular uses[19–35]. In light of this deficiency, the present study sets out to fill it by surveying the literature on AI in business, taking stock of the field's history and current level of knowledge, and looking ahead to spot emerging patterns that could guide researchers in the right path. Specifically.

A collection of articles addressing AI was culled from the online libraries of Scopus and Web of Science in order to determine the most pertinent literature for this review. Publications in peer-reviewed journals pertaining to business that contained the words "artificial intelli-gence" or "artificial-intelligence" in the title, abstract, and keywords were chosen for this study. brings up the search terms for every digital library.

The following databases were consulted: Scopus (900 publications) and Web of Science (805) for journal articles. On first glance, the 1488 articles cover a wide variety of subjects and appear in a wide variety of periodicals. There were still a lot of papers on other subjects, even when I narrowed my search to publications about business. As a result of a manual evaluation of the abstracts, 27 papers were deemed excessively focused on related subjects, such as applications on pedagogical education, 29 articles were deemed to be too focused on algorithm development, and 903 articles were deemed to be discussing technical issues surrounding engineering rather than business implications. Following this first screening, a systematic analytic technique was used to examine the entire texts of 529 publications that were deemed possibly relevant. The full text screening process was carried out using four criteria: validity, reliability, credibility, and integrity. Two researchers independently identified the relevant articles based on the quality criteria and categorised the papers according to the intended investigation topic: AI in Biz. In order to settle disagreements regarding Cohen's Kappa, scholars met to discuss value is more than 0.86.

Descriptive Analysis of the Literature

The literature on AI in business-related categories started in 1977 with a first study published in Futures journal that examines how AI was applied to challenges in medical. In fact, Futures is the publication that accumulates the biggest number of papers covering the implications of AI in business categories (20), followed by the publication of Operational Research Society (19), and Expert Systems with Applications magazine (10) publication was the only one published between 1970 and 1979 that fulfilled the enquiry in the current investigation. Papers on the potential consequences of AI proliferated in the decades that followed. Of the articles published between 1980 and 1989, 43 were eligible; similarly, in the 1990s and throughout published seventy papers throughout the first ten years of the new millennium. Over the past between 2010 and 2019, there was a rise in the number of papers published on AI in business categories. The collection now includes 220 publications, ranging from 36 to 58. Moreover, articles were categorised based on the business applications that have been influenced by AI. The majority of AI studies are influencing policymaking uses for long-term planning inside institutions including businesses and governments (48 papers), industry (48 papers), general public (37 papers), and financial markets (33 papers). Furthermore, there are a total of 24 articles pertaining to tourism and hospitality, and 43 papers pertaining to marketing and retailing.

Evaluation of Reference Networks

We used reference network or citation analysis to find the foundational works on AI in business. To begin, we gathered all of the references used in the papers and built a citation index; we then deleted any referrals to websites that did not have authors or titles. Using the Gephi programme, we connected each publication (a node) to its referenced references. The next step was to fine-tune these connections, or edges. The purpose of merging duplicate citations is to ensure that each target citation is associated with a single, unique source document. With a total of 13,241 nodes and 13,869 edges, the directed graph was complete. The "giant component" filter in Gephi was also used to filter out unrelated nodes. Finally, the in- degree (the number of citations from the gathered publications pointing to each cited work) for each node was determined.

Analysis of Topics

Model, it's possible for a single paper to cover more than one topic (many debates covered in the text). Possible explanations for the low posterior probabilities of the individual papers in this situation include strong topical connections. Each topic's profile was created by reviewing and discussing the papers that had the highest posterior probability of being about that topic. A number of themes emerged from the analysis of the 18 topics, including: the potential societal effects of AI, the effects on organisations, the systems used, and the methodologies discussed. So, to categorise the representative research fields in AI for business, the designated AI systems, AI techniques, AI societal impacts, and AI organisational impacts are the four primary groups into which the topics are grouped. In the sections that follow, we will examine and discuss the substance of each cluster and topic.

How AI will Affect Society

The first grouping, "societal impact of AI," includes subjects like "robots in society," "law and regulations," "marketing," and "social and digital impacts," all of which deal with questions about the ways in which AI is impacting society. Mechanical beings. Several articles touch on the subject of artificial intelligence robots and its societal ramifications, particularly in the service industry. Machines that can carry out complicated sequences of actions are called robots. Interacting, communicating, and providing services to an organisation or clients are the functions of service robot systems, which are interfaces that are autonomous and adaptable. These systems can learn from past experiences and become connected and embedded into a bigger system via knowledge bases and cloud-based systems (.Service robots can integrate local input (e.g., through cameras, microphones, and sensors), data from a wide range of other sources, such as the internet and organizational knowledge system, as well as biometrics information of customers (e.g., through facial and voice recognition systems) to identify a customer and provide him/her with highly customized and personalized services . This collection of articles on AI robots and integrated robots contrasts human-robot interactions in customer service, pointing out where people excel and where machines may do a better job. The employment of artificial intelligence robots has the potential to become dysfunctional in the not-too-distant future, leading to a host of mental health problems in humans, according to some new research. In sum, as a warning, researchers and thinkers argue that the use of AI robots can have a huge impact in society, not only because they will be more embedded in service encounters, but they can also put themselves and human beings at risk, become capable of performing creative tasks (thus leave nothing for human beings), and achieve the same level of intelligence of human beings Law and rules. From the 1980s, continual work has been increased the amount of studies examining AI laws and regulations, and worked to create expert systems with a focus on law. Some research has tried to analyse and explore whether the law should handle the "right to be forgotten" in relation to artificial intelligence memory (i.e., if people may ask for the deletion of publicly available information about themselves), while other studies have looked at the opposite technological issues, a lack of multidisciplinary research in support of privacy laws, and in 2016 the White House, the European Parliament, and the House of Commons of the United Kingdom all released papers outlining their plans to get society ready for the massive usage of artificial intelligence. Here we examine and contrast these three studies. The three reports have a common thread: they all argue that AI will have a positive effect on society and the economy, and that it will be open and accountable. From a high level perspective, the US report stands out from the rest due to its comprehensive research and development (R&D) strategy, which bolsters its recommendations. A "less light touch" approach to AI and robotics governance is reflected in the a number of legislative proposals and the establishment of a "European Agency for Robotics and AI" that the EU reported on. The report from the UK states that new regulatory frameworks should be developed. ends by saying that: "In the presence of such remarkable technology it's easy for people's lives to become skewed when they conform to rigid technology, follow their own predictions in artificially created bubbles, or are lumped into unchangeable stereotypes. Our new smart technologies must be designed to support the human project, not hinder it marketing. When it comes to artificial intelligence, the marketing industry is among the most advanced. Some of the topics covered in discussions about artificial intelligence (AI) in marketing include:

how AI can help predict whether a customer will spend more or less money after making a purchase, how AI can personalise recommendations on online stores, the importance of gender in virtual workforces, the relationship between AI and public relations, and the potential for AI-like technologies to operate autonomously, making decisions and taking the initiative, potentially altering the dynamic between companies (with machines taking the role of frontline employees) and their customers [59–75]. Influences on society and technology. This topic's articles explore the potential of AI to drive sales in retail and financial settings through its evolution in social media applications. Online platforms and systems can distort the content of traditional documents like books, newspapers, and legal documents. This can change the past and eventually spread bad practices and criminal thoughts, which is one of the negative impacts of AI discussed in the papers.

The Effects of AI on Organisations

The organizational impact of AI cluster aggregates topics on AI impact on work, manufacturing, knowledge management, decision supports, fuzzy logic approach, and risk management. Work impact. This topic is associated with studies that suggest how work will be transformed using AI and other technologies and how such technological innovation generates impact to the organization. As sug- gested, businesses should fully use and enable people to become totally engaged in their job by providing general roles and particular responsibilities. Other studies argue the necessity of using AI in organizational decision, project, and business settings, and how AI affects the nature of work and the employee-machine connections call to the importance of preserving important skills for people in firms that utilise AI. Among them are the following: the ability to think critically and creatively; the management of people; the ability to coordinate with others; the ability to make sound judgements and decisions; an emphasis on service; the ability to negotiate effectively; and cognitive flexibility. According to the papers taken as a whole, AI will foster an entrepreneurial spirit and a sense of initiative within companies. When it comes to marketing goods and services, AI systems can produce convincing communication with workers, capture the fundamentals of communication simply, generate new knowledge by stimulating curiosity, and design questions that help to issue solutions. Producing goods. With the fourth industrial revolution, marked by the usage of AI and other technologies, production (industrial) may become the major source of wealth and creation of new employment in industrialised nations , such as the case of the Russian Federation. AI contributes to optimizing the quality of production system and subsequently the quality of prod- ucts ; AI also enables for manufacture of highly configurable goods .From this topic develop the notion of case-based experience reuse, which refers to systems that save time, increase predictability, and decrease risk by allowing diverse workers working with standard production models to reuse their experiences or by contributing to an effective experience transfer system. When workers leave or businesses have to cut back, for instance, a lot of institutional knowledge goes with them. Training is necessary for new employees, and they may make the same mistakes again. An AI agent can help businesses avoid this kind of trouble. An agent is defined as anything that can sense its surroundings through sensors and respond to those surroundings using effectors. Thus, an agent may be a computer system that

interacts with employees, possessing features, such as autonomy, social abilities, responsiveness, and proactiveness.

Knowledge management. Ai is making an appearance in systems like lean supply chain, which are concerned with the systematic management of an organization's knowledge in order to generate value via projects, procedures, tactics, and systems that support and improve the storing, sharing, refining, and creating of aid in making decisions. "He worked with Newell to create a new science of AI which set the ground for studying human thought patterns using computational models" (p. 511). This topic emphasises the significance of decision support and good decision making that integrates technical, human, and organisational systems to achieve the strategic success of an enterprise. It also highlights the excellent value and contribution of Herbert Simon to decision making processes within economic organisations.

Fuzzy logic method with risk management. The organisational impact cluster concludes with a collection of studies on applying artificial intelligence and fuzzy logic to enhance product quality and decrease failure rates in manufacturing. As an alternative to the conventional true or false (1 or 0) Boolean logic, fuzzy logic allows for computations to be based on degrees of truth. So, according to Fuzzy logic, a variable's truth value can be any real integer between zero and one. Both the automotive and healthcare industries make use of fuzzy logic. According to the articles, this method aids in quality improvement by means of risk assessment, appraisal, and control.

Artificial Intelligence

Enterprise artificial intelligence (AI) systems, including expert systems, systems design, and information infrastructure, are all part of this cluster of related issues advanced computational framework. The expert system, a repository of factual information and heuristics, is the subject of this discussion. Facts are pieces of knowledge that have been extensively researched and are available to the public. The quantity and quality of an expert system's knowledge base determine its performance level. Statements with if-then clauses are used in the fundamental knowledge rule. The "if" stands for a set of circumstances, and the "then" (the conclusion) is deduced when those requirements are met. Thus, the invention and enhancement of AI algorithms [90-108] are the subjects of these papers.

The design of systems. The subject at hand is the incorporation of AI into the design of adaptable production systems.

.Flexible manufacturing systems (FMS) and group decision support systems (GDSS) are built to enable intelligent tools including neural networks, fuzzy systems, and expert systems. In the automotive, nuclear power plant, and other industries, for instance, businesses can anticipate how operational systems will perform under various decision-making strategies by using visual interactive simulations and AI simulated representations. This helps them to search for improved strategies.

The system that supports and facilitates information. Articles in this topic range from [76–89] and cover topics like building expert systems to serve as a bridge between businesses

and the general population. The four sub-technological fields that make up artificial intelligence are as follows: problem reasoning and solving, machine learning, network structures, and knowledge processing systems. The former two involve a particular circuit arrangement for approximate reasoning, while the latter two use possibility distributions to represent truth values and quantifiers. Machine learning has the capability to automatically add to its current integrated collection of facts and relationships. Network structures deal with the construction details of processors and their interconnections, while knowledge processing systems apply a reasoning technique to specific domain data. Performance in the four sub-technological domains of AI, such as disseminators and catch-up players, can decide the responsibilities of each nation in the network as AI contributes to the knowledge economy. By developing expert systems that enable many stakeholders to interact internationally for sustainable causes, AI systems can help ensure that current demands are met without jeopardising future generations' capacity to do the same (i.e., promoting sustainable development). Global staff recruiting is another area that might benefit from these methods.

Techniques for Artificial Intelligence

Forecasting, data analysis, learning, artificial neural networks, and problem solving are the six subjects that make up the AI Methodologies cluster, all of which are related to the methodological approaches utilised by the organisations methods. This topic explores the potential of incorporating AI into intricate methodological approaches to forecast market shifts and examine client attrition, making a valuable contribution to the marketing domain. Machine learning, text mining, aspect sentiment analysis, fuzzy logic, memory-based reasoning, data mining, and neural network-based algorithms are all examples of such approaches. Researchers have shown that by analysing statistical time series models and grey theory with AI algorithms, they can better forecast things like consumer behaviour, air quality, and tourist arrivals, all of which are useful for market planning.

Analysing data. Research in this area considers potential improvements to data analysis methods, such as methods for handling massive volumes of company data, utilising rough set theory to handle, and extracting crucial information from embedded data.

Deep learning systems. Publications in this area rely on neural networks' predictive capabilities to foretell how customers would react to direct marketing campaigns, as the name implies, and on semantic networks to issues with neural networks' forecasting abilities driver conduct is one example. Novel artificial intelligence systems, such as eXplainable AI and generative adversarial networks (GANs) to fuel potential future uses the literature on artificial intelligence (AI) is extensive, yet prior research has failed to adequately address several issues and managerial consequences. Looking via SCOPUS and WoS utilising AI-powered instruction derived from practical experience come together, world rulers! Artificial intelligence: possibilities and threats progress and organisational learning and business horizons I found eight foundational publications when searching for papers on AI developments from 2018 to 2020 in the Business topic area. In this case, we utilise these tendencies to show how AI may influence various parties inside an organisation. In accordance with stakeholder theory the present and future effects of AI on companies go

over some of the ways AI might influence (1) internal stakeholders, such workers and managers/owners, and (2) external stakeholders, like customers and suppliers, who are affected by AI's impact on enterprises (2) those outside the company, for whom there may be ramifications of AI developments in the future details the process for creating a pattern for communicating messages educating oneself. Multimedia learning, online education (including instructor training and course integration), and strategies for solving game theoretic models are all included in this collection of publications problem solving. This group discusses search strategies, issue formulation, and alternate solutions to operations management challenges that use artificial intelligence algorithms.

Looking ahead to AI Trends: Implications for Stakeholders

Businesses have begun to advance in data science and business analytics in response to the proliferation of consumer data and information originating from the internet of things (IoT). The four stages of business analytics maturity identified by Gartner are as follows: (1) a more descriptive use of information; (2) diagnostic analysis, which means understanding the underlying causes of a specific outcome; (3) predictive analytics, where companies use data mining algorithms to forecast future events; and (4) prescriptive analytics, which uses advanced optimisation and artificial intelligence algorithms to advise the company on how to implement changes in the near future. In spite of all the big data that has been collected and kept, 87% of the world's organisations were still deemed to have poor analytics maturity as of the end of 2018. Data scientists, who can evaluate large amounts of data and find ways to utilise it to benefit businesses, are still hard to come by. Data mining algorithms, on the other hand, are improving in both speed and accuracy. However, conventional analytical routines

The emergence of new algorithms has not stopped companies from effectively utilising ANNs and similar technologies to tackle issues like fraud detection customers, suppliers, society, the government, and other interest groups can all be potential sources for the firms [109-118].

Individuals Inside the Organisation with a Vested Interest

Staff Members

People frequently bring up AI when talking about how the workplace will change in the future. One day, agents powered by AI will take over mundane jobs and do them more efficiently. Consequently, automation will generate new job categories while eliminating millions of others. The initial wave of AI's influence on the workforce assumed that creative occupations would be immune to the technology's eventual eradication. Some academics contend that AI will never fully capture human imagination and that a new "Feeling Economy" centred on feelings, empathy, and interpersonal relations will be the engine that generates new jobs. On the other hand, there have been recent demonstrations of AI systems that engage in "creative" activities, such as making their own music and artwork. The ability of AI agents to learn from human assistants would greatly enhance their capacity to generate novel, inventive ideas that may be implemented in many professional contexts. As a result of AI systems' improved comprehension of patterns of job completion and creative

processes, smart workplaces may be created, which can lead to safer working conditions and more convenience. For instance, exoskeletons equipped with artificial intelligence are already helping human workers at Hyundai and Mercedes-Benz complete the most repetitious jobs more efficiently. Additionally, smart systems are changing the face of industry. Actually, within many medium-to large-sized businesses have already used industry. A concept having origins in the writings of, "smart manufacturing" stands for interconnected systems that react instantly to demands from the production facility, the distribution network, and the end user. Through the use of interconnected sensors, the Internet of Things (IoT) will make it easier for businesses to measure operational effectiveness. By enhancing its screening process, Nature Fresh Farms was able to cut packing times for its fresh products from 35 seconds down to 8 seconds, demonstrating how the firm is already reaping the benefits of integrating IoT with AI as an added bonus, AI systems can learn from their mistakes and successes across all decision layers, leading to improved solutions like new, innovative ways to manufacture aeroplane parts or entirely novel conceptual designs (like the ones created by PTC-Frustum's AI systems) [119-124].

Automated Workers

These days, robots can use their senses to figure out how to behave in real life. As a result, artificial intelligence agents integrated into robotic systems are undergoing evolution just like humans are, learning to walk, avoiding obstacles, and mastering complex human skills. Additionally, human-AI interactions are improving, allowing AI agents to learn more quickly by seeking (human) assistance when they encounter limitations, similar to how humans evolve. In due time, the production cost of AI-powered automated systems like self-driving vehicles and customer care bots will decrease, allowing them to be more widely used. Another development is the emergence of a new class of consumers: AI agents. These agents will play an increasingly important role in our everyday lives, whether as factory workers or customer service representatives, and they will function as masters in the connection between humans and objects. For instance, if a smart gadget or robot were to incorporate artificial intelligence (AI), it might search, filter, select, and purchase a set of items on its owners' behalf without their knowledge or approval, simply by mimicking their patterns of behaviour.

Top Brass and Proprietors

Companies are already utilising AI systems to assist managers in hiring new employees, so the prospect of a hybrid workplace is not far off. What this means is that managers and owners will need to adapt their strategies to meet the demands of a diverse workforce. Even though it's still in its early stages, automated systems based on AI are known to be substantially less biassed and more objective than traditional human-based recruiting. For instance, Unilever has been using HireVue to effectively analyse and survey thousands of potential internship candidates, while L'Oréal has been employing a comparable strategy to recruit international candidates and has seen a 90% reduction in the time needed to screen a candidate. The usage of brain-computer interfaces to improve managerial and staff members' cognitive abilities may become a trend in the far future. Recent years have seen a proliferation of brain-computer interfaces (BCIs), which enable users to control electronic

devices (such as smartphones or AI) by means of electrical impulses sent by the brain. But future technologies will also depend on bidirectional brain wave collection and deep brain stimulation (DBS) for human brain interaction. Although DBS has been around for a while and has applications in neuroprosthetics and neurological treatment, its development has opened up new avenues of use in areas like memory improvement and immersive worlds. Commercial BCI uses have clear advantages, but there will be many ethical concerns with its future and possible applications. One major concern is that BCI could give rise to a new hybrid species, Humans 2.0, with significantly greater intelligence than the previous "natural" generation. As a more intelligent workforce has the potential to control society, this cognitive difference will have substantial repercussions for businesses.

Transhumanism is a movement that "understands and evaluates the opportunities for enhancing the human condition and the human organism opened up by the advancement of technology." The incorporation of neurostimulators and nanochips into the brain enhances the human organism, leading to the eventual creation of hybrid humans. Transhumanists believe that humans are limited to a range of feelings, thoughts, and experiences, which can be enhanced by incorporating technology. The subjective well-being of individuals and the enhancement of organisational performance are the intended outcomes of such capacity building initiatives. Personal attributes, emotional states, and life experiences all contribute to an individual's subjective well-being. When people's cognitive, emotional, and physical capacities are enhanced, they are better able to deal with adversity, realise their dreams, and enjoy life to the fullest. For trans-humanistic technology to gain acceptance, people will need to go through an engagement process. People may shy away from these technologies out of fear or insecurity since they are so revolutionary and invasive.

Businesses involved in developing transhumanistic technologies it will be difficult to engage people in the cause by allowing them to participate actively throughout the whole new product development process and by openly describing the possibilities, advantages, and ultimate shortcomings of these technologies. Regardless, organisations can only help improve human well-being and work performance through internal and external engagement processes with all stakeholders, including consumers. According to the research, workers who buy into the company's vision and values are more invested in its success.

In light of these previously announced developments in the field, we classify the first emerging trend in artificial intelligence as Robots and Automated Systems, and the second as Brain-Computer Interfaces (BCI) and Deep Brain Stimulation (DBS).

Outside Parties Involved Customers

How businesses are getting ready for a society run by AI was covered in the last part. Companies' interactions with customers are already being impacted by these shifts in the business landscape. As an example, in the near future, powerful AI assistants will be the standard, presenting new methods of delivering and consuming services. One example is Google Assistant phoning a restaurant to arrange a reservation. Consumers will embrace AI technology (including BCI for cognitive enhancement) to decrease repetitive activities and increase hedonic/aesthetic experiences, according to the self-expansion model and the

extended-self proposal. Conversica, which enhances customer support during decision-making, and Replika, an empathic AI chatbot that learns from its owners' behaviour, are two examples.

Suppliers and Society

There will be new consequences for as the Internet of Things (IoT) and artificial intelligence (AI) continue to evolve into sophisticated cyberphysical systems our daily routines. They say that in the not-too-distant future, all the things we use every day will be linked. Cities can only benefit from better management and more sustainability if the massive amounts of real-time behavioural data generated by these networked devices are analysed using artificial intelligence algorithms. It is anticipated that smart systems will discover novel approaches to optimising city people' daily life as AI advances in intelligence. With the growing importance of integrating Big Data information to enhance customer service and industrial efficiency, the relationship between firms and suppliers must also take this trend into account. In keeping with these foreseen developments in the literature, we pose the third AI trend in terms of the integration of the Internet of Things and AI.

AGENCY: Morality and Legislation

The goal of developing deep learning was to make better predictions by seeing and analysing data from real-world scenarios. Nonetheless, the networks are mostly opaque due to the hidden layers inherent in them. On the other hand, new AI methods developed inside the eXplainable AI (XAI) framework are opening the door to AI-powered transformative applications in the future. More study is required to convert AI language to human language, while experiments have been done to make AI's complicated learning processes more transparent. It is not enough to just resolve the issue of how AI systems and humans communicate; a comprehensive rights charter outlining the responsibilities and duties of AI systems and robots must also be developed and authorised by a global regulatory agency like the UN. For example, in the event that AI systems or robots do physical injury to third parties (such as humans, AI agents, or hybrid entities), the rules controlling citizens' tort and culpability obligations should be reevaluated and maybe expanded to encompass AI systems. Along the same lines, AI systems should be able to claim intellectual property and be obligated to pay taxes whenever they create or use products or experiences. There is a rising fear that humans may lose control over AI's progress as it gets smarter, even if organisations like AI for Humanity and the Institute for Ethics in Artificial Intelligence are working to establish some of these best practices. The advent of a highly intelligent society comprised of AI agents and hybrid humans has the potential to bring about significant socioeconomic and environmental changes, as well as great advantages. At the point of singularity, when artificial intelligence (AI) surpasses human intellect, maybe in the next several decades, HI will happen. But in order to be ready for what's to come, we need to talk about potential dangers and setbacks now. The degree to which HI is dependent on such intelligent systems, the absence of transparency, the possibility of prejudiced and unjust treatment by self-learning systems, and the lack of safety of future AI systems are all examples of such hazards. A two-way approach has mostly dominated proposals for imposing machine ethics on future systems, with talks likely to pick more steam in the coming decade. The first suggests that

these ethics should be gleaned from AI systems that learn from society's moral behaviours and laws in the past, while the second suggests that a new set of universally accepted moral principles should be built into all AI systems from the start. There has been a recent shift towards a hybrid model that incorporates both hard and soft ethical principles. Our fourth AI trend is framed within the areas of AI integration, law and ethics, and following such anticipated developments in the literature.

Conclusion

Artificial intelligence's wide range of potential uses in various industries has made it a hot subject among academics and professionals in the business world as of late. Previous studies have highlighted the importance of doing more research within the four indicated issue groups to advance our understanding and inform future actions. I. How businesses should rethink their organisational structure, job descriptions, and skill sets in order to train the employees of tomorrow (the students),

(ii) the evolving social function of robots and the ethical and legal concerns surrounding citizen data privacy; and (iii) the potential emergence of new methodologies capable of making more accurate forecasts about the future. raises a number of pertinent questions that could lead future studies that attempt to resolve these issues. This study makes a double contribution. An organised review of the previous few decades reveals the changing nature of AI's consequences for business. Such an addition may serve as a roadmap for other scholars interested in AI to follow when doing their own literature reviews. Furthermore, the most current research in the field has sparked discussions about potential trends for the future. In addition, we present a list of open research topics that originate from the most current trends. The suggested issues may remain unanswered for some time, even after utilising previous research to propose new routes, because the rate of AI progress is unknown..

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