

AI Business Model: An Integrative Business Approach

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Abstract

Artificial Intelligence is the ecosystem's prevalent and most comprehensive general knowledge and common-sense cognitive engine. The Artificial Intelligence (AI) business platform model is virtually at affluence with cloud SaaS model. It concerns AI solutions that can work together on top layer of the other digital systems, like a Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) business system. AI admittances in digital data fluid through these coordination, fueling business enhancements over phase. In this business model, the business will safekeeping a recurrent subscription. This study endeavors to emphasis on the preemptive side of the use of AI and Machine learning (ML) technology to enterprise digital platform business model innovation and business dynamics.

1. Introduction

Artificial intelligence and Machine Learning models are computational and mathematical algorithmic model which executing trained data and humanoid experiences input to produce a decision an expert would make when provided that same information (Yorks, et al., 2020, González-González et al., 2014, Alhashmi et al., 2019, Gentsch, 2018a). In other sense, Artificial intelligence (AI) is the capability of a processor to accomplish jobs that are analogous (at least in a limited sense) to that of human wisdom and decision production (Yoffie et al., 2016, Antón et al., 1994, Eiteman et al., 1989, Alhashmi et al., 2019, Dimitras et al., 1999). In the 1950s, John McCarthy think up the term 'artificial intelligence' and Marvin Minsky was a well-known scientist of the field (Antón et al., 1994, Burgess, 2018). A model attempts to do from scratch a specific decision method that a group of specialists would make if they could analysis all existing data (Fountaine, et al., 2019, Eiteman et al., 1989, Burgess, 2017).

Artificial intelligence (AI) has been changing businesses as proven by Airbnb, Ola, Uber, Flip cart, e- Bay, Amazon, Mantra etc and other enterprises that have incorporated its use to instrument state-of-the-art business models (Fountaine, et al., 2019, Mishra et al., 2019, 2019a, 2020a, 2020b). This embryonic and quickly advancing technology impacts digital platform business model innovation (Arnold et al., 2018). Although many businesses are being made exposed to new entrants armed with this technology. Unfolding AI technology as the promoter of digital business model innovation, this study outhouses graceful on depending issues influencing digital business model innovation start up through evolving technology (González-González et al., 2014, Mishra et al., 2019, 2020 a). The goal line of Artificial Intelligence in business is to lookout advance cutting-edge research in the fields of AI and Machine Learning, as well as interrelated arenas like Cryptography, Cryptocurrency, innovation to develop way out that are utmost impactful to the business's customers and industries (Corea, 2019 Mishra, 2018, 2019). On this way Continuous intelligence (CI) is a design pattern in which on line real-time data analytics are cohesive into business processes, meting out contemporary and chronological data to advise movements in comeback to business ticks and other significant measures (Charif et al., 2014). Applied Intelligence is a smarter, faster and more effective approach to collecting, processing and analyzing data, creating insights which help identify clear opportunity to act on and automating those actions where possible to unlock business significance ((Corea, 2019, Yorks, et al., 2020). It is advantageous for businesses to gaze

at AI from side to side the lens of business proficiencies rather than expertise with technology. AI can upkeep three significant business essentials (Yorks, et al., 2020, (Fontaine, et al., 2019): Computerizing automated business process from back office executive and business activities, acquisition of intuitions through data scrutiny, breakdown, data analysis, performance metrics, and engaging with consumers and workforces (Corea, 2019, Burgess, 2017). Data and Knowledge, learning from experiences, Reasoning and Planning, Safe human interaction through AI technology, Multi agent systems, Secure and private Artificial intelligence communication and Machine vision and language processing are some of the Key hub of Artificial intelligence (Fontaine, et al., 2019, Burgess, 2018, Schultel et al., 2017). These things with its significant landscapes can be pictorially represented as below.

The rest of the paper is organized as follows. Section 2 summarizes the literature review on AI business model ecosystem. In sec 3 we discuss about the future trends of platform business model optimization. Section 4 studies the business model challenges. Section 5 explores the business model transformation while Sect. 6 discuss about the security and privacy terrorizations. Section 7 deduce the results and discussion and finally Sect. 8 concludes the paper.

2. Literature Review

From the invention and advertising, promotion, marketing, selling age is synchronizing with platform business model and artificial intelligence and growing over the periods (Armour, et al., 2020, Mishra, 2018, Mishra et al, 2020, 2019). The exponential growth of artificial intelligence and cloud computing step up the connotation of thoughts, design, innovation, opinions, cognitions, beliefs, feelings, and appreciation (Fontaine, et al., 2019). Therefore, the opportunity of growth of AI business models becoming more and more over the years (Armour, et al., 2020).

Now a days companies are using data intelligence to flourish their business along with artificial intelligence. Data intelligence is a dynamic part of any establishment's energies to recover the amenities and revolutionary state-of-the-art policies they pay (Charif et al., 2014). One of the most conjoint uses of data intelligence is to cognize customer inclinations (Muthuveloo et al., 2013). By using data mining techniques to collect statistics regarding habits, shopping preferences, buying behaviors, price tagging preferences, color choices, style preferences online trends, and other individual information, enterprises can mold their services better and comprehend affinities across their bull's eye demographics. The structure of data intelligence is depicted as below.

Artificial Intelligence (AI) is now competent enough to rebuild the business strategy and trade across the globe. Industrialization and emergent growth of technology innovation, synchronization of different communication channels through 4G LTE, 5G technology immense the business culture. From the last few decades Artificial Intelligence (AI) and Machine Learning algorithms becomes ubiquitous in business arena and solve many cutting edge business applications and create knowledge based portfolio for upcoming businesses (Ferrario et al., 2019, Samsung, 2020). On the consequences, AI has helped many business to improve the manufacturing cost, productivity, technological synchronization and automatic

update and solve the global economy on the business earth (Armour, et al., 2020, Furman et al., 2019). Nowadays, business management and its executive part is undergoing basic changes and applying business process engineering all over the globe (Burgess, 2018). One of the key challenges almost all executives face today is that of allocating with and treatment digital transformation in their originations (Fountaine, et al., 2019). This is a force that is modeling business and the intact competitive business landscape. Executives are fronting this challenge with capricious degrees of gusto. The business technological metrics which help to express specific and mutual attainment in emerging AI competences for industries. Admitting this evolving genuineness, Risk Group introduced a much-needed conversation on Artificial Intelligence for Business on Risk Roundup (Ciuriak, 2019, Ferrario et al., 2019).

Research Question- *How Artificial Intelligence and its associate Machine Learning and Hologram technology renovating business ecosystem and how it revolutionize business platform and commerce ecosystem in coming generation?*

In this paper we are trying to explore the solutions of these questions which is the need of the times.

3. Future Trends Of Platform Business Model Optimization

The technology is developing very fast which naturally impact the business culture, business modeling, platform scaling, selling and buying behavior and even the communication trend for business (Huang et al., 2003, Xu et al., 2018, Dimitras et al., 1996). With the swift enlargement of a new age bracket of information and communication technology such as cloud computing, Internet of Things, big data, mobile Internet, artificial intelligence, etc. and its uninterrupted in-depth applications in the business and industry the period of intelligent manufacturing is coming (Xu et al., 2018, Schultel et al., 2017). Simulation optimization and scheduling in intelligent and smart business has through productive realizations both in principle and practice (Valanarasu, 2019). Artificial intelligence has a great role in business modeling and platform business (Åström, 2020, Aldinucci et al., 2018, Morley et al., 2019). However, there are still some potential research projections in this arena commendable to be deliberate yet to come.

4. Business Model Data Challenges

Industries across the globe are estimated to outside astonishing experiments and vicissitudes in the upcoming years (Åström, 2020, Kearney, 2002). It is understood that computerization robotics automation focused evolution will to be expected be the only perpetual in those variations (Agarwal et al., 2020, Yoffie et al., 2016). Business model impression with process and strategy is depicted as below.

In AI-driven computerization, evolution means additional intelligence from data from linked and associated devices, social platform, media platform, industry platform, data platform, and advances in business model transformation through synchronization of technology (Åström, 2020, Gentsch, 2019, Agarwal et al., 2020, Abramowitz, 1988, Schultel et al., 2017). Statistical data performance metrics, real

time data analytics, information and knowledge has been mounting at a confounding pace across the world wide (Huang et al., 2003, Dimitras et al., 1996, Lee, 2018). It is indispensable to comprehend: (i) how this innovative data-driven intelligence veracity take along per capita business across the globe an exclusively new ecosphere complete of openings and possibilities; and (ii) what the anticipated significances and magnitudes for each marketplace current and evolving would be? The digital transformation boost the economy of the world in exponentially level (Fountaine, et al., 2019, Frank et al., 2017, Lee, 2018). The pictorial representation of digital transformation can be shown as below.

Digital businesses are establishment to cognize the consequences of the developing artificial intelligence ambitious robotics automatic business ecosystem outlying tapered artificial intelligence business dynamics (Liu, et al., 2020, Gursoy et al., 2019, Abramowitz, 1988, Morley et al., 2019). The data analytics and statistical computing with high tech revolutionary artificial intelligence is convoluted (Gentsch, 2019, Frank et al., 2017, Li et al., 2006). The potency, vigor and leap of artificial intelligence driven robotic automation vicissitudes anticipated in the upcoming eons will contemporary each business encounters and breaks for its cost-effectiveness. The Orchestrator model for cost effectiveness is defined as below (Ferrario et al., 2019, Xu et al., 2018):

It will be intriguing to spectator how the artificial intelligence changes worldwide business force and clout subtleties (Chang et al., 2018, Yoffie et al., 2016, Gentsch, 2018a, Jarke & Radermacher, 1988). Framework of Business Model is described as below (Gursoy et al., 2019):

The general AI based business model can be depicted as below:

5. Business Model Transformation

As nowadays the whole things is getting linked with technology and devices over internet and intranet as well (Aldinucci et al., 2018, Morley et al., 2019). Businesses now have the fortuitous to gather more digital data, get the indispensable perceptions, and revolutionize the business and thoughts (Gentsch, 2019, Huang et al., 2003, Loebbecke, 2019). As an outcome, we will most likely to see a much-needed advancement of the marketplaces: more rapidly marketplaces, thinner set-ups and procedures, vivacious trades and businesses, mounting returns, well versed and up-to-date customers, and vigorous and self-motivated businesses (Jarke & Radermacher, 1988, Scheer et al., 2012). On the consequence, better product provide more data and more users (Corea, 2019a, Ciuriak, 2019, Agarwal et al., 2020). This is called artificial intelligence cycle. This AI cycle can be described and elaborated pictorially as below (Åström, 2020, Kannan et al., 2000).

These discussions generate the critical point thoughts to:

Research Question- How are business models being converted by AI?

While industries across the businesses and countries are at a poles apart side by side of AI acceptance, it appears that the contemporary line of attack to AI policy is excessively thin as businesses generally

emphasis on using AI for enlightening customer amenities, explore and analyze data, envisage performance to computerize amount of work, transaction and trading and more (Fountaine, et al., 2019, Kannan et al., 2000). The inclination of AI solicitation and adoption is not up to the satisfaction level and still not return effectively to speedily developing intelligence competences (Chui et al., 2018, Luo et al., 2019). Also, businesses every so often may short-term a business atmosphere of uncertainty and bitterness towards each other within corresponding businesses and countries (Akerkar, 2019, Burgess, 2017). This may be one of the reason for data collection, analytics, and evolving information and knowledge for AI business approach. Furthermore, most of the undeveloped and underdeveloped countries is not having potential infrastructure for digital transformation (Fountaine, et al., 2019, Liu, et al., 2020, Brock et al., 2019). The AI based business are still beyond them for establishment of essential digital data infrastructure enlargement (Gursoy et al., 2019, Chui et al., 2018). The absence of digital infrastructure, lack opportunity, disappoints data openings and digital innovations, creating it thought-provoking to address business data, information and knowledge cravings sufficiently – leave-taking businesses with archaic data, information, and intelligence (Chui et al., 2018, Akerkar, 2019, Muthuveloo et al., 2013). Although, the developed countries like United States, UK, European countries and some of the Asian countries like China , Japan, Korea, India and many more is having good infrastructure for AI based business (Liu, et al., 2020, Gursoy et al., 2019, Schank, 1991). They have competent enough software developers to apply cutting edge decision making technology. The Hologram technology with artificial intelligence (AI) is now new innovative trends for business and marketing (Ghoreishi et al., 2020). Samsung in his white paper (Samsung, 2020) address the concept of hologram technology and its impact on next generation business. Samsung white paper address the issues of 5G vs 6G technology appearance and its appropriate influence on cutting edge business and explained the following Hologram technology as below (Samsung, 2020).

While AI and Hologram has the latent to renovate businesses, state-of-the-art business models, and trade across the globe (Benkler, 2019, Corea, 2019a). Trepidations ensuing in xenophobic data practices and confrontation to partaking data, information and knowledge may prevent its prospective. As a result, the leeway of generating and embracing huge comprehensive gigantic data ponds and live out at indigenous, countrywide, and worldwide levels go on imprecise. Hologram technology seizure truly immersive XR, High-Fidelity Mobile Hologram and digital replica. The pictorial outlooks is shown below as discussed in the Samsung white paper (Samsung, 2020). For detail configuration and discussion, readings on Hologram technology researcher can refer White paper released by Samsung (Samsung, 2020).

Artificial Intelligence is accepting the phenomenal changes of the business framework and transforming the business culture how to work in the digital era (Davenport, 2018, El-Najdawi et al., 1993, Hamscher, 1994, Metelskaia et al., 2018). Basically it is not just changing the culture of business but also fundamentally renovating the conventional thinking and significance of alliance and collaboration, vigorous competition, and digital and enriched innovation (Hagras, 2018, El-Najdawi et al., 1993, Niu et al., 2011, Schultel et al., 2017). While most AI inventiveness craft economical improvement by recognizing an exclusively innovative opening and breaks, pleasing to the eye contemporary energies, delivering a market fragment that others business tycoons have overlooked, or crafting fresh markets,

linked devices that nourish a continual creek of digital data about functionality, treatment, fabrication, requests, automated and robotic help center and more to a significant setting will make even more captivating economical revolutions (Gentsch, 2018, Hagrass, 2018, Liu, et al., 2020, Scheer, 2012, Maedche, 2019). That conveys us to a key and significant point: As the Internet of Thing (IoT) amalgamation permit us for the improvement of business atmospheres where customers and trades can act and work together (Schultel et al., 2017, Valanarasu, 2019, Chan et al., 2015, Chanson et al, 2019). How will it transform innovative business models using AI, Hologram and Internet of things further, as it will be imaginable to enterprise strategy understandings over products and things? The technology road map of IoT is described and defined as below (Valanarasu, 2019, Schultel et al., 2017, Chan et al., 2015, Chanson et al, 2019). This road map also depict the growth of innovative business platform is along with the respective algorithms, tools and technology development. The security is the big issue for the state of the art business model and platform (PĂUNESCU et al., 2016). We discussed the security issues in the nest section.

6. Security And Privacy Terrorizations

The increasing weaponization of artificial intelligence (AI) has made security a life-threatening issue across the globe (Benkler, 2019, Clark et al., 2019, Corea, 2019a, El-Najdawi et al., 1993). AI is presently an extent where virtually no rules of rendezvous put on, and each nation will surface teething troubles in making security from algorithms and defining cyber global regulation (Kearney, 2002, Shae & Tsai, 2019, Chanson et al., 2019). In the artificial intelligence algorithms have no boundaries and no global regulations and regulatory body, digital data has its derivation, proprietorship, and local and global boundaries (Furman et al., 2019, Brock et al., 2019, Giotopoulos et al., 2012, Chan et al., 2019). There are many – including countries, situations, outworkers, offenders, and radicals – that deliberate algorithms outside the box of worldwide dominion (Shan et al., 2019). While some treaties have materialized vis-à-vis cyber-crime, understanding of AI conflict leftovers open-air any obligatory legitimate commitments (Brock et al., 2019, Maedche, 2019). Lack of unanimity on AI guidelines, every single digital platform business model and business is at threat (Ciuriak, 2019, Dellermann et al., 2019, Hamscher, 1994, Shae & Tsai, 2019).

Artificial intelligence (AI) is a central and fundamental chunk of the imminent that is approaching to each digital business entity across the globe (Clark et al., 2019, Hagrass, 2018, Chan et al., 2019, Shan et al., 2019). The evolving tendencies in AI-driven computerization and robotics replicate momentous swings of companies and engagements in the artificial intelligence ecosphere that express to the reconfiguration of securities, guidance, and savings in worldwide business policymaking (Ghoreishi et al., 2020, Shan et al., 2019). While quickly programming businesses present encouraging openings, they also extant noteworthy safekeeping threats (Dellermann et al., 2019, Mishra 2020).

As the future of AI-driven digital business revolution is strictly tied to how countries accomplish their substantial data driven competences from across cyberspace, aqua space, and aerospace (Hedberg, 1996, Giotopoulos et al., 2012, Shan et al., 2019). There is a requirement to place a robust prominence on

evolving data driven enterprises to collect more data, information and knowledge to evolve the AI landscape (Chang et al., 2018, Chanson et al., 2019, Iansiti & Lakhani, 2020).

7. Result And Discussions

We have studied various elite and high impact factor journals in the area and elaborated the findings through critical comments and discussions. We have given the theoretical foundation of the AI in business model which capture the market in near future. We tried to give the answer how the AI and hologram technology transform the business model and change the business dynamics through numerous deliberations. The contemporary study adds to academic world and industries in two ways. First, this revision attempted to define AI technology as the digital and algorithmic catalyst of business model innovation (Gentsch, 2018, Chang et al., 2018, Wang et al., 2019). More studies are called for to subordinate emergent algorithmic and technological expertise to business model innovation (Lo'ai et al., 2016, Iansiti & Lakhani, 2020). Second, this study leans to graceful on reliant dynamics influencing digital business model innovation instigated by the evolving technology. Our case study and ensuing argument on the formation of digitally artificial intelligence centered business model innovation make available understandings on such reliant features. Developments in AI technology and big data analytics will remain to generate openings and experiment to delivery systems (Kokkinaki et al., 2002, Daugherty et al., 2018). Active front-runners require to discover new and innovative paths and ways to influence and control these improvements to make over their business and drive evolution (Kokkinaki et al., 2002, Wang et al., 2019, Mishra 2020a). Many business tycoons will find that these progresses take them in guidelines they had certainly not well-thought-out (Iansiti & Lakhani, 2020). The focus on a business's essential proficiencies and business planning and digital strategy remains commanding but outstanding sweeping to and promising and boosting digital innovations that transference the corporation's AI based digital business model signifies a foremost encounter for business tycoons and frontrunners (Lo'ai et al., 2016, Iansiti & Lakhani, 2020). The innovation has become a key focus of business privileged, but enterprises free-for-all to locus themselves to perceive evolving indications of interference and to retort (Dellermann et al., 2019) This is on the whole true for businesses that have been in trade for a number of an inordinate length of time and attained extraordinary realization, i.e., inheritance digital businesses (Milkau, 2019). The C-level chief executives know that snug to their inheritance business can emasculate their business's upcoming well-being (Wang et al., 2019). It is suggested that three requirements overlay the approach to success: transmute the fundamental business, grow the central business, and scale up new business through innovation and intelligence (Rathod & Rathod, 2006). We believe that for numerous businesses, altering and developing the central business will yield significance over scrambling a new and innovative business since businesses must emphasis utmost of their responsiveness on the business producing the most returns (Takeuchi et al., 2019). If businesses and companies start new venture, these will be expected to derivative of endeavors to revolutionize from place to place bequest big business or possibly more expected, heritage classifications. Businesses are progressively observing for workforces who can modernize and who have ground-breaking approach because they diagnose the

requirement for teams who see foremost hitches, view them as openings and device ground-breaking elucidations (Muthusamy et al., 2018, Paul et al., 2019).

Let us illustrate through an intangible example- Suppose Company X had some of the most cutting-edge technology in its HGVs, permitting the drivers to transport manufactured goods more proficiently and thus more cost-effectively; yet Company X had some of the most antediluvian classifications for running and managing the society crosswise of its commercial ventures. Deprived of the persons, the HGVs park yourself shiftless. Only when the persons adjacent of the corporate activated to turn the transport on the side did they look for exterior proficiency to get-up-and-go modernization over and done with their endowment controlling practices. Similarly, only when Company Y looked-for to upgrade to 1000 staffs, did it develop hyper-focused on the public slanted of its commercial and seek out information and proficiency it did not have. Spread over big data analytics to its public progressions created melodramatic results, but it seized an open-air perception and high-tech assets to accomplish it (Kokkinaki et al., 2002, Ghoreishi et al., 2020). It would be expected to examine why the two companies in our circumstances were incapable to revolutionize on the inside to put on the state-of-the-art developments in technology and bring up-to-date archaic and virulent coordination (Lee et al., 2018, Ligęza et al., 2014). The response is that as with various businesses nowadays, these businesses do not have AI players on pointer and have not well-thought-out how to meritoriously use AI conferring to the references (Ghoreishi et al., 2020). If enterprises stand-in better erudition about Artificial Intelligence and use of AI surrounded by their set-ups, this will comfort ambition modernizations across their businesses. Furthermore, the ethos of the association expected the stage a most important starring role as the preceding segment of emerging AI-base commercial prototypical signifies (Ciuriak, 2019, Gentsch, 2018a, Mrass, et al., 2018). The collected works and research findings suggests that executive influences performance a precarious starring role in modeling the progression of digital business model modernization (Okuda et al., 2018). The argument recurrently spins from place to place circumstantial dynamics such as managerial and executive design, legislative values and philosophy, and managerial ethics and principals (Charif et al., 2014, Macmillan et al., 2019).

8. Conclusions

This study first delivers an ephemeral impression of AI, contemporary issues being attempted in evolving AI and describes how it transmutes digital platform business models. Our reading of companies that revolutionized their business models using artificial intelligence shows its prospective sway. We also deliberate how managers can craft an innovative AI-based ethos, which rearticulates the progression of AI-based business model modernization. Businesses that effectively take advantage of on AI can make unsettling revolution from side to side their new digital business models and practices, empowering them to possibly transmute the worldwide economical business landscape. It seems emerging a culture of novelty often runs antagonistic to by design conventional and self-conscious interpretation. Significant fulcra entail a positive degree of freedom to take possibilities and revelation to a lens that is unaccustomed. Uppermost executives and leaders, perform a significant and strategic starring role in instituting the culture of a business so they must exemplary revolution and a readiness to frequently learn

and innovate with state-of-the-art-technology. They could open by culture with cutting edge technology-AI and by what method it can enrich the enterprise's AI business model and coordination, as well as boosting and gratifying workforces who attain AI proficiency and take-off flyer ventures in the business.

Abbreviations

1G- first Generation

2G- Second Generation

3G- Third Generation

4G-Fourth Generation

5G- Fifth Generation

6G- Sixth Generation

AI-Artificial Intelligence

BI- Business Intelligence

CI- Continuous Intelligence

CRM-Customer Relationship Management

ERP- Enterprise Resource Planning

BM- Business Model

DBM-Digital Business Model

DP-Digital Platform

MI- Machine Intelligence

CI- Computation Intelligence

IR-Innovation Radar

PBM- Platform Business Models

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Figures

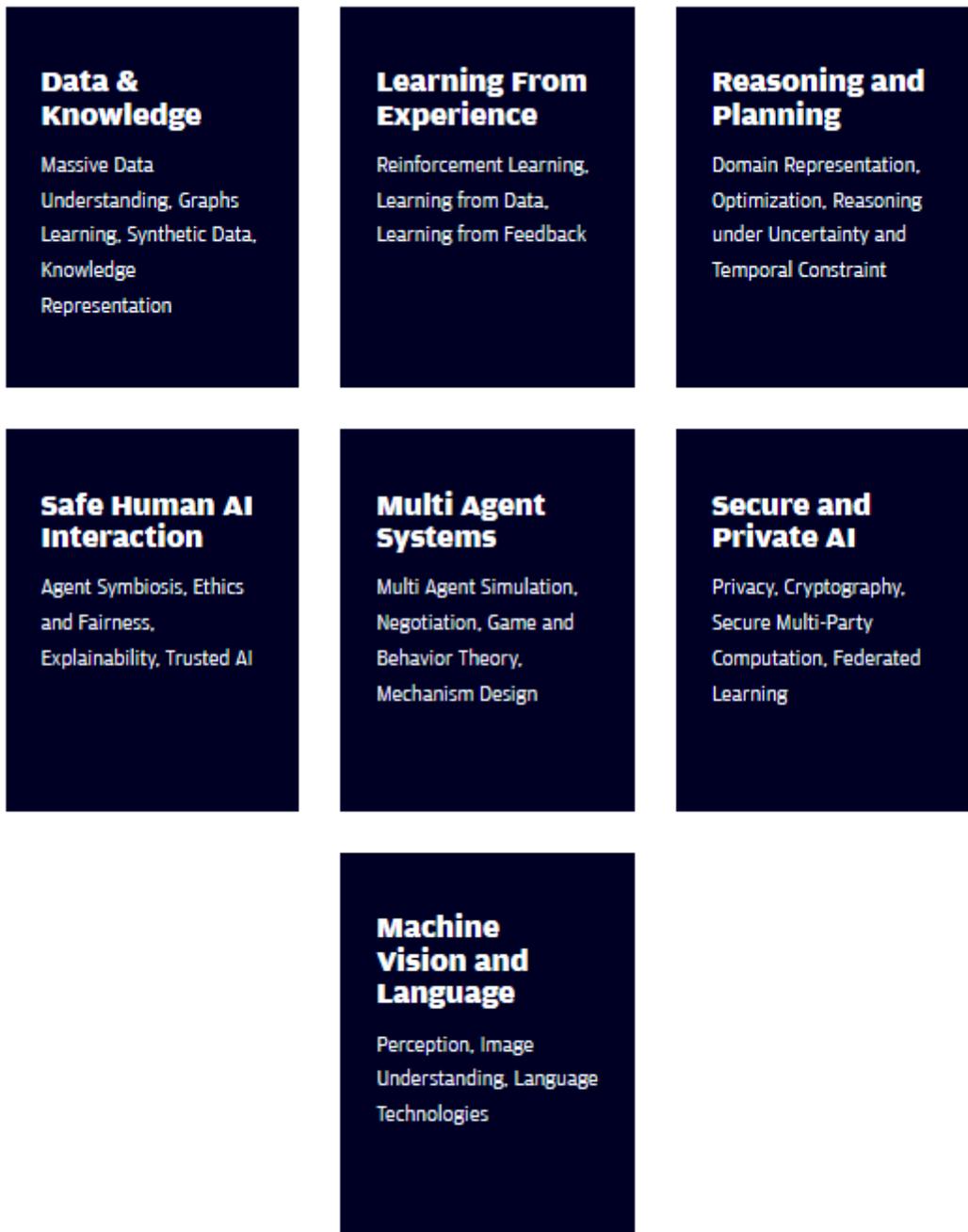


Figure 1

Artificial Intelligence nucleus in Business Domain



Figure 2

Structure of data intelligence in Business Ecosystem

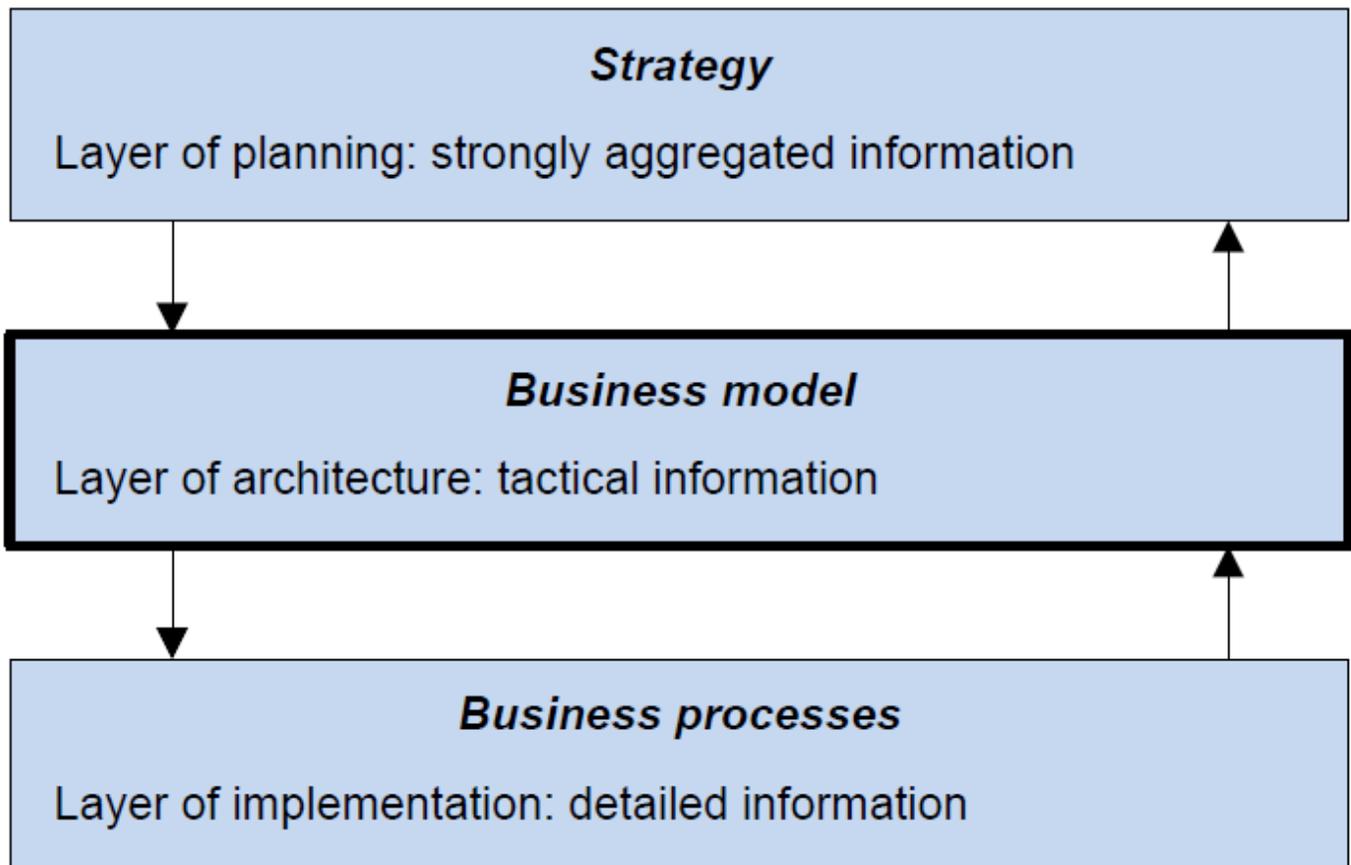


Figure 3

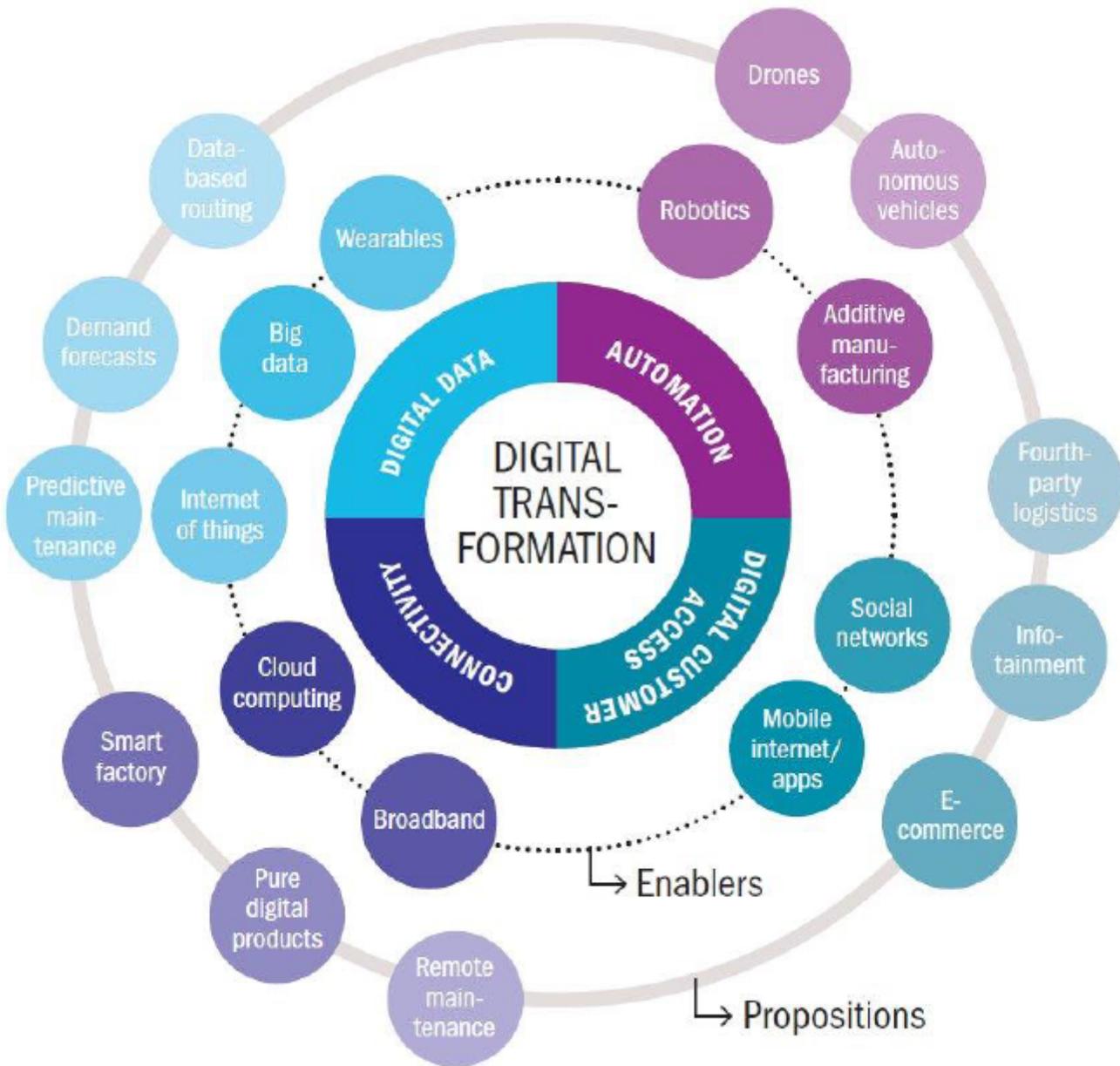


Figure 4

Digital data transformation

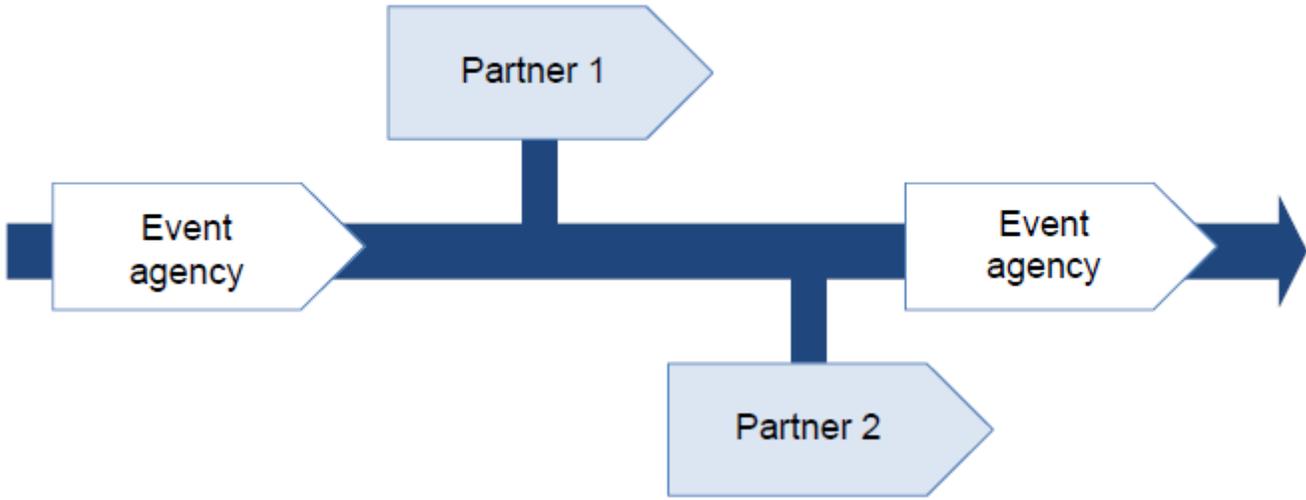


Figure 5

The Orchestrator business model

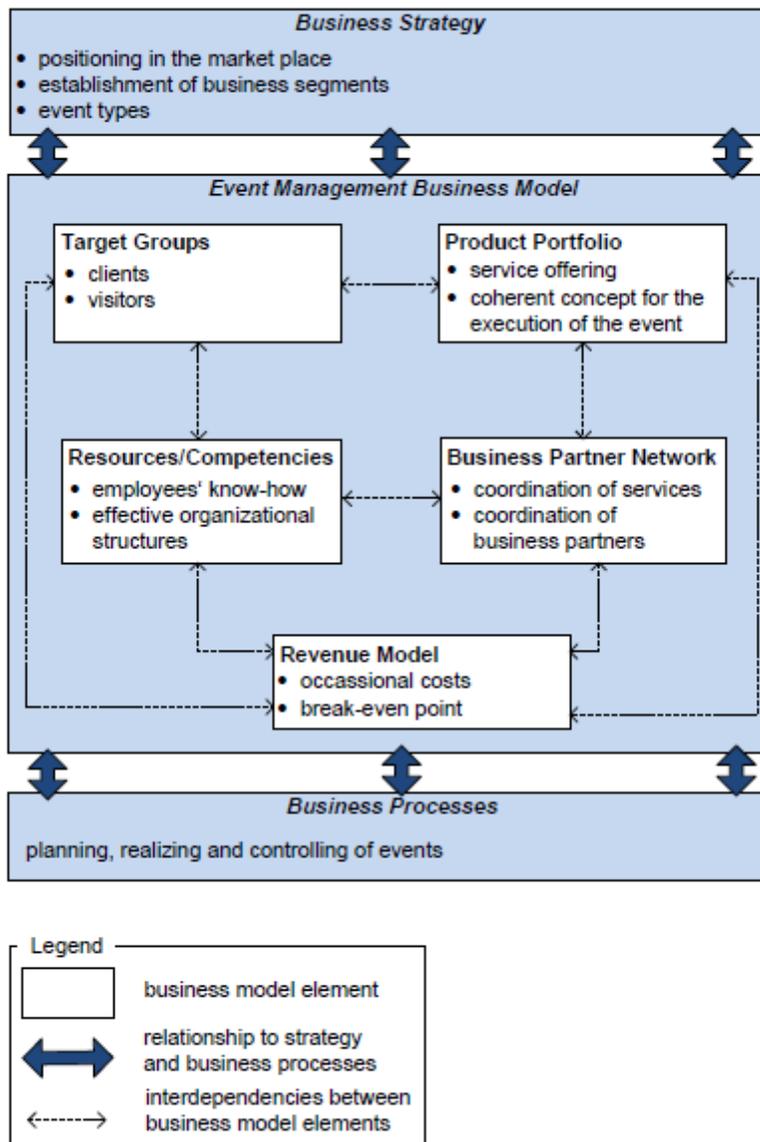


Figure 6

Framework of AI- Business Model

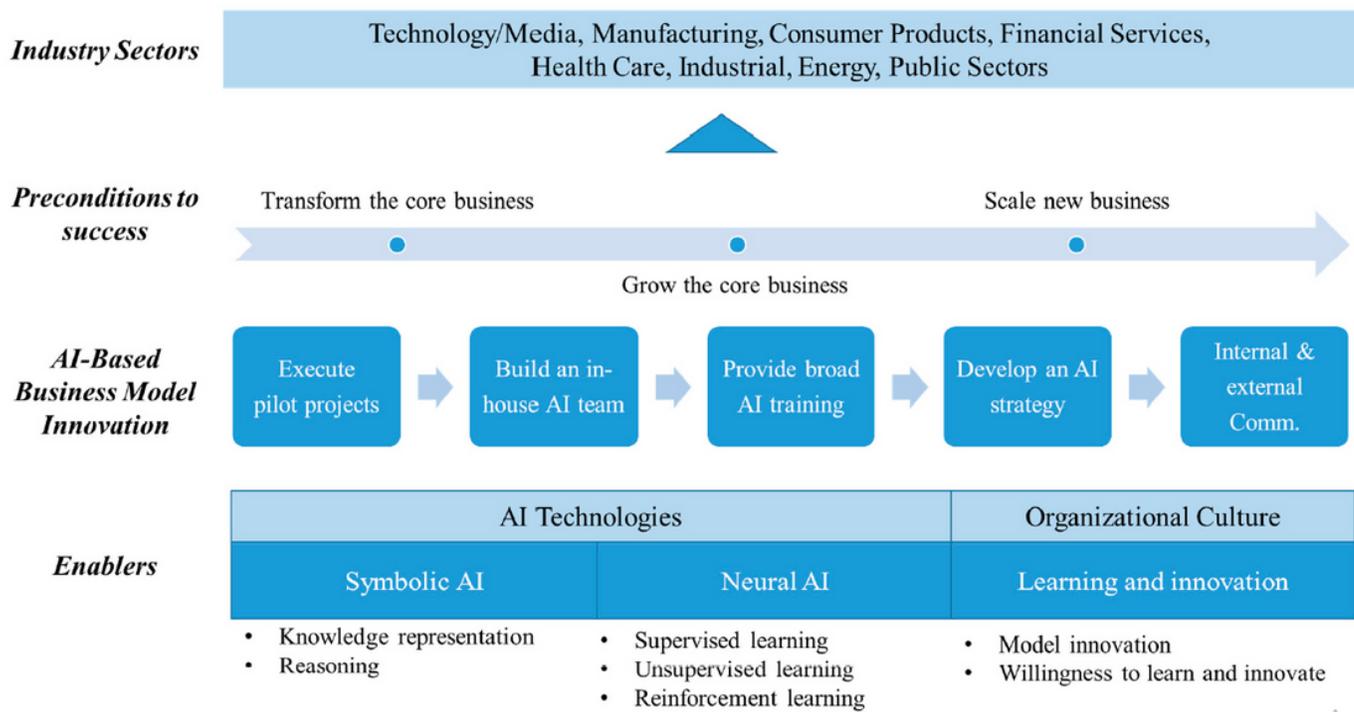


Figure 7

AI- Business Model

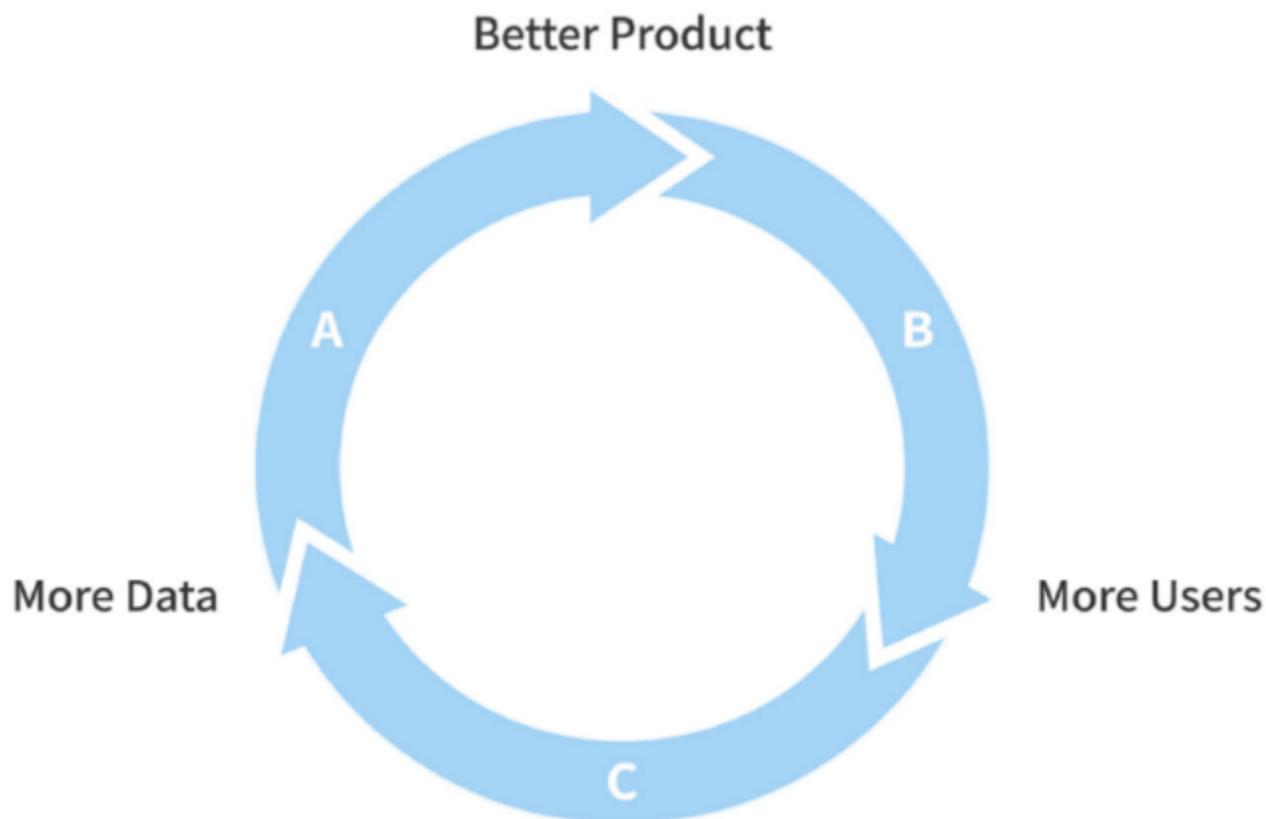


Figure 8

Cycle of AI



Figure 9

Hologram Technology (Samsung, 2020)

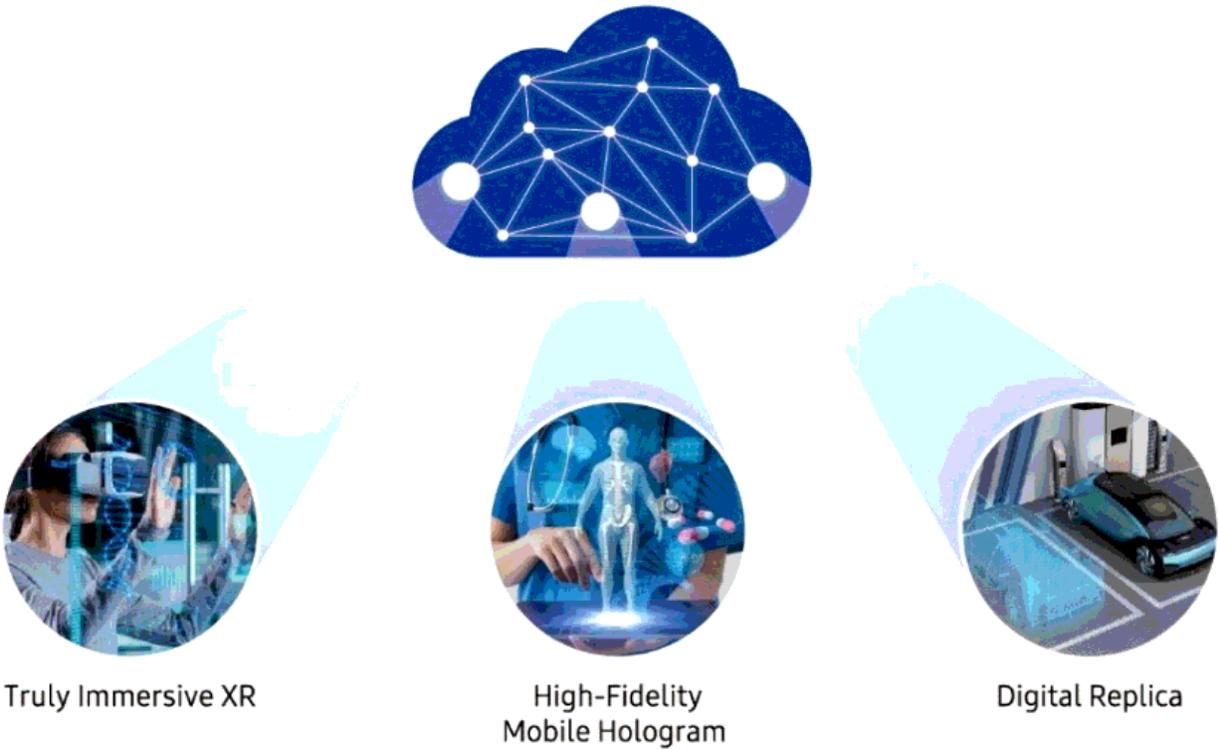


Figure 10

Hologram Technology (Samsung, 2020)

Technology roadmap: The internet of things

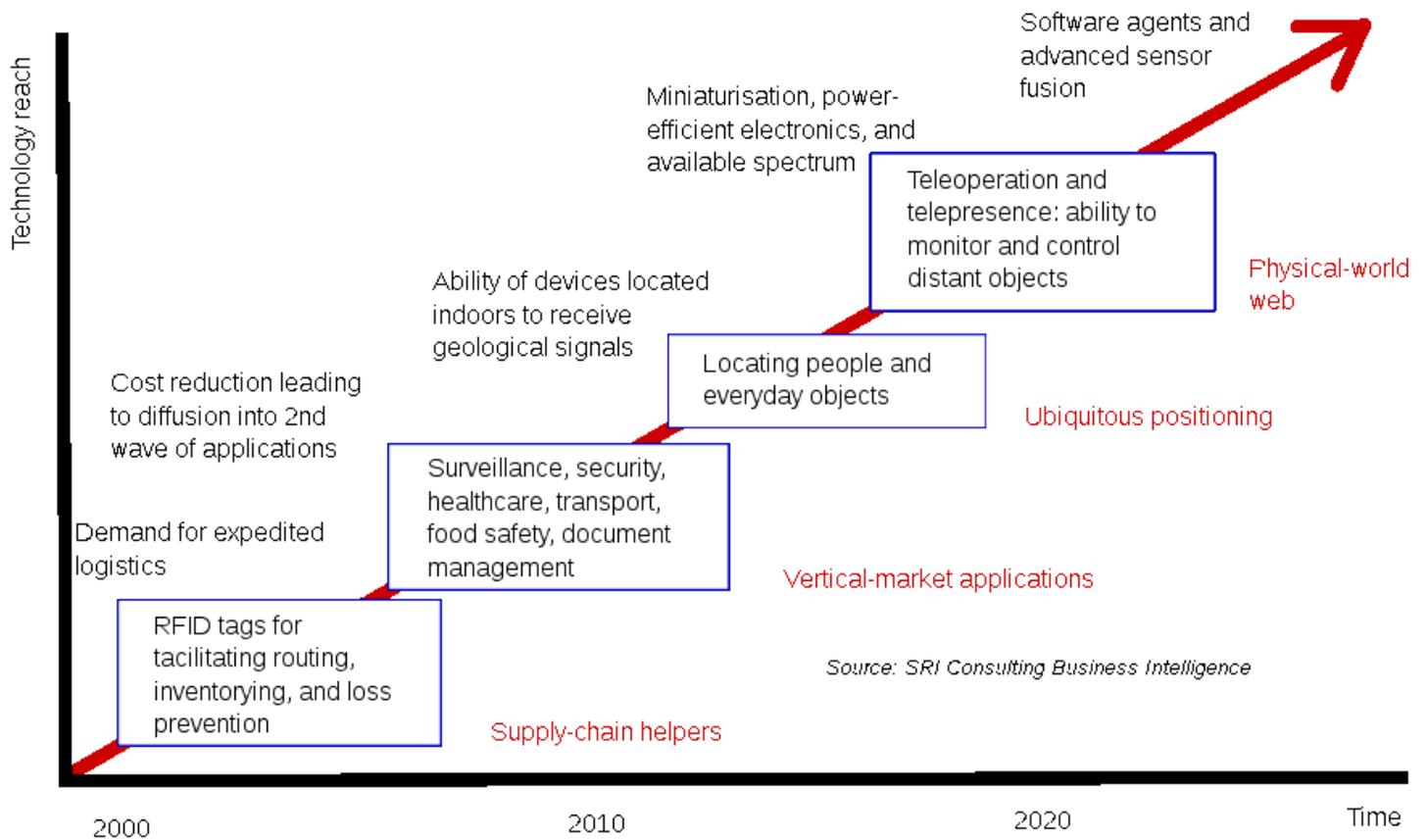


Figure 11

IoT technology roadmap