Embracing of the technologies in commercial across the world has increased in a bid to increase efficiency with Blockchain, Internet of Things and Artificial Intelligence Poised to Shake up Healthcare.

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ABSTRACT - Advancements in smart devices, wearable gadgets, sensors, and communication prototype have enabled the vision of smart cities, persistent healthcare, improved reality and interactive multimedia, Internet of Every Thing (IoE), Artificial Intelligence and cognitive assistance, to name a few. All of these visions have one thing in common, i.e., delay understanding and instant response. Various new technologies designed to work at the edge of the network. As crypt currencies grow in popularity and value, there is an emerging consent that the technology that powers them may bring long-awaited changes onto various industries. Blockchain tech can upgrade healthcare and faces including protection, seclusion, carry ability, and low-power operation are presented, and recommendations are made for future follow a line of exploration information.

KEYWORDS- *Blockchain, Internet of Things, Artificial Intelligence.*

INTRODUCTION

Technology has attracted much attention in recent years for its prospective to aggravate the strain on healthcare systems caused by an aging population and a rise in persistent infirmity. Standardization is a key issue limiting progress in area, and proposes a standard model for application in future Blockchain, Internet of Things, Artificial Intelligence healthcare systems. These present the state-of-the-art relating to each area of the model, evaluating their strengths, weaknesses, and overall appropriateness for a wearable Blockchain, Internet of Things and Artificial Intelligence healthcare system. Challenges that healthcare industry is plagued by limitations stemming from heritage technology systems that are put under tremendous strain by the rigorous healthcare standards. A consulting firm that frequently reports on Blockchain technology observed that Blockchain technology has the potential to transform healthcare, placing the patient at the center of the healthcare ecosystem and increasing the security, privacy, and interoperability of health data. Transforming healthcare through technology is no longer the Sisyphean task it once was. Technologies such as blockchain, artificial intelligence (AI), and the Internet of Things (IoT) are all helping to drive change, prevent illnesses, and even reshape healthcare IT.

ECONOMIC SYSTEMS OF BLOCKCHAIN, INTERNET OF THINGS AND ARTIFICIAL INTELLIGENCE

Healthcare data gets smarter and bigger, and for any contributor or researcher there's progressively a lot more companionable information to look through. Are there further applications for that data than humans running searches? Artificial intelligence is being designed to help with data analytics in abundance of industries, including healthcare. A machine-learning AI program can identify new areas for innovation by sorting through millions and millions of data points faster than any human ever may perhaps. AI's data-sorting capabilities are already being explored by companies such as Google and Intel. While these are all fascinating and potentially transformative use cases, they may not stop healthcare from being a risk-averse industry simply due to the sensitivity of the data involved. Blockchain, however, could. By using a secure, distributed ledger, the potential is there to secure patient data in an unprecedented way. There are other benefits too; as one industry executive told me, it will help organizations be more efficient with healthcare budgets, allowing a 'greater focus on illness prevention rather than cure. AI is a little in the rear this, but its scope is potentially more wide-ranging. The key here is in terms of the volume of work and the fact intelligent health assistants get smarter the more work they do. Millions of samples can be analyses in quick time and patterns gleaned from them. The combination of blockchain, AI and IoT could therefore be an irresistible one. Patient data secured on the blockchain; AI-enabled assistants and automated health checks cutting time and costs; and millions of 'things' connecting the dots and finding better, clearer diagnoses

NANO VISION

A few companies are proposing capable Blockchain solutions to healthcare issues. One particularly innovative start-up is Nano Vision. Nano Vision is creating a global, decentralized blockchain economy that can be used to store health data on the molecular level. The system-on-chip

architecture can be used by researchers, doctors, and ordinary citizen scientists in a variety of environments and devices to collect data on health issues such as superbugs or heart disease. All data collected by the chips is determined on the Nano Sense blockchain, creating an immutable, universally accessible database of vital healthcare data. Nano platform uses AI and machine learning to constantly analyze the ever-growing dataset, becoming smarter the more data it looks at. The AI will ultimately be able to predict new trends and areas of collaboration for future healthcare research, drawing connections that ordinary human searchers may struggle to find in such an immense amount of data. In future, scientific breakthroughs may be made by a partnership of researchers and AI. Nano Vision maintains its blockchain ecosystem by minting a dedicated crypto currency on the data-gathering chips. The Nano tokens can be bought and sold like other crypto currencies, and within the Nano economy.

FIG1/BLOCKCHAIN-AI-HEALTHCARE

Fig 1

IMPROVING THE SUPPLY CHAIN

As technology points sideways, there are ingrained systems that touch patients, and health systems and their partners will need to work together before this type of ecosystem-centered technology sees wider adoption. That's why to predict that the area of blockchain technology that will develop the earliest in the health field is within the supply chain. Blockchain will be paired with sensor-enabled Internet of Things technology to increase efficiency in moving medical devices and pharmaceuticals from producers to patients. There are three major groups within the supply chain: producers, intermediaries, and providers. Producers referring to the companies that manufacture pharmaceuticals, medical devices, and other healthcare supplies and equipment. Intermediaries are the distributors and group purchasing organizations that secure products from the producers, negotiate prices, and bring healthcare products to the provider marketplace. And the providers are the hospitals and medical practices that use those products. The supply chain pain for these players is related to regulatory compliance, product security, product damage or spoilage, and the costs and waste throughout the chain. Producers must control and report on the origin of every component and raw material and then update that in sequence as new vendors are added or removed, which is time-consuming and inefficient. Additionally, many pharmaceuticals and medical products require special handling, such as temperature parameter during transport. Shippers have to keep the product within the required range and prove to regulators. Blockchain can make this far more efficient by simplifying the shipping process and saving time and money. Blockchain and IoT devices offer many advantages to all companies within the healthcare supply chain, and the technology can transform the way these companies operate by providing a few key benefits.

REDUCED COSTS

In many processes are done manually, they are slow and inefficient. Blockchain eliminates the manual aspect and improves efficiency. For example, modum.io is a startup that combines the IoT with blockchain by including a sensor device on the package that can regulate temperature, humidity, and shock, along with a smart contract that automatically checks, accepts, or rejects acceptance criteria for a product. The sensor then pairs with a smart device to review time-stamped data and automatically make decisions at each transaction point, making the process faster, smoother, and more cost-effective. These savings can then be passed on to the customer. Healthcare prices are sky-high, partly as a result of thin margins, and blockchain can help improve those margins.

CONFRONTING ATTACKS

The attack was a wake-up call for the healthcare industry, but there are still security risks and vulnerabilities in devices besides laptops and desktop computers. Consider, for example, implantable devices such as pacemakers. Security firm White Scope recently discovered more than 8,000 vulnerabilities in pacemakers from four different manufacturers that made it susceptible to hackers. Researchers found that the software used in the devices was outdated and vulnerable, making it possible for hackers to take control of the device and threaten the life of the user. In some cases, researchers found unencrypted user data in pacemakers' programming, including the patient's name, Social Security number, and medical information. With blockchain, there's enhanced security built in to help prevent hackers from gaining access to information or devices, which is especially important as more hospitals embrace IoT technology.

REDUCED RISK OF FRAUD

Healthcare fraud is an increasingly prevalent problem. In the first half of 2017 alone, regional healthcare fraud recoveries amounted to more than $2.04 billion. While some healthcare fraud is the result of criminals intentionally trying to steal money, much of it comes from billing errors, with hospitals either overcharging patients or charging them for

services that were not performed. Human error contributes to a lot of lost money. Blockchain-based systems can automate many of these administrative tasks and remove human intermediaries, including payment processing and claim adjudication, which can improve accuracy and reduce costs at the same time. Blockchain is set to transform the future but currently, it's at the stage of development that the internet was in 1996 or cloud technology was in 2008. It's a foundational technology, so in terms of technology adoption patterns, it will take years and several phases for blockchain to become the ubiquitous digital data basis of the healthcare value chain.

FIG2/BLOCKCHAIN-IoT-HEALTHCARE

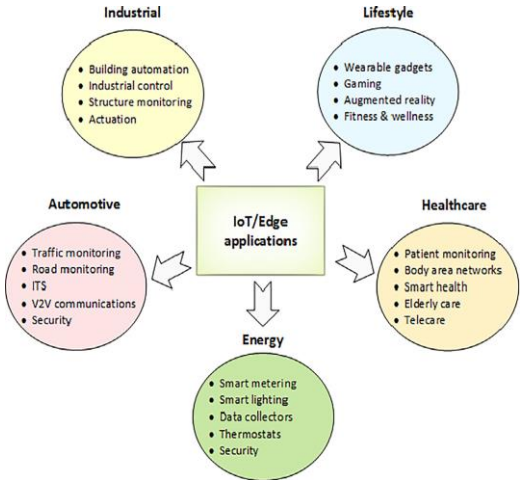

Fig 2

CONCLUSION

At the modern-day scenario, definitely conclude that in coming years, the confluence of Artificial Intelligence, IoT and Blockchain is going to make the healthcare industry automated, frictionless and highly controlled. In spite of being a newcomer, the way healthcare industry have already begin embracing technologies; it is clear that Blockchain-based solutions are likely to be explored more in future to build custom products. Technologies make it more convenient, transparent and intelligent. A blockchain ecosystem with healthcare-focused use cases involving health data exchanges, smart assets management. The healthcare industry needs to establish blockchain consortium to facilitate and create standards for future implementation on a large scale across healthcare.

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