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Digital India: Opportunities and Challenges including in Context of COVID-19

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Abstract: Digital India is an umbrella programme that covers multiple Government Ministries and Departments. It is an effort to weave a large number of ideas and thoughts into a single, comprehensive vision so that each of them can be implemented as part of a larger goal. Digital India is to be implemented by the entire Government with overall coordination being done by the Department of Electronics and Information Technology (DeitY). It provides the much needed thrust to the nine pillars of growth areas, namely Broadband Highways, Universal Access to Mobile Connectivity, Public Internet Access Programme, e-Governance: Reforming Government through Technology, e-Kranti - Electronic Delivery of Services, Information for All, Electronics Manufacturing, IT for Jobs and Early Harvest Programmes. A number of digital health initiatives have also been rolled out under the programme, including in context of COVID-19 and pandemic response. A comprehensive real-time based IT platform 'COVID India Portal' has been launched in March 2020 in response to COVID -19 pandemic, for monitoring the situation, preparedness and management to control the COVID in the country.

I. INTRODUCTION

Digital India is a flagship programme of Government of India which targets to ensure availability of government services to its citizens electronically. It aims to increase access of the services even to remote areas in the country with simultaneous development of online infrastructure and availability of internet connectivity. Digital India was launched by Hon'ble Prime Minister of India Sh Narendra Modi on 1 July 2015 with a vision to connect rural India through digital transformation. It also aims to connect the country through high-speed internet networks and improve digital literacy. Ultimately, it has a vision to transform India into a digitally empowered society and to develop economy. This will promote innovations in the country and will boost the Indian economy by connecting it to knowledge savvy world.

The Digital India programme has three key vision areas:

1) Digital Infrastructure as a Utility to Every Citizen: This includes provision of high-speed internet connectivity, a unique digital identity, mobile phone and bank account to citizens, access to common services and shareable private space on a public cloud for every citizen.
2) Governance and services on demand: It includes availability of government services online and reducing paperwork, integration across departments and jurisdictions, improving ease to do businesses through digital services and leveraging Geospatial Information Systems (GIS).
3) Digital empowerment of citizens: This includes improving digital literacy and empower citizens by making digital services and resources available in Indian languages and to promote participative governance through collaborative digital platforms.

The Digital India programme has nine pillars or key initiatives:

a) *Broadband Highways:* To cover 2,50,000 village panchayats under National Optical Fibre Network (NOFN) and develop Nationwide Internet Infrastructure (NII).
b) *Universal Access to Mobile Connectivity:* To increase penetration of mobile network and internet connectivity
c) *Public Internet Access Programme:* One Common Service Centre (CSC) which would be multi service centers
d) *e-Governance:* To deliver government services more effectively
e) *eKranti:* Use of internet in health, education, justice and financial services
f) *Information for All:* To develop a medium of exchange and to facilitate 2-way communication between citizens and government
g) *Electronics Manufacturing:* Manufacturing of items like mobile, medical devices, consumer electronics, micro ATMs, smart energy meters etc.

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h) *IT for Jobs:* To increase and provide jobs in IT sector focusing on rural areas
i) *Early Harvesting Programme:* Wifi facilities in all universities, converting books into e-books, email as primary mode of communication, biometric attendance etc.

II. CHALLENGES

1) *Delay in Development of Infrastructure:* The slow progress in infrastructure development is one of the biggest challenges. For example, the implementation of BharatNet project got too much delayed and hampered the progress of other dependent projects.
2) *Poor Connectivity:* Wifi penetration is still very low. Whereas about 8 million wifi hotspots are required to cover the whole country, only around 31,000 public wifi hotspots are available. [8] In India, wifi connectivity situation is not encouraging and can be understood from the following facts.
3) *Digital Illiteracy:* Digital literacy is still inadequate in the country, more so in rural areas. Full digital literacy needs more serious efforts and a change in people's mentality to adopt cashless transactions and online government services.
4) *Skilled Manpower:* There is a strong need of skill building for successful implementation of various schemes and initiatives under the Digital India programme. All central and state ministries need skilled persons for e-governance and government services.
5) *Contracting:* Several projects of PSUs are delayed due to challenges in contracting skilled manpower. There are multiple reasons and the most important is that the contractor agencies are not finding these RFPs economic viable.
6) *Cyber Security:* Cybercrime is another risk which may jeopardize the progress of technology adoption and use. Risk of breach of privacy prevents people in adopting this.
7) *Finance:* The cost of investment in infrastructure is high and this investment will start yielding profit after few years. Therefore, a continuous influx of money is needed to support the programme.

III. OPPORTUNITIES

In an effort to create digitally empowered knowledge economy, Digital India has brought many opportunities:

1) *Government Support and Schemes:* The biggest opportunity is that Government of India and various state governments themselves are promoting digital initiatives and allocating a significant budget for information technology and digitalization.

In Union budget for 2020-21, the government has increased budget outlay for Digital India programme by approximately 23% compared to the previous year. The main segment and activities covered under the budget were related to electronic manufacturing, research and development, capacity building and manpower development, cyber security and promotion of IT and IT enabled services. [1]

In Union budget of 2021-22, government again announced multiple favourable measures, policies, schemes and activities to complete digitalization in the post Covid era. [2]

a) Government will setup a world-class fintech hub in Gujarat International Finance Tec (GIFT) city. As per an estimate of Reasearch And Markets, fintech market in India may grow at a compound annual growth rate (CAGR) of 22.7% and may reach to INR 6,207 billion by 2025. Fintech hub is a great move considering the increasing role of the country in global fintech market.
b) More e-courts will be implemented and National Company Law Tribunal (NCLT) will be strengthened. It will improve the efficacy and efficiency of the country's judicial system.
c) Union budget has allocated INR 3,768 crores for conducting national census 2021 digitally.
d) Digital India Land Records Modernization Programme (DILRMP) is the central scheme which has been extended to support states for development of Integrated Land Information Management System (ILIMS). [3]
e) Common Services Centers (CSC) is a part of National e-governance plan (NeGP) to introduce e-governance on a massive scale. Through CSCs, government services and information will be made available to villages as a village level entrepreneur model. The services offered included agriculture, education and training, health, rural banking and insurance, entertainment, utility and commercial services. [4]
f) A total of INR 1,500 crore has been allocated to schemes promoting digital payments. [5] Growth in digital payment in last couple of years can be seen in the below graph [6]:

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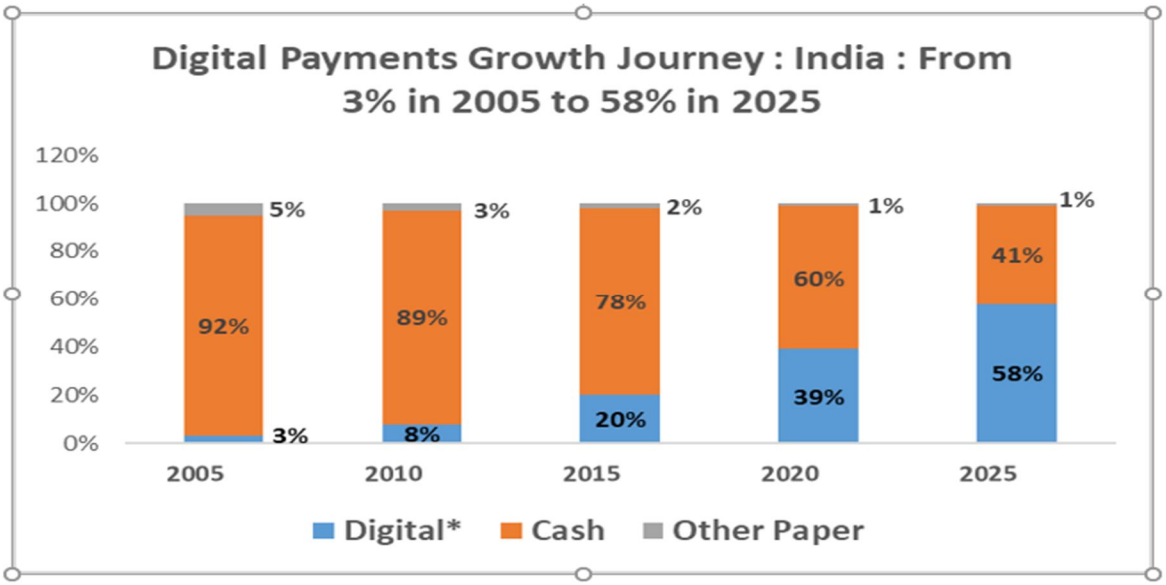
2) *Growth in Digital Payments:* As per NASSCOM, digital transactions are expected to increase and reach upto 58% of total transactions by 2025. Digital Payments include cards, mobile-based, QR based, wallet-based, and all other electronic modes of payments. [7]



3) *Smartphone Penetration in India:* It has risen from 2% in 2005 to 26% in 2015, 32% in 2020 and is expected to reach 36% in 2022. More growth was observed in semi-urban and rural areas as compared to urban areas. Rural internet active users are 227 million as compared to 205 million urban users. About 550 million people in India use feature phones which is a big opportunity to be realized.
4) *Employment Generation:* With a significant budget outlay and multiple schemes, the Digital India is expected to create 17 million direct jobs and 85 million indirect jobs in 2019. [8]
5) *Digital Training Programme:* Both government and private sector has taken multiple initiatives like National Digital Literacy Mission (NDLM) for training and increasing digital literacy in the country. These initiatives have reached to millions of people and helped to improve their employability, adoption of technology, accessibility of information and services and empowering the society.
6) *Universal Accessibility:* Services like DigiLocker has enabled citizens to access and share their documents across digital platforms.
7) *Healthcare:* Digital health may be solution to various problems in health sector. It may support remote consulting and advice by doctors, increasing access to healthcare services, improving efficiency of healthcare system, promoting health and educating people.
8) *Digital Health ID:* In order to create Digital Health Ecosystem, Government of India has launched Ayushman Bharat Digital Mission which aims to provide digital Health ID to the people of the country. National Digital Health Mission, which was launched in 6 states and UTs on pilot basis, has registered more than 1 lakh Health IDs. This ID is a 14-digit number which will be health account and repository of all health-related information of the person. This information will be safe, secure and portable in case person is shifted from one healthcare facility to other. Personal health records will be linked to Health IDs and can be viewed in a mobile application. Health ID is free and voluntary.[9]
9) *Reproductive and Child Health:* The use of technology in reproductive and child health deserves a special mention because many of the initial digital projects of health ministry were focused on these aspects of basic health services. Various portals of Ministry of Health and Family Welfare try to streamline reproductive health services in the country. These portals include Health Management Information System (HMIS), Reproductive and Child Health (RCH) and Maternal and Child Tracking System (MCTS). These portals are being utilized for assessing the need of services, identifying eligible couples, pregnant women and children, registration of beneficiaries and services provided to them, and name-based tracking of each beneficiary to complete the bouquet of services under life-cycle approach. RCH portal has multiple extension applications like Kilkari (messages), mobile academy, ANMOL (ANM On Line) which makes it much more useful and unique.

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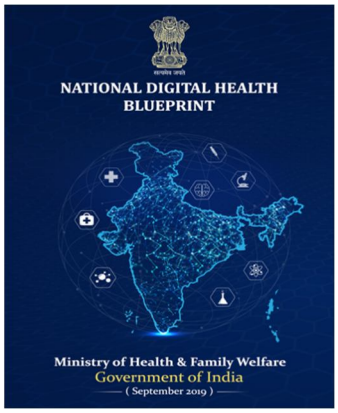
10) *Beti Bachao Beti Padhao:* Government of India launched its one of the most important campaign – Beti Bachao Beti Padhao (BBBP) in 2014, when the country was grappling with a deplorable sex ratio of 918 girls for every 1,000 boys. The BBBP campaigns aims to achieve multiple targets around girl child and women, which include balancing the Child Sex Ratio (CSR), promoting the importance of girl child, promoting girl child education, preventing gender discrimination and empowering girl child. Besides other interventions, awareness generation is key component of this campaign. The campaign took advantage of digital revolution for generating awareness in the society. It has a Facebook page and a Youtube channel. The campaign is promoting its cause though ads and other awareness material which are available at social media. With continuous increasing digitalization and internet connectivity, the campaign will also benefit in spreading its messages to millions of women and adolescent girls.

IV. DIGITAL HEALTH KEY INITIATIVES

Ministry of Health & Family Welfare has envisaged establishing a National Digital Health Eco-system to ensure and facilitate citizen centric health service, quality of care, better access, universal health coverage, including creation of interoperable Electronic Health Records (EHRs) of citizens, made available and accessible online to facilitate continuity of care, better affordability and better health outcome and better decision support system. Following are the key initiatives:

1) *National Digital Health Blueprint (NDHB*): The National Health Digital Blueprint is an architectural framework for digital interventions in Health in India - was released in October 2019 with vision:



"To create a National Digital Health Eco-system that supports Universal Health Coverage in an efficient, accessible, inclusive, affordable, timely and safe manner, through provision of a wide-range of data, information and infrastructure services, duly leveraging open, interoperable, standards-based digital systems, and ensuring the security, confidentiality and privacy of health-related personal information."

a) *National Digital Health Mission (NDHM):* On 15th August 2020, the Hon'ble Prime Minister announced the implementation of National Digital Health Mission (NDHM) in the country with a vision to create a national digital health ecosystem as proposed in NDHB.

2) *Hospital Information System (HIS):* HIS is being implemented for computerized registration and capturing EHR/ EMR of patients in Public Health facilities upto primary health care facility level. This will also facilitate workflow management leading to better delivery of services to patients and improvement in efficiency of processes in these facilities

a) *eHospital (NIC):* Implemented in more than 410 hospitals
b) *e-Sushrut (C-DAC Noida):* More than 100 Hospitals in State of Maharashtra, Odisha, Punjab, Telangana, Rajasthan and Delhi.

3) *Online Registration System (ORS):* Is a framework to link various hospitals for online registration, payment of fees and appointment, online diagnostic reports, enquiring availability of blood online etc. As on date, more than 250 hospitals including hospitals like AIIMS –New Delhi & other AIIMS (Jodhpur; Bihar, Rishikesh, Bhubaneswar, Raipur, Bhopal); RML Hospital; SIC, Safdarjung Hospital; NIMHANS; Agartala Government Medical College; JIPMER etc. are on board ORS. So far more than 36 lakh appointments have been transacted online.

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4) *MyHealthRecord System:* Is an online summary of individual's key health information such as prescription, lab test report, medical images, wellness parameters etc.

5) *Mera Aspatal (My Hospital):* 'Application is an IT based feedback system to collect information on patients' level of satisfaction using Short Message Service (SMS), Outbound Dialing (OBD), Web Portal, and Mobile Application. The application automatically contacts the patient (outpatient after the closure of the OPD and the inpatient at the time of discharge) using the above tools to collect information on patients' level of satisfaction. Currently more than 6000 hospitals have been covered in India.

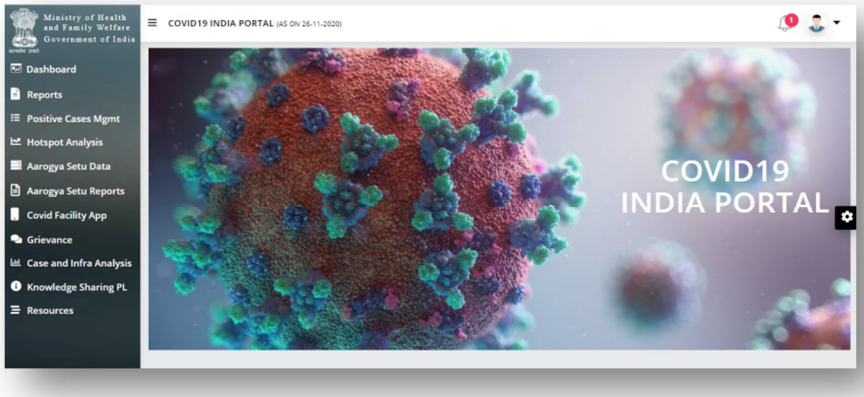
V. TELEMEDICINE

1) *Tele-medicine services in Health & Wellness Centres (HWCs):* Under the ambit of Ayushman Bharat Scheme, MoHFW is setting up 1.5 Lakh Health & Wellness Centres (HWCs) in States for providing preventive and promotive services. One of the components under services is providing Tele-medicine consultation service.
2) *Tele-Radiology (NIC-Delhi):* CORS (CollabDDS Online Radiology Services) is a web interface among different health communities for resolution of radiological and dental issues. CORS would is accessible to local as well as remotely situated doctors for seeking guidance from expert radiologists. Radiologists in return provide doctors with diagnosis/diagnosis reports.

VI. DIGITAL HEALTH INTERVENTION FOR COVID-19 PANDEMIC MANAGEMENT

1) *The "Telemedicine Practice Guideline":* March 2020 has been released and is now being implemented.
2) *eSanjeevani OPD-Tele-medicine services:* **The** upgraded 'eSanjeevaniOPD' application for doctor to patient tele-consultation service has been implemented on 13th April 2020 to facilitate and ensure health services to all citizens free of cost. Telemedicine services have been rolled out in 26 States.

3) *COVID-19 Dashboard:* A comprehensive real-time based IT platform 'COVID India Portal' (special surveillance system) was launched in March 2020 in response to COVID -19 pandemic, for monitoring the situation, preparedness and management to control the COVID in the country. This platform provides business intelligence (BI) tools based analytics, facts based decision support system, data collection up to facility level, dashboards, reports, integration with other applications.



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VII. CONCLUSION

Digital India is a ambitious project of the government and many schemes under this projects have started showing the successful results like MyGov, DigiLocker, Aadhaar and more recently Arogya Setu and Co-WIN applications. It has a promosing potential and will continue to benefit the country by generating employment opportunities, increasing speed and quality of service delivery, bringing transparency in the system. It will boost economy by creating innovations and ease of doing business. As every transformation is faced with some challenges, Digital India also needs to overcome its challenges to be successful in its true spirit.

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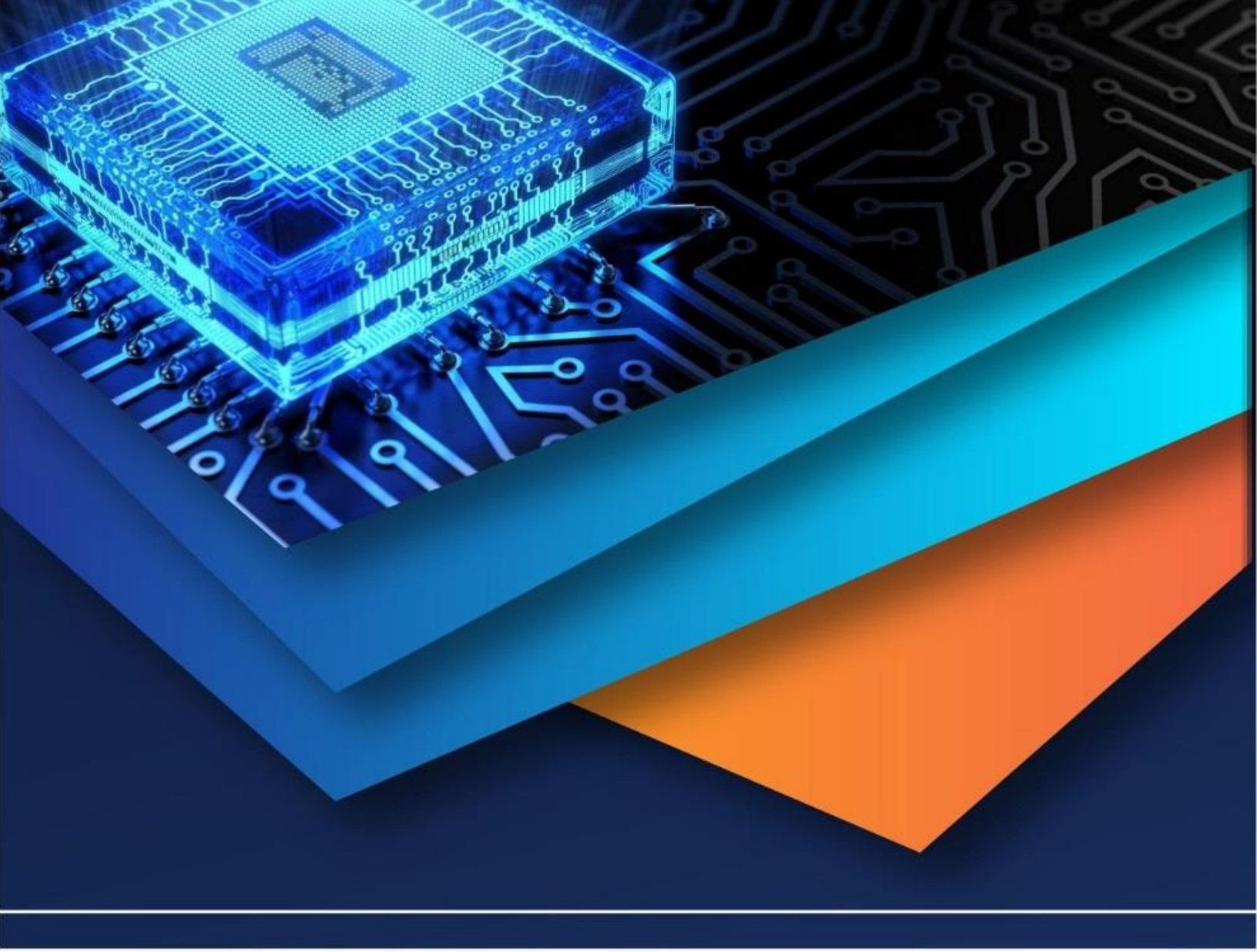

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