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Impact of Sagarmala Project on Indian Economy: A Critical Study

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Abstract: ***In The Indian economy ports are the main factors to doing trade between two or more countries. Ports cover miles of distance between countries and Indian ports are the bones of Indian exports in the terms of modes of transportation. Its major role is in sea transport, Inland waterways which pass through different seas and different rivers under inland waterways authorities. It boosts exports throughout the world for cheap transportation. Ports are the source where every ship comes for many purposes like exporting goods, maintenance, and halt where a particular amount of goods are shipped in specific ports. In this research paper, we use only secondary data find ands how the Sagarmala project is helping to grow the Indian economy through the ports and its connectivity infrastructure development.***
Keywords: Sagarmala Project, Ports, Road Infrastructure, Indian Economy, Employment

I. INTRODUCTION

The Sagarmala Project has been initiated by the Government of India after Cabinet approved it in 2015 to promote port-led development in India. The project aims to harness the 7500 km long coastline of the country to unleash its economic potential. The project also seeks to boost infrastructure for transporting goods to and from ports quickly, efficiently, and cost-effectively. Sagarmala Seaplane Services (SSPS) – It is an ambitious project, announced in January 2021, which is being implemented by Sagarmala Development Company Limited. The project is being initiated under a Special Purpose Vehicle (SPV) framework through prospective airline operators.

Through this programme the Indian government wants to develop 12 ports. This mission is mainly to improve the infrastructure of 12 ports and start commodities transfer through the sea transportation system. The Sagarmala Programme is the flagship programme of the Ministry of Shipping to promote port-led development in the country by exploiting India's 7,517 km long coastline, 14,500 km of potentially navigable waterways, and its strategic location on key international maritime trade routes.

A. Background of Sagarmala Project

India is a developing country with a GDP (Gross Domestic Product) growth rate of 7.3% (2018 to 2019). The Indian ports play a primary contributing role in this fast-growing economy. In fact, around 95% of merchandise trade passes through Indian seaports. However, the Indian ports still lag in multiple arenas when compared to international ports.

So, to finally do away with all the issues and develop it even further, the Ministry of Shipping decided to start a new program – The Sagarmala Project.

But, before we jump into the Sagarmala project details, let's take a look at the 3 major downsides that the Indian ports face today.

1) *Infrastructural Issues:* All the Indian ports require proper infrastructure to conquer operational challenges. Over the years, although the operational capability of Indian ports improved, it still had a long way to go to meet international standards.
2) *Turnaround Time:* The TAT (Turnaround Time) at primary ports for India is 2 and a half days. This exceeds by a gap of 24 hours compared to the global average time of only 1 to 1.5 days.
3) *Lack of Connectivity:* Ports along the Indian coastline are not well-connected because of which it takes more time for cargo to reach their destination. This further leads to congestion on the sea routes contributing to more delays, and slowing down the entire process. And, while roads and railways are always viable alternative for goods transportation, it increases the logistics cost and the price of the commodities.

Using a better interlinking for cargos via inland waterways will reduce transportation costs and the price of industrial commodities such as coal, iron ores, cement, steel, etc

B. Sagarmala Project Components

1) Port Modernization & New Port Development – extending the capacity of existing ports and developing new ports
2) Port Connectivity Enhancement – improving port-hinterland connectivity, optimizing cost and time of cargo movement through multi-modal logistics solutions including domestic waterways
3) Port-linked Industrialization – Developing industrial clusters close to ports and developing Coastal Economic Zones
4) Coastal Community Development – Promoting sustainable development of coastal communities through skill development & livelihood generation activities, fisheries development, coastal tourism, etc.
5) Coastal Shipping & Inland Waterways Transport – To move cargo through sustainable inland and coastal waterways mode.

C. Sagarmala Project Objectives

Reduction of the logistics cost of EXIM is the vision of the Sagarmala project. The objectives of the project are:

1) Decreasing the cost of transporting domestic cargo by optimizing the modal mix.
2) Identifying future industrial capacities near the coasts to reduce the logistics cost of bulk commodities.
3) Developing discrete manufacturing clusters close to ports to enhance export competitiveness.
4) Optimizing the time-cost of export-import container movement.
5) The project also seeks to lower the logistics cost of domestic cargo through optimized investment in infrastructure. The scheme also seeks to create up to 40 lakh new direct jobs and 60 lakh new indirect jobs.

The Sagarmala Programme was approved by the Union Cabinet in March 2015 and a National Perspective Plan was prepared by the Ministry of Shipping which was released on 14th April 2016. As of now, 500 projects have been identified at an estimated infrastructure investment of Rs. 3.55 Lac Crore across all the pillars. Out of these, 143 projects (worth Rs. 0.88 Lac Crore) have been completed, and 190 projects (worth Rs. 2.12 Lac Crore) are already under implementation. The remaining set of 167 projects is under various stages of development and the expected completion is well within 2035.

Implementation of these projects is being done by the Central Line Ministries, State Governments / Maritime Boards, and SPVs preferably through the private sector and through Public Private Participation (PPP) wherever feasible. Project theme-wise summary of projects under Sagarmala is given in the Table below:

D. Summary of Projects under Sagarmala

S. No	Project Theme	Total		Completed		Under Implementation	
		#	Project Cost (Rs. Cr)	#	Project Cost (Rs. Cr)	#	Project Cost (Rs. Cr)
1	Port Modernization	206	78,611	81	24,113	59	24,288
2	Connectivity Enhancement	201	1,28,786	38	9,416	88	91,157
3	Port Led Industrialization	34	1,42,457	8	45,300	23	96,046
4	Coastal Community Development	59	5,300	16	1,403	20	954
Total		500	3,55,154	143	80,233	190	2,12,445

II. COST EFFECTIVE FUNDING PLAN FOR IMPLEMENTING THE PROGRAM

Around 400 projects, including projects under construction, have been identified under the Sagarmala programme for port-led development in the country, requiring an investment of roughly INR 4.5 lakh crore. Out of the 397 projects, 111 projects are under implementation and 83 projects will be taken up only after FY20. Thus, financing for 203 projects worth INR 2, 86,000 Crore needs to be identified.

The breakup of the funding needs is as follows:

1) Around 75 road projects, worth INR 150,000 to 175,000 cr. will be primarily funded on a 50% basis by the National Highways Authority of India
2) Around INR 35,000 to 50,000 cr will be required for 44 rail projects

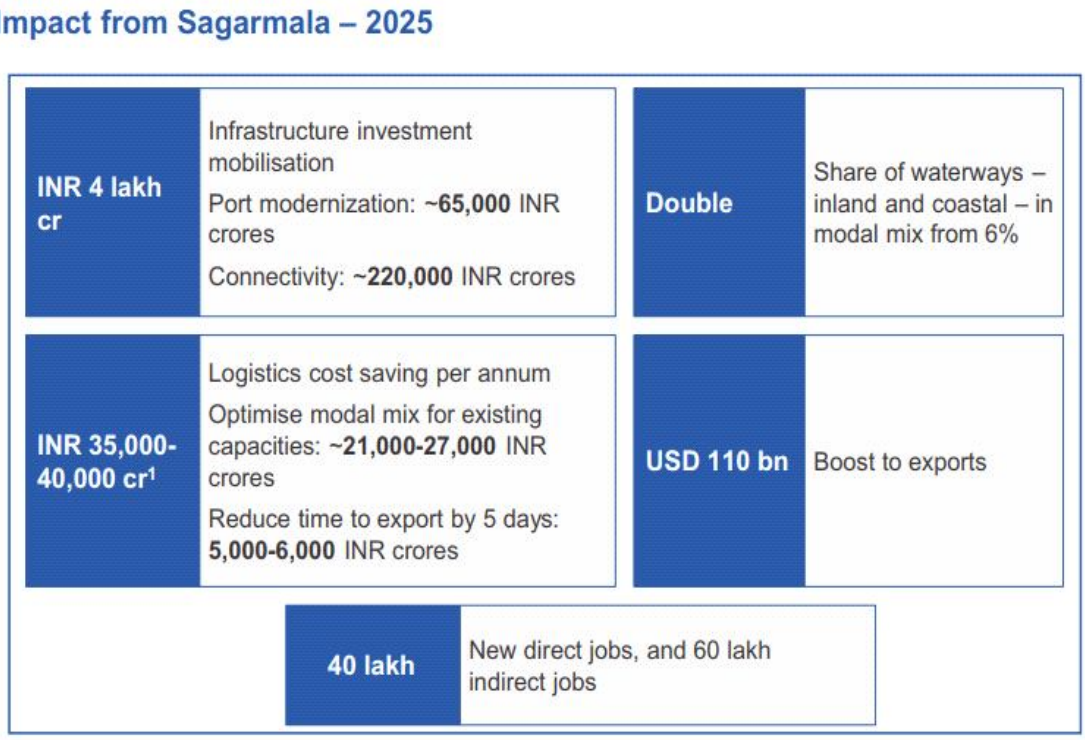
3) Around INR 4,500 to 6,000 cr is the estimated need for a heavy-haul railways corridor from Talcher to Paradip Port, which is suggested to be implemented in non-government railway mode.

4) The development of new ports, such as Paradip outer harbor, Vadhavan, Sagar, and Enayam, is estimated to cost around INR 25,000 to 35,000 crore and is suggested to be implemented on a landlord basis.

While multiple agencies take ownership of the projects under their purview, it is recommended that the major ports leverage alternative financing tools and lower interest rates. These include dollar-denominated loans and development bank financing.
Globally, dollar-denominated loans are a commonly used phenomenon, but in India, only the Jawaharlal Nehru Port Trust has used these. Similarly, development banks such as the World Bank, Asian Development Bank, and China EXIM Bank provide funding—loans as well as grants—for developing infrastructure related to ports. Both these forms of finance can be much cheaper (1.5 to 2.5 percent compared to >12 percent) compared to domestic market loans or capital markets.

A. Mission

The Sagarmala programme is the flagship programme of the Ministry of Shipping to promote port-led development in the country through harnessing India's 7,500 km long coastline, 14500 km of potentially navigable waterways, and strategic location on key international maritime trade routes. Sagarmala's vision can have a potentially transformative impact on India's logistics competitiveness and the wider economy. Key areas of impact are presented below.



B. Vision

Sagarmala is an ambitious national initiative aimed at bringing about a step change in India's logistics sector performance, by unlocking the full potential of India's coastline and waterways. The vision of Sagarmala is to reduce logistics costs for both domestic and EXIM cargo with optimized infrastructure investment. Sagarmala aspires to reduce logistics costs for EXIM and domestic cargo leading to overall cost savings of INR 35,000 to 40,000 cr. per annum. Some of this will be direct cost savings, while others are savings from inventory-handling costs resulting from time (and reduced variability) in the transportation of goods, particularly containers. These cost savings apply to current industrial capacities as well as future coastal proximate capacities for energy, material, marine, and discrete industries that could come up through port-linked industrialization. In addition, Sagarmala aspires to reduce carbon emissions from the transportation sector by 12.5 MT/annum.

III. REVIEW OF LITERATURES

-R. Sharma (Indian Institute of Technology Madras) and O.P. Sha (Indian Institute of Technology Kharagpur) January 2008 "Analysis of port operations and planning for the development of an integrated container shipping model for Indian ports" In this journal the author found the problems of ports and their accommodation and efficiently economically handle future container cargo traffic.

-Dr. J. Rengamani (Associate Professor, AMET business school, AMET University) and V. Venkatraman (Research Associate, AMET University) "A study on the performance of major ports in India" Indian ports growth rate 11% annually has shown lower growth rates. Its major factor helps to grow the port's development.

-J G R Monteiro, June 26-July 9, 2010 "Measuring productivity and efficiency of major ports of India" In this research paper we found how problems of productivity and efficiency affect their operation and also various measures of productivity and efficiency of 12 major ports of India through use of data envelopment Analysis.

-Sanjeev Abraham George, Anurag C. Tumma 10 February 2020 "A benchmark study of Indian seaports" This study paper discusses how Indian ports are not using their 100% efficiency.

-Press Information Bureau Government of India cabinet 25 March 2015, "Sagarmala: Concept and Implementation towards blue revolution.

IV. RESEARCH METHODOLOGY

Types of research; Descriptive research, Data collection; Secondary data for published data, Period of study; 2015-2025, Area of research; Ports, Infrastructure, Indian economy.

A. Analysis

1) Total number of ports in India from the financial year 2010 to 2021

Characteristics	Number of Ports
FY-2021	224
FY-2020	224
FY-2019	224
FY-2018	217
FY-2017	217
FY-2016	217
FY-2015	217

(SOURCE: http://data.gov.in)

2) Number of non-major ports in India in the financial year 2021 by state and union territory.

Characteristics	Number of non-major ports
Gujarat	48
Maharashtra	48
Andaman & Nicobar	24
Kerala	17
Tamil Nadu	15
Odisha	14
Andhra Pradesh	13
Karnataka	12
Lakshadweep Islands	10
Goa	5
Puducherry	3
Daman & Diu	2
West Bengal	1

(SOURCE: http://data.gov.in)

3) *Capacity of all Indian ports major and non-major ports during 2020 (from the Ministry of Shipping)*

Particulars	Projected Capacity
Major Ports	1455.42
Maritime States	1674.62
Total	3130.04

(SOURCE: http://data.gov.in)

4) *Total volume of cargo handled in ports across India from the financial year 2011 to 2021(In million metric tons)*

Characteristic	Volume in million metric tons
FY-2021	1249.99
FY-2020	1319.97
FY-2019	1281.78
FY-2018	1208.56
FY-2017	1133.69
FY-2016	1071.76
FY-2015	1052.23

(SOURCE: http://data.gov.in)

5) *Total traffic handled during 2012-13 and 2013-14 in 12 major ports in India are given in the table*

Total traffic at major ports	2012-13	2013-14
Kandla Port	93619	87005
Mumbai Port	58038	59184
JawaharLal Nehru Port	64488	62333
Mormugao Port	17738	11739
New Mangalore Port	37036	39365
Cochin Ports Portwise	19845	20886
V.O. Chidambaranar Port	28260	28642
Chennai Port	53404	51105
Kamarajar Port	17885	27337
Paradip Port	56552	68003
Visakhapatnam Port	59038	58504
Kolkata and Haldia Port	39928	41386

(SOURCE: http://data.gov.in)

6) *Volume of total cargo handled across India in the financial year 2021, by major port (In million metric tons)*

Characteristic	Volume in million metric tons
Deendayal	117.57
Paradip	114.55
Visakhapatnam	68.84
J.L. Nehru	64.81
Mumbai	53.32
Haldia D.C.	45.47
Chennai	43.55
New Mangalore	36.5
Chidambaranar	31.79
Cochin	31.5
Kamarajar	25.89
Mormugao	21.99
Kolkata D.S.	15.9

(SOURCE: http://data.gov.in)

7) *Average turnaround time across major ports in India from the financial year 1991 to 2021 (in days)*

Characteristic	Average turnaround time in days
FY-2021	2.18
FY-2020	2.12
FY-2019	2.73
FY-2018	2.91
FY-2017	3.48
FY-2016	3.51
FY-2015	3.89

(SOURCE: http://data.gov.in)

8) *Preview of a project-wise project funded by the ministry under the Sagarmala programme(In reply to the understanding question on 5 April, 2022)*

S.NO.	Name of Project	Project Pillar	Project Category
1	2 to 4 lanning of port road connectivity to NH-5-Phase II	Port Connectivity	Road
2	Construction of coastal Berth at VPT	Coastal Shipping and IWT	Coastal Infrastructure
3	Centre of Excellence in Maritime and Shipbuilding - CEMS-AP-18 Out of 24 Labs in AP	Coastal Community Development	Technology Centres
4	Coastal Districts Skill Development Programme-Phase-I-Andhra Pradesh	Coastal Community Development	Skill Development
5	Construction of grade separator from H-7 area to Port connectivity Road by Passing Convent Junction- Visakhapatnam Port	Port Connectivity	Road
6	Development of a fishing harbor in Juwaladinne in SPSR Nellore District in the state of Andhra Pradesh	Coastal Community Development	Fisheries
7	Coastal District Skill Development Programme-Phase-2- Andhra Pradesh	Coastal Community Development	Skill Development
8	Construction of passenger jetty at Bhavani Island-Krishna District	Coastal Shipping and IWT	RO RO and Passenger Jet
9	Improvement of Kakinada Anchorage Ports infrastructure in East Godavari district, Andhra Pradesh	Port Modernization	Port Modernization Non-Major Port

(SOURCE: http://data.gov.in)

9) *Preview of port connectivity roads under Bharatmala/Sagarmala (In reply to understanding question on 15 March 2021) (from : Ministry of Road Transport and highways)*

S.NO.	Name of Port Connectivity Road	Approx Length
1	Beypore road connectivity to Malaparamab beach	18
2	Road from Payikulangara to Alappuzha bypass	14
3	Road from Azhikkal to Puthuvalappu	14
4	Azhikkal Port- Proposed NH- Bypass and widening of 2km	13
5	Road from SH-Alappuzha bypass intersection	12
6	Road from Mudhiyam Beach to Madhura Bazaar	12
7	Road from Payyabalam to Azhikkal	12
8	Road from Madhura bazaar to Chullikad	10
9	Road from fort Vypin to Matysyafed tourist office	9

(SOURCE: http://data.gov.in)

10) Preview of State/UTs- wise projects funded under the Sagarmala Scheme (In reply to Unstarred question on 14 December, 2021)

S.NO.	State/UTs	No. of Port(2021)	No. of Project(2019)	Port Modernization Pillar Under Sagarmala (2022)	Total cost of Project (2022)
1	Andaman and Nicobar Islands	7	1	7	203.94
2	Andhra Pradesh	9	29	6	374.75
3	Daman & Diu	2	—	2	92.34
4	Goa	6	16	2	34.87
5	Gujarat	9	32	6	762.42
6	Karnataka	9	24	5	389
7	Kerala	6	19	3	58.19
8	Maharashtra	45	75	35	1102.66
9	Odisha	4	—	2	164.06
10	Puducherry	1	—	1	44
11	Assam	—	1	—	—
12	Lakshadweep	—	1	—	—
13	Bihar	—	1	—	—

(SOURCE: http://data.gov.in)

11) Preview of 'Project-wise list of Project under implemented and under development funded by the ministry under Sagarmala programme (In reply to understand question on 2 August, 2022)

S.NO.	Name of Projects	Project Cr.
1	Development of fishing harbour in Juvvaladinne in SPSR Nellore district in the state of Andhra Pradesh	288
2	Coastal districts skill development programme-Phase-II-Andhra Pradesh	6
3	Construction of Passenger jetty at Bhavani Island-Krishna district	22
4	Improvement of Kakinada Anchorage Ports infrastructure in East Godavari district Andhra Pradesh	85.83
5	Development of Passenger jetty Seaplane jetty and upgradation of existing jetty at Kakinada	72.48
6	Construction of a passenger jetty at Bheemuni patnam	78.99
7	Construction of a passenger jetty at Kalingapatnam	72.45
8	Modernisation of Visakhapatnam fishing harbour	152.81

12) Preview of project-wise project funded by the minister under Sagarmala Programme (In reply to understand question on 5 April, 2022)

S.NO.	Name of Project	Project Pillar	Project Category	Implementing Agency	Project Status	Project Cost (Rs. Cr.)	Fund Sanction (Rs. Cr.)
1	2 to 4 landing of port road connectivity to NH-5-Phase-II	Port Connectivity	Road	NHAI	Completed	77	20
2	Construction of coastal berth at VPT	Coastal Shipping and IWT	Coastal Infrastruc-ture	Visakha-patnam Port trust	Completed	43	30
3	Centre of excellence in Maritime and shipbuilding CEMS-AP-18 out of 24 labs in AP	Coastal Community Development	Technolo-gy Centers	IRS	Completed	574	37.6
4	Coastal district skill development programme-Phase-I-Andhra Pradesh	Coastal Community Development	Skill developm-ent	Ministry of rural developm-ent (DDU-GKY)	Completed	0.28	0.28
5	Construction of grade separator from H-7 area to port connectivity road by passing convent junction-Visakhapatnam port	Port Connectivity	Road	NHAI	Completed	60	29.96
6	Development of fishing harbour in juvvaladinne in SPSR Nellore district in the state of Andhra Pradesh	Coastal Community Development	fisheries	Fisheries departme-nt GoAP	Under Implementati-on	288	72
7	Coastal district skill development programme-Phase-II-Andhra Pradesh	Coastal Community Development	Skill developm-ent	Ministry of Rural Development (DDU-GKY)	Under Implementation	6	5.98
8	Construction of passenger jetty at Bhavani Island-Krishna district	Coastal Shipping and IWT	Ro Ro and passenger jetty	Andhra Pradesh Tourism Development Corporati-on	Under Implementation	22	10
9	Improvement of Kakinada Anchorage ports Infrastructure in East Godavari district Andhra Pradesh	Port Modernization	Port Modernization non-major ports	Andhra Pradesh maritime board	Under Development	85.83	42.92

(SOURCE: http://data.gov.in)

13) *Preview of state/UTs-wise financial Assistance provided to various state governments and other beneficiaries under the Sagarmala Programme (In reply to an unstarred question on 8 February, 2022)*

State/UTs	No. of Project	TPC (Rs. Cr.)	Fund sanctioned from Sagarmala (Rs. Cr.)
Andaman and Nicobar Islands	7	203.94	203.942
Andhra Pradesh	12	1394.2	278.735
Daman & Diu	2	92.34	46.17
Goa	6	117.83	52.67
Gujarat	10	1534.99	830.58
Karnataka	9	777	254.86
Kerala	6	127.99	48.17
Maharashtra	46	2082.5	829.16
Odisha	4	218.06	88.205

(SOURCE: http://data.gov.in)

Above data represented how the Sagarmala project completed within a time period with their categories under the different projects which have been different motives as per their needs in the actor or connectivity for purpose of ports development with some other projects interrelated like Bharatmala and Parvatmala projects are helped to each other for the betterment of transport infrastructure.

V. CONCLUSION

Our Indian economy is probably dependent on sea transportation and trade passing through the sea. Throughout sea transportation, 95% of merchandise trade passes through Indian seaports. Sagarmala projects are creating 40 lakh new direct jobs and also 60 lakh jobs are being created indirectly in India. It is also reduced to the day of transportation and boosts the export worldwide with the highly effective amenities. The Sagarmala project reduces the turnaround time when it is totally completed in 2035 which is a targeted year with also developed linkage connectivity with the ports. Their impact on Indian exports grew in sufficient time and helped to achieve the Indian economic target.

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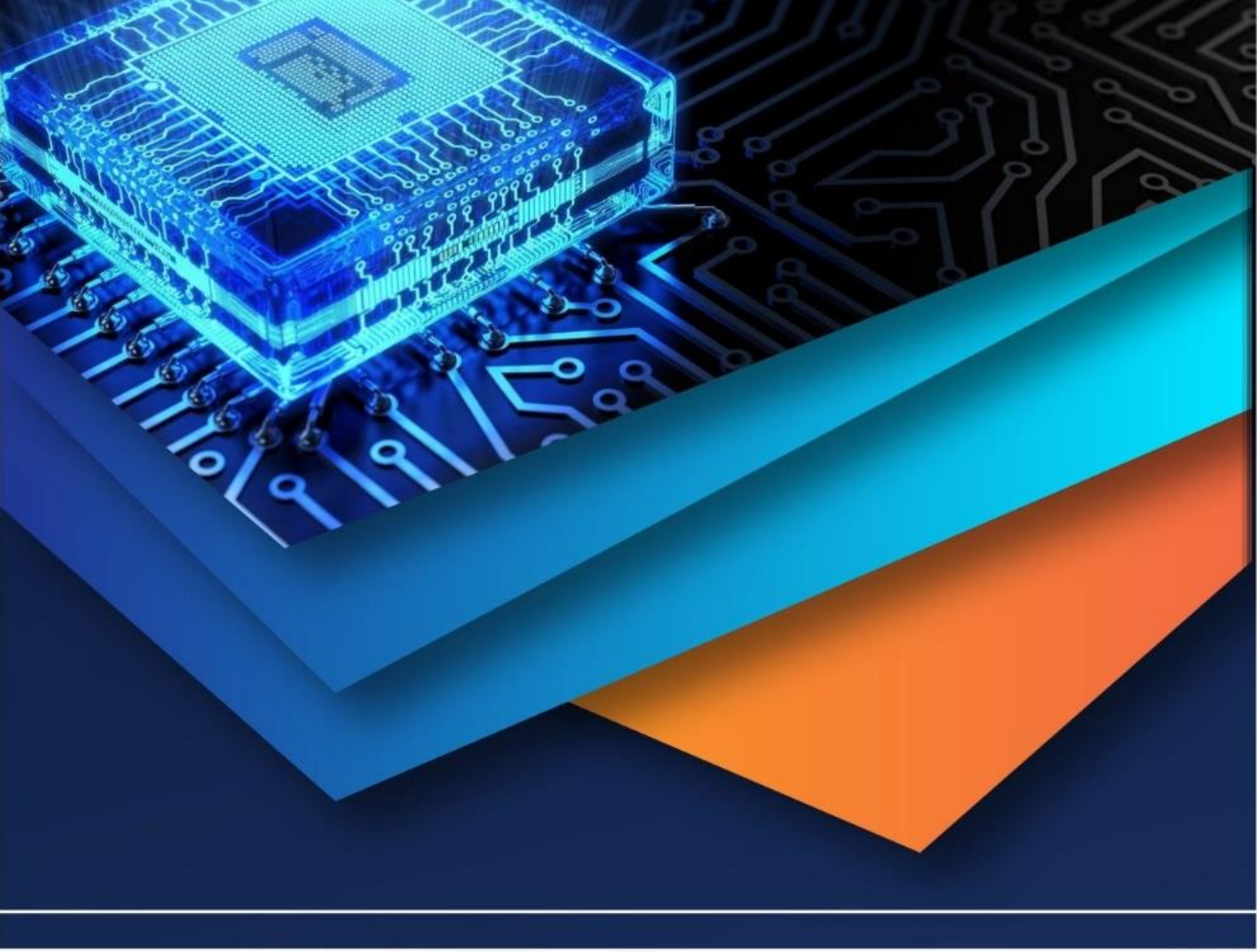

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