



BIZTECH

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Union Budget To The Moon!

A forthcoming era of augmenting productivity

With the country's union budget, for the financial year 2022-2023, unveiled by the Ministry of Finance, the layout amounted to a sum of Rs. 39.45 lakh crores outlining numerous initiatives and critically committing to enhancing productivity, heightening development & enhancement, creation of job opportunities, and capitalisation to integrate global value chains. With procurement and declaration of enhancing key elements following the trail of an increment in the capital expenditure by an astounding 35%, signifying a giant leap forward in the areas of development and enhancement.

With the fundamentals of maximizing the returns from the creation of opportunities and initiatives implemented, investments will continue to be a major driver for growth with speculations of establishing businesses facile increasing efficiency driving growth in regards to the financial sectors of the economy. The vision of interpreting these drives into sped-up foundation advancement on the ground that accelerates up movement

brings down coordinated operations costs and widens computerized admittance by drawing in private speculation. The union budget's aim for an "ease of living" and an "ease of doing business", will envision the development of multiple factors including Urbanisation, Urban planning, transformation and enhancement of the telecom sector, sunrise opportunities, green clearances, and numerous other sectors proving to benefit from the driven union budget.

Facilitation of enhancement of the upcoming evolution in the telecom industry, with an introduction to 5G, is expected to boost up the segment's economy following to build a strong eco-system with the launch of a design-led manufacturing scheme. With the attention to green energy sources, Solar power sector will allocate a sum of Rs. 19,500 crores as a production-linked incentive for manufacturing of high efficiency solar modules. An increase in the defence budget, will provide an opportunity for a major push in the development of military platforms and procurement of militarised weapons. The union budget will fix well to adhere to the norms of development and transformation of the Indian economy.

- Krisharth Deepak Misra



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Digital Rupee, Not Cryptocurrency

Welcome to the age of digitalization

There has been a lot of babble and muddle about digital currency, From the time when our finance minister blazoned about this in her 2022 budget speech. The question of how digital currency differs from bitcoin and what exactly is digital rupee has been a source of consternation and is been sitting at zenith as a dilemma.

As a cryptocurrency, digital currency cannot be mined. It is backed by the Reserve Bank of India and is under its supervision. The digital rupee is a digital interpretation of the currency that can be traded for regular cash, as and when the inception of rotation gets initiated by RBI which is scheduled to be by the year 2023. Blockchain technology underpins the digital rupee and It's akin to a digital wallet or a NEFT. It may be used in a variety of transactions and trades, as well as transferred internationally.

Cryptocurrency varies from digital money in a number of ways, the elite notable alteration is that it is not regulated by any authority and is instead supported by its community of users. Although cryptocurrency is inherent in the blockchain metaverse, it is distinct in that it cannot be used outside of the blockchain, unlike the digital rupee, which is lawful to use outside of the network. Encryption is a critical component of crypto as there's an issue of cyber security, whilst digital rupee

does not require any sophisticated encryption methods. Transparency and stability can also be considered to areas that differ.

This digital currency can be used to examine how the meta of technology is growing in ways that not only meet but even exceed comfort requirements. A look ahead to the debates and points of view on whether digital money will be a success and remain active after its debut in 2023.



Informational fact: Our finance minister has imposed a 30% tax on income from all virtual currencies.

-G.V. Ashwith

Source link: <https://www.cibtech.it.com/cryptocurrency/digital-currency-vs-cryptocurrency-what-is-the-difference-12611902.htm>
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Defence export's quantum leap

An expeditious transfiguration

India's progress in the defence sector has been forthright with its defence exports increasing nearly six folds between the year 2017 and 2021. The upright decision of the Modi government to emphasise on sustaining defence exports and stating that world's largest democracy cannot remain dependant on imports for its security, the radiant growth since 2014 has been remarkable and noticeable by all. Recorded growth comparison from the year 2017, which had an estimated export of Rs. 1,520 crores, to the year 2021, having an estimation of Rs. 8,435 crores, is astounding and serves as an undisputed proof of development and growth.

off-shore vessels and more setting a clocking target of \$5 Billion by the year 2024. India is ready to grow its impression in unfamiliar defence markets following a note of the BrahMos deal acquiring numerous potential buyers in the Asian and African countries, establishing its growing presence worldwide.

With the Ministry of Defence informing two positive indigenization arrangement of an aggregate of 209 things for which there would be a ban on import past the timeline demonstrated against them, this will serve to be a major advancement towards achieving an unconstrained and self-reliant defence sector. With India's focus on boosting export following a renewed thrust to achieve its set target, assimilating the growth of its defence exports, its path remains to be on a beneficial high-rise.

- Krisharth Deepak Misra



Recorded growth comparison from the year 2017, which had an estimated export of Rs. 1,520 crores, to the year 2021, having an estimation of Rs. 8,435 crores, is astounding and serves as an undisputed proof of development and growth. Defence exports incorporate numerous items such as missiles, advance helicopters, personnel protective gears, radars,



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Inclusive growth

Where nobody is left behind

The pandemic has severely affected the poor and hurt the middle class in terms of loss of accumulated wealth and savings. It has worsened the poverty situation in India. The



world inequality report (WIR) 2022 has shown that the world's most extreme inequality has been observed in India. According to the WIR, the top 10 per cent of the country's population account for 57 per cent of the national income, of which, 22 per cent is held by the top 1 per cent. While a small section of India's populace enjoys 5-star privileges, for the bottom 50 per cent sustainability of life is still a challenge.

The process of inclusive growth is a way to eradicate these inequalities and generate employment opportunities. It helps in reduction of poverty and in providing equal opportunities to all. Rural inequity, agricultural backwardness, and unemployment are just a few of the challenges India faces as it pursues inclusive growth. India's people are primarily reliant on agriculture, which adds to the country's high unemployment rate. Since more than 80% of people work in the informal sector and are not covered by social security, the quality of

employment is an issue. Agriculture employs about 44% of India's population but only accounts for 16.5 percent of GDP, resulting in widespread poverty. These challenges are what that obstruct India's process of achieving inclusive growth, therefore it's crucial to identify, admit, and overcome them.

Although inclusive growth is difficult to attain, it is a necessary step for the country's improvement. It will aid in the empowering of disadvantaged and marginalised groups, as well as improving livelihoods and enhancing women's skill development. In order to foster inclusive growth, the Indian government is implementing many schemes such as the Mahatma Gandhi National Rural Employment Guarantee Act Scheme (MGNREGA) and the Mudra Bank Scheme. These schemes bring India a step closer to achieving inclusive growth.

-Alekhya Madoori



Article:

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Images:

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Gatishakti

A booster dose to the 100 trillion worth of infrastructure projects.

As the name pertains, Gati - Mobility; Shakti - Energy, this master plan which was announced in October 2021 aims to enhance the coordination and monitoring standards in planning and execution of transport and energy sectors by bringing 16 ministries together, in turn reducing the connectivity hiccups and logistic expenses. Gatishakti will have 200 types of databases which include physical facilities, rail, road, gas line, health, police force along with water bodies, reserve parks and forests mapped by Geographic Information System.

Gatishakti aims to formulate expressways to ease the movement of goods and people which is to be catalysed by data exchange among all the moderators on the Unified

Logistics Interface Platform. This platform provides real-time information to all stakeholders. The plan aims to expand the national highways network by 25000 KM by spending Rs. 20000 crore.

Railways to develop efficient logistic services for MSMEs by integrating and developing the postal and railway networks which include the manufacture of 400 Vande Bharat trains and setting up 100 Railway Cargo terminals for multimodal logistic services in the coming 3 years. To spotlight local businesses and supply chain networks, One station - One product method to be introduced.

Parvatmala is an ecologically sustainable alternative in transportation especially in hilly areas, National Ropeways development Programme to lead this initiative. This also boosts the tourism sector.

The infrastructure sector is to be upgraded with technical support from the Capacity Building Commission, central and state ministries to inflate the capacity in planning, design, and finance.

On the flip side, the declining credit offtake trends and Bankruptcy code has capitulated to about Rs. 2.4 lakh crore of recovery on bad loans. The lack of private demand and investment demand amid post-Covid scenarios are a few concerning factors in the effective implementation of this master plan.

- Surya Vamshi

GatiShakti **Pragati Bharat Ki Gati Shakti**
Connecting Pillars of New India

- To cover infrastructure initiatives like Bharatmala, Sagarmala, Ports, UDAN, Economic Zones, Railways etc
- Social infrastructure such as hospitals, universities to be integrated in the next phase
- To develop new possibilities for the creation of future economic zones

Reference Link
<https://bit.ly/36jMGSD>
Image from: burst.shopify.com

In August 2021, the government has reported that the FDI equity inflow to India has increased by 168% in the first quarter of 2021/22 financial year from 6.56 billion US\$ to 17.57 billion US\$ between April and June in the years 2020 and 2021. To improve the FDI inflows in the country, the Indian government is considering easing scrutiny on certain foreign direct investments of specific countries, the Department for Promotion of Industry and Internal Trade is in the process of seeking approvals from the cabinet on making changes in the Insurance sector by allowing FDI up to 20% in the LIC of India. Activity Bill 2022 is expected to enhance the scope of FDI in the Indian space sector.

FOREIGN DIRECT INVESTMENT IN INDIA

To curb the acquisitions of Indian companies during the covid pandemic, the Indian government has brought in restrictions on investments from countries sharing land borders with India which made investments from such countries to mandatorily have a foreign investor as a precondition to submit the investment proposals, after and only undergoing strict government approval processes an investment can be processed

Sector-wise FDI inflow

Which Indian sector gets most amount of FDI inflows?
Sector-wise highest FDI equity inflows (₹ Cr.) and % share [FY20]



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In September 2021, India and the UK agreed for a speculation lift to reinforce reciprocal ties for an 'Upgraded Trade Partnership'. Also, the Union Cabinet reported that to help the telecom sector, they will permit 100 per cent FDI by means of the course, up from the past 49%. In August 2021, the public authority changed the Foreign Exchange Rules, 2019, to permit the 74% expansion in FDI limit in the defence sector.

As per Deloitte report, India remains an attractive market for international investors is expected that India would be attracting foreign FDI of US\$ 120 - 160 billion per year by 2025.

-Surya vamshi

*Services sector includes Financial, Banking, Insurance, Non-Financial / Business, Outsourcing, R&D, Courier, Tech, Testing and Analysis

<https://www.ibef.org/economy/foreign-direct-investment.aspx>

<https://www.pinsentmaso>

Image source : <https://d3hvjv6gmjgkcloudfront.net/images/2021/03/Sector-wise-FDI.png>

<https://d3hvjv6gmjgkcloudfront.net/images/2021/03/Sector-wise-FDI.png>

Revolutionising Cryptocurrency: Smart Move?

A sigh of relief for the stakeholders.

Following the announcement of Union Budget 2022-23, The Finance Minister Nirmala Sitharaman imposed a 30% fixed tax rate on the income generated through crypto trading along with the introduction of Digital Rupee.

Digital Rupee the game-changer for the Indian economy, is supposed to be the Country's first Central Bank Digital Currency (CBDC) project which is to be regulated and monitored by the Central government. As this type of currency lacks proper authority, the Reserve Bank of India will take complete guarantee just like it does for any other physical currency. The Ministry of Finance has proposed a tax of 30% on the trading of all virtual assets like cryptocurrency and Non-fungible tokens(NFT). Mrs. Sitharaman also elaborated the taxation model for such currencies stating that a certain monetary threshold will be liable for a 1% TDS (Tax Deducted as Source) deduction. This helps the authorities to keep a check on such unauthorised currencies.

Many important stakeholders have called for more clarity on cryptocurrencies, especially taxes and GST laws. With these events, it is evident that the government has no plans to "ban" cryptocurrencies anytime soon. The inclusion of virtual assets in the national budget, as well as the application of precise tax laws, has given investors a reason to be carefree about their investments. Apart from that, stakeholders such as CoinSwitch Kuber have shown their interest in the government's approach to the acceptance of cryptocurrencies. They also mentioned their aspiration to work with the government to bring crypto-asset taxation at par with other asset classes.

Most crypto investors welcomed the adoption of a 30% tax rate, even if it is higher than that of other asset classes such as equities or bonds. Following a period of unprecedented uncertainty over the destiny of virtual currencies, most people are relieved that cryptocurrencies are here to stay.

- Pusarla Bhuvan Sathvik & Dheeraj Anchuri

India's Sunrise Division Adjudication

India to hierarchize Sunrise sectors to help attain superior revenue trajectories.

On Saturday, Finance Minister Nirmala Sitharaman implored India's industrial leaders to engage or rather kick-start the pious iteration of expansion, declaring this Budget generalship of pressing elevated equity outlays has been geared at assisting the rehabilitation, benefiting from the multiplicative influence, as well as crowding in non-government assets across infrastructural development. The minister went on to state that the administration has renewed the financial advantage of a reduced organisational federal income percentage to novel production modules for another period, until early April 2024. Apart from that there are numerous sunrise industries in which India has already obtained the initiative, vaccines, genome sequencing, aeronautics, and nuclear technology. India has also demonstrated its acumen in digitalization, with entrepreneurial ventures representing a major source of advancement and novel concepts.

Narendra Modi remarked that the concentration of that forthcoming financial year's allocation will be on emerging industries, along with strongly urged business leaders to pay attention to that as well. Engineering as well as innovation is hardly a separate division in the perspective of the administration. This concept is connected to sectors such as contemporary economics as well as financial technologies within the economic sphere. On the contrary, Modi stated that advanced technologies perform a significant function in infrastructures as well as governmental provision of services. He highlighted United States President's recent speech in which he emphasises the influence of

Reference Links:
<https://bit.ly/3i7zFyr> | <https://bit.ly/3w4BCE8>



"Atmanirbhar bhara", noting that industrialised nations such as the United States are already addressing it. He highlighted housing development, trains, airports, canals, and fiberoptic cables as areas where money is being deployed. He also invited suggestions on effective usage of technology in such crucial aspects.

Narendra Modi particularly urged the privatised corporations in these sectors to assist, guide and embrace most of the new laws for geographic information usage as well as the limitless potential which has arisen as a result of this legislation.

- Deepshika Y

Photos by Mister Fotofreak from
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Lessons from the Russo-Ukraine war In The Business Context

Rancho in 3 idiots said, "gyaan har jagah bikhra pada hai, jahan se mile, lapet lo".

War changes lives; and nothing different has happened now that Russia declared a war on Ukraine following years of strife. One would think that after two world wars and a better knowledge of the devastation that a war can bring, they would put an end to it. There may not have been any learning for them, but there are some for us.

As business students, the most crucial thing is to learn from mistakes and identify opportunities. Sure, unfamiliar territory and challenging atmospheres induce distress, but that is precisely what leads to the emergence of new leadership. And once you have an opportunity, strategize. Leaders need not be a person of great influence, but someone who demonstrates respect for values; because be it a business or a situation of war, values reside in people and people act when their values align with the leaders'

strategic goals. President of Ukraine, Volodymyr Zelenskyy, rose to the occasion with the leadership he devised in the middle of lost hope and chaos, and became a 'hero' overnight.

VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) is a term that can be used in the context of both, military and a workplace, because soldiers and employees who display VUCA qualities adapt swiftly to any situation and display efficiency. VUCA comes with experience, and the military emphasizes that experience is just as vital as training for development of personnel.

Ultimately, the success of the project depends on all the stakeholders' outlook. Are they willing to make trade-offs for long-term profits or would they rather win the battle but lose the war.

- Anushka Johari

Chip shortage

A crisis for the better

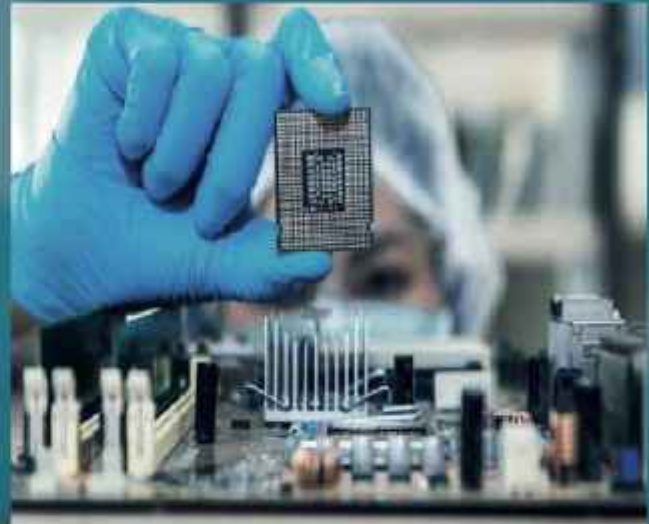
The semiconductor chip shortage has brought global manufacturing to a halt as they are the most fundamental component of practically every electronic device, we use from our mobile phones to cars to data centers and crypto mining everything requires semiconductors and the shortage has massive consequences with industries like auto losing more than \$ 500 billion, with manufactures like Qualcomm expecting the shortage to last 2 years it is time for an intervention

What happened?

Chip making is a complicated process that takes up to 4 months from design to finished product using 500 different machines, with more than 1000 steps performed inside vacuum-sealed rooms. The cost of setting up a fab(chip manufacturing unit) is \$ 3-4 billion dollars and 90% of the world supply comes from Taiwan, TSMC(Taiwan semiconductor manufacturing company) is by far the biggest supplier and has a whopping 54% market share supplying to companies like Apple, Nvidia, In 2020 with the adoption of 5g devices and EV manufacturing boom and crypto mining the demand for semiconductors was already high with the pandemic lockdowns the supply shrank severely and most manufactures are fatally back-ordered.

The road ahead:

Like with any crisis it brings opportunities, the shortage has world Governments shaken and brought forth the rude consequences of outsourcing of critical commodities just for the economic benefit of it. The US Senate announced a \$ 50 billion spending bill and another \$ 80 bn billion bill in the Senate, which plans to subsidise the cost of setting up a plant by 50%. Indian cabinet also announced a \$ 10 billion package to boost semiconductor



manufacturing through PLI's(production linked incentives), DLI's(design linked incentives) under "India semiconductor mission"50% support to project setup costs for 2 semiconductor units and 2 display fab units50% expenditure towards Design linked incentives for homegrown fabless manufacturing units and 4-6% product deployment linked incentive 30% of expenditure towards supporting compound semiconductor ATMP (Assembly, testing, marking, packaging) units.

This plan could prove a great boon to the Indian manufacturing sector with the addition of manufacturing jobs, India will attract global investment in the electronics manufacturing industry, and more importantly, supports the Government's grander vision of being Atma Nirbhar in a commodity as essential as semiconductors.

- Harsha Vemula

Source: <https://www.business-standard.com/article/economy-politics/psu-crisis-75-000-cr-plan-to-woo-chip-makers-creates-semiconductor-ecosystem-12112160048>
J. Itanium obliquam erat volutpat.

A Transition to Cleantech

Future Being Green

Cleantech can be described as the technology that reaps benefits while both protecting and enhancing the environment. Cleantech can help to mitigate the threat of global warming, which is increasingly unavoidable. In compared to profit, sustainability is regarded more important when it comes to cleantech. Many nations are promoting cleantech since the implications are well-known.

India is the world's second-largest country by population, one of the fastest-growing countries and adopting technologically. So, there is an obvious need to contribute its part in protecting and ornamenting environment. The initiation of this can be seen in the announcement of this year's budget by our financial minister "Nirmala Sitharaman" stating India will thrive on to augment clean tech and raise renewable energy up to 175 GW. If this occurs, India will transcend the milestone of surpassing the Paris Agreement Treaty.

India can take this a step further by enacting new rules or allocating resources. Cleantech research and development should be boosted to ensure long-term viability. Bringing in a hydrogen revolution to negate the use of harmful gases and promote green hydrogen. This progress can be aided by the allocation of a tax cut on hydrogen and providing apposite infrastructure for its travel. Increased use of renewable energy in battery switching and electric car charging should be prioritized for green cause. Budgeting decisions should be made in



favor of investing more in smart grids, which can facilitate in the integration of renewable energy. This will not only contribute with cleantech, but it will also serve as a profit generator in the future.

The need of conserving our ecosystem not just for its own sake, but also for our own longevity, is well understood. So, for the future to be green the transition into cleantech is essential.

- G.V. Ashwith



Reference 1: <https://cleantax.in/g/terms/cleantech>
Reference 2: shorturl.at/jmEF9
Image 1: bit.ly/36guk5
Image 2: bit.ly/3lpe5a9
Image 3: burst.shopify.com

Centralized & Decentralized Process of Recruitment

Acquiring the right talent in the right way

Today, around 50% of all companies utilize a centralized recruitment system, but that does not mean it is the best plan for every company. In a centralized recruiting process, all recruitment tasks are handled by a single unit which is the Human Resource (HR) department. The training and development of a company's staff, who are regarded some of the company's most valuable resources, is the responsibility of the human resource department. The purpose of the human resource department is to ensure that the company's personnel are well-managed, well-paid, and well-trained. Recruiting, hiring, firing, and administering benefits are all responsibilities of the department.

Many businesses prefer centralized processes because they tend to work faster. Because the centralized recruitment process uses the same approach for all units, it ensures fair hiring practices and equal opportunity for all candidates. On the other side, because the same team hires for all of the units, it may result in ill-fitting hires due to a lack of awareness of the departments' needs. The company can also adopt a hybrid procedure, in which both centralized and decentralized components are used.

Both centralized and decentralized processes have advantages and disadvantages, and the organization can select which to use based on its requirements. If it requires instant labor force, it should choose the centralized option because it is speedier, but if it requires flexibility in selecting personnel, it should choose the decentralized way. There is no right or wrong answer when it comes to which procedure is the most effective; it all depends on the organization and its present requirements.

-Alekhya Madoori

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Global Market Amid Arena: Russia Vs. Ukraine

Earlier war broke the back, now the backbone "economy"?

Not with a bucket of popcorn and a cup of cola, the world has witnessed the combat between Ukraine and Russia, and the echo of this war has reached every corner of the globe, bringing maximum havoc to the world economy. With the prospect of a final cease-fire and settlements, the global economy has been wobbling between share market ebbs and flows. However, given Russia's previous breach of the ceasefire, this has sparked global mistrust. This conflict has a long history, but the main damage has occurred after 2014, bringing economic harm to both countries as well as the rest of the globe. With NATO playing its own game with a key participant like the US, this battle is far from over.

As the battle continues with no end in sight till now, it has already broken many delicate glasses in the global marketplace. Russia has been the second-largest crude oil exporter, trailing only Saudi Arabia, and any disruption in its supply system will result in significant inflation in the price of oil since its demand cannot be halted. Russia and Ukraine account for around 29 percent of total wheat exports. In addition, wheat prices have risen by 20% in the last month. Many large corporations are increasingly severing connections with Russia.

Apple, Shell, and BP are a few such. Other disruptions would be seen in edible oil, especially sunflower oil, for which Russia and Ukraine account for over 3/4 of exports, and the list of these disruptions is far longer. It will be more exhilarating to see how the global economy recovers and the conflict comes to an end, but for the time being, Russia has a long mile ahead due to the sanctions imposed by the US. It would be a matter of cogitation for the ultimate ceasefire and a glimmer of hope for the world market.

- Shashank Raj Gupta



<https://bit.ly/3JfwNk>

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Reference Links: <https://bit.ly/3CFctkw> | <https://bit.ly/3KHG9AI>

The Boom in Telehealth

Is Telehealth, A pandemic standard or the future of healthcare?

Telehealth has enormous potential in improving health outcomes and the steep rise in adoption of this revolutionary technology during the covid-19 pandemic has brought forth the much-needed spotlight on this industry.

During the covid-19 pandemic, many had to resort to using telemedicine to avoid the risk of infection, this turned telemedicine into one of the fastest-growing sectors within health-care recording a compounded annualized growth of 39.6%, and with the ministry of health and family welfare issuing "telemedicine practice guidelines" in March 2020 legalizing the practice in India ending years of bureaucratic red tape and legal ambiguity. Startups like practo,1mg, mfine, etc. have witnessed a 4-9x surge in demand between March and June 2020 the demand has levelled off, but the potential is clear According to a recent study, the market is expected to grow to \$ 10.6 billion in India 2025 and \$ 250 billion globally by 2025, this led to a steep rise in startups founded around telehealth now India is home to around 133 funded telehealth startups. India has a severe shortage of healthcare professionals, and it is particularly worse in rural areas where there are hospitals but no doctors, telehealth revolution could solve this problem because with Internet and smart-phone adoption skyrocketing telemedicine really has the potential to provide healthcare to the deepest parts of our country, even in metro cities virtual appointments save so much time and energy, and patients are much more likely to consult

doctors if the process is made easier, and faster, this could solve most minor emergency consultation and early diagnosis. But we need more clarity on the regulation and data storage, privacy, doctor-patient confidentiality aspects of it.

Telemedicine has proved very successful in improving outcomes, especially in mental health. The union budget for 2022 has made a significant push for this proposing that 23 tele mental health centers be set up across the country, this is very useful as according to a recent survey conducted NIMHANS concludes that 10% of our country's population suffer from some form of mental illness and it is high time, we address the issue with the focus it deserves.

- Harsha Vemula

Who Stands Where In The Telemedicine Sector

Startup	Launch Year	Presence	Types Of Services	Number Of Healthcare Providers On The Platform
practo	2008	16 Countries	Teleconsultation, Online Diagnostics, Online Pharmacy	3,00,000
1mg	2012	1,000+ cities	Teleconsultation, Online Pharmacy, Healthcare Products, Online Diagnostics	15,000+
myUpchar	2016	200+ cities	Teleconsultation, Online Pharmacy, Healthcare Products, Online Diagnostics	50,000+
tybra+e	2013	80 cities	Teleconsultation, Health Information	1,00,000
docprime	2018	40 cities	Teleconsultation, Online Diagnostics	30,000+
mfine	2017	9 cities	Teleconsultation, Online Diagnostics	3,500+

Source: Industry Articles, Company's websites

Inc4Plus

Image from [shutterstock.com](https://www.shutterstock.com)

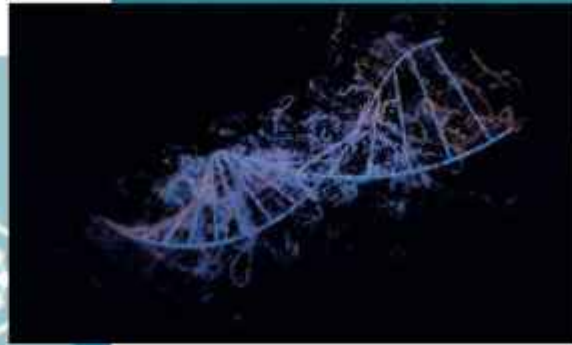
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A BIOLOGICAL HEADWAY

GENOME ALTERATION

ESTABLISHMENT

of a new era in biology and genome editing started in the year 1970 with the development of recombinant technology giving access to microbiologist in reshaping and manipulating DNA modules. Recent advancements in this field reflects upon the evolved ability of micro biologists an researchers to directly edit and modulate functions of DNA sequences in virtually any organisms helping them to foresee and unveil causal genetic variations.



Modern advances on the Genome editing and engineering technology is based on Crispr where associated RNA guided endonuclease, CAS-9, are enabling systematic interrogation of mammalian genome functions further helping the DNA sequences to provide an easy within the endogenous genome in any organism.

Cas-9 has multiple applications In the fields of biology, biotechnology and medicine and helps to establish a causal linkage between genetic variation and biological phenotype.

As recombinant DNA innovation profited from fundamental examination of the limitation catalysts that are integral to fighting among phage and microorganisms, the most recent age of Cas9-based genome designing devices are likewise founded on parts from the microbial defence framework. The future answers for proficient and exact quality adjustment will be viewed as in at this point neglected corners of the rich organic and unexplored variety of nature.

Genome engineering consists of performing targeted modifications to genome where its context may refer to epigenetic marks or outputs. Causal genetic mutation's recapitulation in context with altered biological functions present animals or other cellular models is now efficient and rapid. In the current age of genome altering advancements, the most quick-developing is the class of RNA-directed endonucleases known as Cas9 from the microbial versatile insusceptible framework CRISPR, which can be effectively focused on to practically any genomic area of decision by a short RNA guide.

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