

Gist of YOJANA

VOL.01

June 2020



Technology

Industry 4.0

AIM:
Fostering Innovation

Social Media:
The Force Multiplier

Digital
Platforms

Localisation
Through AI

INCREDIBLE RESULTS

CSE 2018 Results

11 Ranks in Top 50

28 Ranks in Top 100

183 Ranks in the Final List



Rank 11
Pujya Priyadarshni



Rank 16
Dhodmise Trupti Ankush



Rank 21
Rahul Jain



Rank 24
Anuraj Jain

CSE 2017

5 Ranks
in top 50

34 Ranks
in top 100

236 Ranks
in the final list



Rank 3
Sachin Gupta



Rank 6
Koya Sree Harsha



Rank 8
Anubhav Singh



Rank 9
Soumya Sharma



Rank 10
Abhishek Surana

CSE 2016

8 Ranks
in top 50

18 Ranks
in top 100

215 Ranks
in the final list



Rank 2
Anmol Sher
Singh Bedi



Rank 5
Abhilash Mishra



Rank 12
Tejaswi Rana



Rank 30
Prabhash Kumar



Rank 32
Avdhesh Meena

CSE 2015

5 Ranks
in top 50

14 Ranks
in top 100

162 Ranks
in the final list



Rank 20
Vipin Garg



Rank 24
Khumanthem
Diana Devi



Rank 25
Chandra Mohan
Garg



Rank 27
Pulkit Garg



Rank 47
Anshul Agarwal

CSE 2014

6 Ranks
in top 50

12 Ranks
in top 100

83 Ranks
in the final list



Rank 4
Vandana Rao



Rank 5
Suharsha Bhagat



Rank 16
Ananya Das



Rank 23
Anil Dhameliya



Rank 28
Kushaal Yadav



Rank 39
Vivekanand T.S

CSE 2013

5 Ranks
in top 50

62 Ranks
in the final list



Rank 9
Divyanshu Jha



Rank 12
Neha Jain



Rank 23
Prabhav Joshi



Rank 40
Gaurang Rathi



Rank 46
Udit Singh

BYJU'S IAS presents another comprehensive learning program for UPSC aspirants. The **BYJU'S Home Learning Program (BHLP)** provides you with the opportunity to attend live classes conducted by India's best IAS faculty, from the comfort of your homes, assuring you uninterrupted learning so that you can clear the IAS exam with ease. Check the program details below.

Here's how you can get started:

- Attend Live Classes by India's Leading IAS Trainers
- Choose a slot that works best for you

Morning Batch	Evening Batch	Weekend Batch	
Monday to Friday 06:30 AM to 09:00 AM	Monday to Friday 05:30 PM to 08:00 PM	Saturday 02:00 PM to 08:00 PM	Sunday 10:00 AM to 06:00 PM

- Participate in the 'Doubt Destroyer' session

How will **BYJU'S Home Learning Program** help you in your preparation?



Test Yourself: Evaluate your performance by attending weekly MCQ-based and descriptive tests.



IAS Tab: Get a complimentary IAS learning tab with pre-recorded video lectures for revising important concepts and topics.



Comprehensive Study Material: Study material provided is complete and includes well-known books like Indian Polity by M Laxmikanth, Ancient History by R S Sharma, etc.



Current Affairs Webinars: Be a part of the two-hour live sessions every Tuesday and Thursday for Current Affairs analysis of major newspapers, magazines, and RSTV debates.



Exclusive access to BYJU'S IAS Student Portal: This provides you with unlimited access to Prelims and Mains based questions, Monthly Magazines covering Current Affairs, 'Issues In News', and recorded webinar sessions.



Mentor Support: You will be assigned a mentor who will guide you throughout your preparation process.

For more information about the program contact us at iaslive@byjus.com or call us on **+91 9241333666**.

Stay safe and Keep Learning!

Team BYJU'S

YOJANA – JUNE 2020 ISSUE

TECHNOLOGY

TABLE OF CONTENTS:

Sl. No.	CHAPTER
1	Introduction
2	Industry 4.0
3	AIM: Fostering Innovation
4	Social Media: The Force Multiplier
5	Digital Platforms
6	Localisation Through AI
7	RTM for Development
8	Covid-19 Virology
9	Migration & Economic Growth
10	Online Learning in Lockdown
11	eNAM Platform for Marketing Connecting Farmers to Supply Chain MSME Champions R&D Expenditure & Scientific Publications GOAL Programme for Tribal Youth Tropical Cyclones

Chapter 1: Introduction

For every generation, technology and its advent have a different meaning. Mass production was considered its ultimate use in the early industrial revolutions. In early nineties, it was seen bringing digital revolution through automation. Then came the World Wide Web which changed the paradigm of communication and technology.

- Technology when coupled with innovation can provide solutions of immense possibilities.
- The Industry 4.0 is paving way for intelligent technologies in automation and smart manufacturing through blockchain, robotics, cognitive computing. This would involve optimum utilisation of resources, lesser wastage with a circular approach leading to sustainable development, thus improving human lives.
- IT organisations are now leveraging the power of artificial intelligence to enrich their products and make them more accessible to local language users.
- In the development sector, initiatives like real-time monitoring are allowing data collection and dissemination to cater to the most localised needs.
- In the scenario the world is encountering due to COVID-19, technology has become an integral part of our lives more than ever before.

Government efforts:

- Government is fostering this in different sectors of the economy through initiatives like Atal Innovation Mission by providing platform and collaboration opportunities for different stakeholders.
- The Government of India's ambitious Digital India Programme is aimed at transforming India into a digitally empowered society and knowledge economy.
 - This is allowing penetration of technologies in the rural India and taking development to the last miles.
 - This has led to need of localisation of content to reach the masses.
 - Developers have been able to simplify and augment user experiences and facilitate better productivity for Indian language users.

Technology has changed the way the world operates. It is saving lives by early-prediction of cyclones thus helping in disaster management, diagnosing and treating patients and in multitude of ways. First, humans shape technology and then the technology shapes their lives.

Chapter 2: Industry 4.0

Industry 4.0 represents the fourth revolution that has occurred in manufacturing, signalling a change in the traditional manufacturing landscape. It encompasses three technological trends driving this transformation: connectivity, intelligence and flexible automation. Technology, talent, and new innovation ecosystems are emerging; building greater complexities into the final innovation offerings. Intelligent automation and technology are fuelling this new industrial revolution. This unprecedented, exponential pace of change is increasingly reliant on collaborative platforms to realise the result which is more revolutionary innovations.

Industrial Revolution:

- The first industrial revolution came with the advent of mechanisation, steam, power and water power.
- The second industrial revolution revolved around mass production and assembly lines using electricity.
- The third industrial revolution came with electronic and IT systems and automation.
- The fourth industrial revolution, at present is associated with cyber-physical systems.

Industry 4.0:

- Industry 4.0 describes the growing trend towards automation and data exchange in technology and processes within the manufacturing industry, including: The Internet of Things (IoT), The Industrial Internet of Things (IIoT), Cyber-physical Systems (CPS), Smart Manufacturing, Smart Factories, Cloud Computing, Additive Manufacturing, Big Data, Robotics, Cognitive Computing, Artificial Intelligence & Blockchain etc.
- This automation creates a manufacturing system whereby the machines in factories are augmented with wireless connectivity and sensors to monitor and visualise an entire production process and make autonomous decisions.
- It is further estimated that wireless connectivity and the augmentation of machines will be greatly advanced with the full rollout of 5G.

Impact:

- Innovation is fundamentally undergoing a radical change.
- Companies are radically overhauling entire systems of production, management, and governance on a constant basis of change.
- There is unprecedented processing power, storage capacity, and access to various avenues of knowledge.
- This will provide faster response times, allowing for near real-time communication between systems.
- It relates to digital twin technologies. These digital technologies can create virtual versions of real-world installations, processes and applications
- This can then be robustly tested to make cost-effective decentralised decisions.
- Factories will become more efficient and productive and less wasteful.
- Industry value chains are being radically redesigned to accommodate connected worlds being more reliant on everything being digital.

Challenges:

- The world is facing greater disruption and an increasing innovation pace and actually caught up in a very revolutionary period.
- The technology, talent, and new innovation ecosystems are emerging; building greater complexities into the final innovation offerings.
- The change is increasingly reliant on collaborative platforms to realise the result which is more radical innovations.
- Organisations are facing mounting pressure to transform—to shift from product centric business models to new models focused on creating and capturing different sources of new value propositions. As a result, innovation is becoming more complex.

Industry 4.0 Post COVID – 19:

- The business drivers of Industry 4.0 pre-crisis were focused on competitive advantage, cost reduction, productivity, sustainability and innovation. The goal was to make smooth businesses to run better.
- COVID-19 is causing radical shifts in workflow across the globe as millions practise social distancing and comply with self-quarantine recommendations. The pandemic's dramatic appearance has accelerated numerous trends while slowing others.
- Industry 4.0 is not only as applicable as it was before but it is actually far more relevant moving forward.
- The focus for many manufacturers now is survival first and foremost and beyond that, damage limitation.
- Also, Industry 4.0 solutions currently being considered or being deployed fall into the category of non-essential business activities.

Digital Transformation due to COVID-19:

- The integration of digital infrastructure to streamline public health to respond to the COVID-19 pandemic is very crucial in the context of epidemic forecasting and decision-making.
 - One such example in India is the Aarogya Setu app by Government of India.
- Digital platforms have demonstrated its usefulness in the enhanced corporate ability of long- distance collaborative work, and the ability to market online and business development.
- Many manufacturers are increasing efforts to equip their human workers with digital connected-worker tools that incorporate safety checks into workflows, ensure collaboration with colleagues when physical contact is off the cards, and other such processes that ultimately balance business continuity and employee health.

Conclusion:

- In the time of Coronavirus crisis, Digital Industry 4.0 plays a vital role in envisioning and modeling outbreaks.
- Organisations that adapt their technological capacity and investments on digital platforms can alleviate the impact of the COVID-19.
- This is also the dawn of a new era where 'frontline' workers and desk workers are harmonised with tools that can support the flow of collaboration and data, where something that happens on the factory floor initiates a communication or workflow in the back office.
- Manufacturers who understand and act on this new normal will have ample opportunities for growth in this era of Industry 4.0.

Chapter 3: AIM: Fostering Innovation

The last few years have seen innovation in India reach a tipping point with the large-scale social innovations and now the big impact innovations in public service. Recognising this need, the Government of India has set up Atal Innovation Mission to promote a culture of innovation and entrepreneurship in the country.

The Rise of Social Entrepreneurship:

- Sustainable development is the practice of improving human life while protecting the environment. It is perhaps the most important and the most formidable long-term challenge that the world faces.
- Inventors and innovators could very well prove wrong the skeptics who say that economic development and environmental protection cannot possibly go hand-in-hand.
- In India, Social enterprises are beginning to leverage Innovation.

Examples:

- **Akshay Patra** is the world's largest NGO-run school meal program—it reaches 10 million children across five States of India, six-days a week.
 - This was achieved through a 'technological Innovation: to prepare meals on large scale in a short time' and a 'logistics innovation-to reach the meals to the schools'.
- **Goonj** is creating rural value from urban waste in a manner that is mutually dignified.
- **MV Foundation**, a new way to take kids out of child labour and into schools are bringing through Non-linear solutions for the country's huge developmental challenges

Atal Innovation Mission:

- India has set up Atal Innovation Mission (AIM) to promote a culture of innovation and entrepreneurship in the country.

- It's objective is to develop new programmes and policies for fostering innovation in different sectors of the economy, provide platform and collaboration opportunities for different stakeholders, create awareness and create an umbrella structure to oversee innovation ecosystem of the country

Read more about [Atal Innovation Mission](#).

Six major initiatives taken in first year of its establishment:

- 1) Atal Tinkering Labs- Creating problem-solving mind-set across schools in India.
- 2) Atal Incubation Centres- Fostering world-class start-ups and adding a new dimension to the incubator model.
- 3) Atal New India Challenges- Fostering product innovations and aligning them to the needs of various sectors/ministries.
- 4) Mentor India Campaign- A national Mentor network in collaboration with public sector, corporates and institutions, to support all the initiatives of the mission.
- 5) Atal Community Innovation Centre- To stimulate community centric innovation and ideas in the unserved /underserved regions of the country including Tier 2 and Tier 3 cities.
- 6) ARISE- To stimulate innovation and research in the MSME industry.

Promotion of Innovation:

- The Defence Institute for High Altitude Research (DIHAR) in Ladakh has played an innovative and transformational role in accelerating the socioeconomic development of Ladakh.
- Many initiatives like solar energy based low-cost Green Houses, zero energy based storage have transformed the vegetable and animal productivity and output, and even raised the tree line above 13000 ft.
- Additionally, the Government of Karnataka partnered with the Azim Premji Foundation to innovate primary education in government schools.
- This will lead to many more students, passing out of primary school, having acquired the basic competencies.

Conclusion:

- 'Innovation is for India, what quality was for Japan; a transforming agent'.
- This momentum should be built to the point that would make India the Innovation Capital of the world.

Chapter 4: Social Media: The Force Multiplier

Social media has become a game changer in the way federal, regional, and local government agencies are engaging, interacting, and communicating with citizens. With no exception, the Indian Government as well, has rapidly adopted the latest digital technologies and embraced new forms of social media communication tools in the discharge of its governance and administrative duties.

- The Government of India's ambitious Digital India Programme is aimed at transforming India into a digitally empowered society and knowledge economy.
- This initiative is anchored by the Ministry of Electronics and Information Technology (MeitY), but is implemented across the federal framework of the country covering central, state, and local organisations in both the public and private space.

Features of New age Social Media:

- Universality
- Pervasiveness
- Simplified user experience
- Availability of Social Media Apps in multiple Indian vernacular languages (besides English).
- Inexpensive mobile phones, cheap bandwidth and data-plans, vernacular content etc. have helped in

amplifying social media's reach and impact even in the rural hinterlands of the country beyond the large cities and towns.

How is Government using Social Media?

Most government departments and agencies maintain an active presence on the popular social media channels. They have created official accounts and regularly share news updates, departmental notifications, or public announcements on their channels. Ways in which Indian Government agencies are using social media as a force multiplier in their work are:

Crisis / Disaster Management:

- Whenever there is a big, unexpected crisis, citizens tend to panic and look for directions and advisories from their elected representatives. Social media is now increasingly being used by governments to reach out to citizens during crisis. Attempts are aimed at avoiding the possibility of (panic induced) rumours that may lead citizens astray.

Citizen Engagement:

- Social media can act as a medium for continuous engagement between governments and its citizens. Citizens should feel their governments are participatory and welcoming, and be able to contribute their ideas, comments and suggestions in policy formulation and implementation.
- The Indian Government's MyGov platform has proven to be popular with citizens in this regard.

Citizen Grievances & Support:

- Social media has emerged as a very impactful, real-time channel for citizen grievances and support.
- Most citizen services (specially the public facing ones) maintain active accounts on social media and encourage citizens to directly reach out with their grievances.

Law & Order:

- The Police frequently needs to make public announcements—something that social media is well-suited for.

Hiring & Recruitment:

- Some government agencies are using social media hiring channels for attracting best-in-class talent for their job vacancies. "LinkedIn" is a popular online recruitment platform.

Foreign Relations:

- Many government agencies are using social media channels effectively to engage with their foreign counterparts.
- Embassies and foreign consulates are active on Twitter & Facebook, engaging with each other or sharing important updates to their citizens.

Business & Industry Relations:

- Government agencies partner with businesses, industry bodies and trade organisations on a regular basis for policy, consultations, networking etc.
- Businesses play a key role in driving social media's impact by contributing significantly to the internet economy via advertising, paid services etc.
- Many monetisation models on the internet (wholly or partially) rely on enterprises, B2B (business to business) and large corporations with large advertising and marketing budgets, which contributes to the nation's economy.

Live Traffic Updates:

- Real time traffic updates and advisories get regularly shared in the metropolitan cities via the local Traffic Police social media accounts.
- These updates are helpful to commuters in avoiding traffic jams or taking detours to save time.
- Often these live updates are picked up by local FM radio channels that do their civic bit, by sharing it on with live audiences that have tuned into the channel while on the roads.

Government Procurement:

- Traditionally, tender notices were advertised in newspapers; now with the advent of e-tendering, these notices are increasingly getting posted on social media channels as well.

Crowdsourcing Ideas & Innovation:

- The internet is fundamentally participatory in character—people openly share their knowledge, skills, and experiences in the belief that others can benefit from it.
- Crowdsourcing is a popular activity on the internet, where the collective “wisdom of the crowds” can be tapped.

Citizen Service-Delivery Apps:

- The government has launched various service delivery apps for its citizens.
- Social media is a key channel to drive awareness about these apps and get people to download them.
- Because these apps are mass targeted, the intent is to make them “go viral” and spread via “word-of-mouth” from person to person.

Transparency & Accountability:

- The police department in Dima Hasao, one of the districts in Assam has publicly shared telephone numbers of their top officers and their rank and file.
- Such measures reduce bureaucracy, while promoting transparency and accountability in the eyes of the citizens.

Chapter 5: Digital Platforms

Digital apps developed by the government are playing an important role in responding to the COVID-19 crisis. Indian government has been using digital technology for providing timely information, direct money transfer to the poor etc.

Here are examples of how the government is doing a good job by making itself a driver and enabler during COVID-19 crisis.

1)Aarogya Setu App

- The App enables people to assess themselves the risk for their catching the coronavirus infection.
- It calculates this based on people’s interaction with others, using cutting-edge bluetooth technology, algorithms and artificial intelligence.
- The personal data, collected by the App, is encrypted using state-of-the-art technology and stays secure on the phone till it is needed for facilitating medical intervention and is available in 11 languages.

2)Chatbot

- Gol has launched a WhatsApp chatbot so that the citizens can get instant and authentic answers to all of their queries related to the Coronavirus pandemic.

3) Corona Kavach

- It is a COVID-19 tracker application, created by the Ministry of Electronics and Information Technology in collaboration with the Ministry of Health and Family Welfare.
- This application provides users with real-time location of infected users who have activated the 'Kavach' feature.

4) COVID-19 Feedback

- It has been developed by the centre to get direct feedback from people who have undergone coronavirus treatment in the country.

5) SAMPRAC

- DRDO has developed an app called 'SAMPRAC' to enable tracking people under quarantine. The system enables geofencing, AI-based automated face recognition.
- It has the capability to display the information to the state officials on a map which can be colour-coded to depict hotspots and containment zones.

6) Direct Benefit Transfer (DBT)

- It is a scheme by Government of India to transfer the benefits and subsidies of various social welfare schemes.
- It has been crucial in implementing PM Garib Kalyan Yojana that was rolled out to provide relief to the poor and vulnerable amid the COVID-19 crisis.

7) SAHYOG

- The Survey of India has developed an e-platform that collects geotagged information on the nation's critical infrastructure.
- This will help the government and public health agencies to take critical decisions in response to the current COVID-19 pandemic situation.
- It works as a key tool in helping community workers carry out the government's objectives of door-to-door surveys, contact tracing, deliveries of essentials items and to create focused public awareness campaigns.
- It improves government's response time, strengthens the public health delivery system and subsequently provides the necessary geospatial information.

Other technology apps developed playing an important role during COVID- 19 crisis are:

1) BHIM (Bharat Interface developed for Money) App

- BHIM (Bharat Interface for Money) is an Indian mobile payment app developed by the National Payments Corporation of India (NPCI), based on the Unified Payments Interface (UPI).
- It helps in facilitating e-payments directly through banks as a drive towards cashless transactions

2) RuPay

- d launched by the National Payments Corporation of India to fulfil the Reserve Bank of India's vision to have a domestic, open and multilateral system of payments.

3) GeM (Government e-Marketplace)

- An e-commerce portal, which has been created to allow government departments to buy their requirements from various vendors without cash or physical payments.

4) UMANG App (Unified Mobile Application for New-age Governance)

- It is all-in-one single unified, secure, multi-channel, multi-platform, multi-lingual service freeware mobile app for accessing over 1,200 central and state government services in multiple Indian languages.

- It includes services such as AADHAAR, Digi Locker, Bharat Bill Payment System, PAN, EPFO services, PMKVY services, AICTE, CBSE, tax and fee or utilities bills payments, education, job search, tax, business, health, agriculture, travel.

5)SWAYAM

- Online education programme initiated by GoI to achieve the principles of education policy by providing access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged.
- SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution.
- It is done through a platform that facilitates hosting of all the courses, taught in classrooms from Class 9 till postgraduation to be accessed by anyone, anywhere at any time.

The government apps and digital platforms are playing a significant role in responding and reaching to the needy and vulnerable groups during COVID-19 pandemic.

Chapter 6: Localisation Through AI

Artificial intelligence has started to change the very face of local language technologies, products, tools, services and features. Virtual assistants now understand verbal commands given in Hindi. These revolutionary developments in local language technologies are leading to a phenomenon called Localisation through AI. IT organisations are now leveraging the power of AI to enrich their products in order to make them more accessible to local language users.

Leveraging the Power of AI:

- IT organisations are now leveraging the power of artificial intelligence to enrich their products in order to make them more accessible to local language users.
- Localisation through AI helps in increasing productivity of people and empowers typical language user.
- Artificial intelligence has started to change the very face of local language technologies, products, tools, services and features.
- It breaks the language barrier through language translation.
- It fulfils broader perspective of digital inclusion.
- Microsoft Translator app on Android and iOS can recognise and translate content from typed or printed text, spoken word and even from photos.
- Narrator, the screen reader from Microsoft, speaking Hindi is not just an important development from the local language perspective but it will also empower divyangs.
 - Disability, coupled with inability to use English language, multiplies the challenges that people with disability face as most accessible technologies and tools don't understand Indian languages.

Demand for products and services in local language:

- The recently released data of Census of India 2011 indicates a robust growth in the number of people speaking local languages.
- Rise in these numbers coupled with increased technological awareness, expectations and a higher per capita income are expected to encourage a greater demand.
- Products enriched by artificial intelligence have the potential to empower this section of society and help boost overall productivity

Efforts to Promote Localisation through AI

- Microsoft has been working with Indian languages for over two decades since the launch of Project Bhasha in

1998, allowing users to input localised text easily using the Indian Language Input tool.

- Through its global Local Language Program (LLP), it provides people access to technology in their native language.
- This includes Language Interface Packs for Indian languages like Hindi, Kannada, Bengali, Malayalam, amongst others.

Chapter 7: RTM for Development

Development programmes are actively embracing real-time monitoring approaches across a range of sectors; from maternal health to nutrition and water, sanitation and hygiene (WASH)-to improve planning, monitoring, and decision making efforts. It has been critical in helping UNICEF and other organisations deliver timely data to government partners and others to help inform key policies and programming decisions.

The Importance of Real-Time Monitoring

- The use of real-time monitoring (RTM) to support national systems strengthening is growing, primarily due to the ubiquitous penetration of mobile phones into global audiences.
- RTM has been a boon in countries and regions where mobility and physical connectivity challenges can affect the diffusion of knowledge of key issues, which can stymie progress against key health and socioeconomic indicators.

Statistics:

- India has been one of the early adopters of mobile and digital technology in the low-and-middle-income world.
- As of 2019, 77 UNICEF country offices including India's are using real time approaches enabled by the use of information and communication technologies which enable faster retrieval and analysis of data and information, than paperbased or other traditional systems.
- It has 1.16 billion telecommunication subscribers in the world, as of March 2019 (TRAI, 2019),
- It has been adding nearly six million subscribers per month (TRAI, 2019).
- The Ministry of Health's National Health Portal has shortlisted 72 monitoring platforms that have been authorised to track indicators from health records in hospitals to mapping water supply sources (2020).

Benefits of RTM:

- Provides a monitoring platform for communities and governments to track progress towards shared goals.
- Identifies supply, demand and bottlenecks in service delivery chains.
- Increases accountability of Government.
- Improves service delivery to hard to-reach communities.
- Assesses and educates consumers and beneficiaries.
- When using real-time approaches, data and information is provided more rapidly than before and allows stakeholders to monitor progress towards goals by rapidly accessing and reviewing data and information, seeing trends, and identifying corrective actions required based on informed evidence-based decisions within a day, or in some cases, within a few hours.

Scalable Routine Data Collection and Dissemination System:

- RapidPro: RTM System by UNICEF -UNICEF's RapidPro collects data via SMS and other communication channels to enable real-time data collection and mass communication with target end-users, including beneficiaries and front-line workers.

RapidPro - Integration into Various Countries' Programmes:

Water, Sanitation and Hygiene Status in Rural India

- In 2019, RapidPro was piloted in two of India's most populous states, Uttar Pradesh and Bihar.
- These states carried almost 30 per cent burden of open defecation globally at the start of SBM, to assess the status of sanitation services and related knowledge.
- This allowed the governments to not only appreciate the tool for its flexibility and scaled reached, but also to receive rapid inputs to questions they were interested in.

U-Report: A Global Tool

- It is a free messaging tool built using RapidPro in 2011.
- Its objective is to encourage participation of youth. It has been used for assessing knowledge, practices and attitudes around COVID-19 across 43 countries.

Real-time Monitoring of Social Cash Transfer Programme in Nepal

- UNICEF Nepal supports the Government of Nepal in monitoring social cash transfers disbursed in 'child grant' expansion districts, through RapidPro.

Lessons Learnt:

- Flexible real-time monitoring options (such as RapidPro) are important for development. It ensures that the data is being analysed in accordance to the objectives defined without integrity loss due to human error and physical bulk issues such as paper-based collection.
- Integration requires time, capacity building and buy-in from multiple stakeholders with various perspectives.
- It is important to keep equity in mind, especially when seeking to include the most marginalised and vulnerable.
- Implementers should realise that RTM platforms are not the end of all information and require scrutiny at all steps to ensure that the right respondents are being included.
- Another key population to keep in mind is women, who customarily have lesser access to digital communication options.
- When considerations around equity, feasibility and personalisation needs are taken into account, RapidPro offers itself as a highly viable option for a gamut of programmatic objectives that can inform everything from grassroots action to national guidelines.

Chapter 8: Covid-19 Virology

This century has witnessed the emergence of three different coronaviruses (CoVs) that have spread beyond the country that they were first identified in. They are

1. Severe Acute Respiratory Syndrome CoV (SARS-CoV) in 2003
2. Middle East Respiratory Syndrome CoV (MERS-CoV) in 2012
3. COVID-19 in 2019 novel CoV (2019-nCoV, later officially named SARS-CoV-2). First identified in Wuhan (Hubei, China) in December, 2019, CoV disease 2019 (COVID-19) caused by SARSCoV-2 was declared a pandemic by the World Health Organisation (WHO) in March, 2020.

SARS-CoV-2 and other Corona Viruses belong to subfamily Coronavirinae in the virus family Coronaviridae comprising four genera Alphacoronavirus, Betacoronavirus, Gammacoronavirus and Deltacoronavirus. These are

enveloped with positive sense single-stranded ribonucleic acid (RNA).

For In-depth understanding Refer to [Chapter 3 - Gist of Yojana May 2020 Issue](#)

Chapter 9: Migration & Economic Growth

It is a phenomenal task to settle millions of workers and it requires effective collaboration from many interest groups. There are reports that the lockdown has helped the environment to recover from the damages, and that the pollution levels have dipped significantly. Considering, that the land and its people form inseparable components of sustainable development, this pandemic can provide a good opportunity to revive social dialogue as well.

Issue:

- In India, migrant workers provide support services to every sector and across the classes.
- Their savings had dried out as they supported themselves without jobs.
- And though the government by declaring it as a national disaster had made it obligatory for the employers to pay the wages, as per the National Disaster Management Act, it is difficult to assess its implementation.

Why is Implementation Difficult?

- The administrative machinery to ensure compliance across the nation is inadequate.
- The income earned by the self-employed workers cannot be termed as wages, which means that these workers would have to go without earnings when there is no work.
- Those engaged in piece-rated jobs, get remuneration depending on the number of pieces made.
 - Since there was no production, employers were not legally bound to pay.
- The MSMEs or tiny enterprises are financially too fragile to release the wages without production.

A Challenge and an Opportunity:

- According to Harris-Todaro model of migration, migration to urban spaces occur when the expected wage rate in the urban industrial sector is significantly higher than the present wages in the rural sector.
- The presence of a kin or a community member in the urban sector further induces migration. As more and more people migrate, it becomes nearly impossible to track the size of work force in the urban informal sector.
- As workers began returning due to the pandemic, there was an opportunity to prepare a data base of this labour market.
- This information is crucial to the formation of Labour Market Information System.
 - Inadequate information may be a strong impediment in proper utilisation of funds allotted towards social protection of migrant workers.
- Once the lockdown is lifted, there are chances of a high labour surplus in some states and relative deficits in others.
 - This issue can be addressed if a proper data regarding number of skilled and unskilled workers is present.
- By further classifying this pool skill-wise, it may be possible to bring them together through cooperative forms of organisation.
- States that have suffered a poor industrial growth for long and hence have had a high outflow of migrants can now look at return of migrants as a reclaimed human capital.
- There is a possibility of building clusters of new MSMEs or units based on co-operatives using the skill and

experience of the return-migrants.

Possible consequences:

- It is unsure if the urban labour market would roll out better terms of employment in the times to come, restarting the process of migration, with more decent working and living conditions.
- Historically, employers have chosen to offer better employment conditions to attract workers when necessary.
 - The mill workers' quarters in Mumbai constructed to incentivise migration being a case in point
- Alternatively, there might be a Ricardo Effect.
 - Employers may opt for labour saving technology in response to an upward movement in the wage rate, triggered by a relative labour shortage.

Economic Growth: Slowdown & Lock Down:

- Indian economy has been going through a rough patch for a while. The GDP growth rate of the economy had slipped to 5 per cent in the first quarter of FY20.
- The US-China trade war could be an important exogenous factor affecting the economy.

Way Forward

- Following Pigou's Maximum Social Advantage principle, it would be baseless to carry on with the lockdown extension beyond its optimum. i.e. when the net benefits from lockdown have been maximised.
 - Net benefits would be an estimate of the number of lives saved, including the cost of medical assistance and equipment needed to look after number of patients added in the absence of lockdown, and perhaps the environmental 'recovery' if that can be factored in, minus the costs in terms of loss of production, livelihood and the rate of economic growth.
- Boosting the consumption demand at the earliest is the need of the hour, since consumption expenditure constitutes almost 60 per cent of India's GDP.
- Ensuring decent earnings to the workers in general, including the migrants, can easily facilitate this as they have the high propensity to consume.
- There are successful examples of migrant workers' co-operatives that emerged as a response to crisis in many countries. States can benefit by collaborating with ILO.
- Besides creating gainful employment, States may have to work on improving infrastructure, building industrial estates, for setting up new MSMEs, etc.
- 'Unlimited supply of labour' in least developed countries could become a 'potential source of saving', provided there was migration of the disguisedly unemployed workers from rural to the urban industrial sector.
- The 'return-migrants' can become a renewed source of economic growth by planting the seeds of their on-the-job skills learnt in the urban sector into their home states.

Chapter 10: Online Learning in Lockdown

COVID-19 has changed the ways of living, working, teaching & learning. Millions of students have been driven out of university campuses and the faculty is confined to their homes. This has forced the teaching community to look for alternatives to maintain the continuity in the teaching and learning process. The pandemic has forced all the teachers to Work from Home and to come up with innovative ways of imparting education.

- More than 960 million students across the globe are looking towards their institutions for the way forward from the current ongoing challenges.
- The lockdown has put the government on the tight rope leading the academic administrators in the country to plan a series of activities by the concerned ministry and various regulators including UGC, IGNOU, CBSE, NCERT, NIOS etc. to find alternatives to ensure the continuation of education.

- Amidst this background, the department and regulators have started moving towards developing an online mode of education—as, hopefully, a viable alternative arrangement.

History of Satellite Education in India

- Radio and television broadcast has been extensively used for educational purposes for more than 75 years.
- Satellite Instructional Television Experiment (SITE) was the largest communication experiment in the use of satellite in support of developmental and educational programmes in modern times.
- The telecast via this satellite began in India from August 1, 1975. The instructional objectives of SITE were in the fields of education, agriculture, health and family planning and national integration.
- Indian National Satellite (INSAT) was launched in 1977. The major objectives of INSAT were to produce and transmit varied programmes designed to inform, educate, entertain and enrich all sections of the people.
- Gyan Darshan (GD) came into existence in January 2000. It is an exclusive and dedicated twenty- four hour educational and developmental TV channel of India.
- Gyan Darshan has become completely digital in the span of fourth year on January 26, 2004. The primary target audiences of the channel are the students studying in undergraduate and postgraduate classes in universities and colleges.
- On September 20, 2004, EDUSAT the dedicated satellite for education in India was launched by ISRO. It is the first Indian satellite exclusively built for the use of education sector.

Online learning during lockdown:

- The use of Education Technology (ET)/Information & Communication Technology (ICT) in imparting education/learning is on the driver's seat during the lockdown period globally.
- It has become inevitable tool in reaching to students and all such people in imparting teaching & learning.
- Internet is the most useful technology of modern times for educational purposes. Importance of internet in education goes without saying; it helps the students to research things, and relearn the content taught/discussed in their classrooms.
- For the effective education, mere access to internet information resources is not enough.
- It is necessary to prepare the students beforehand to work with information or to provide those, who use the distance form of education with special tasks destined to develop intellectual skills of critical thinking, working with verbal texts, multimedia environment, to create all kinds of so-called secondary texts (abstracts, summaries, essays, etc.), to be able to work with information.
- The usage of the information resources located in the Internet is not such a simple affair. It requires not only the ability to search for it in the huge ocean of the Internet, but to process it, to use it effectively for the cognitive goals.

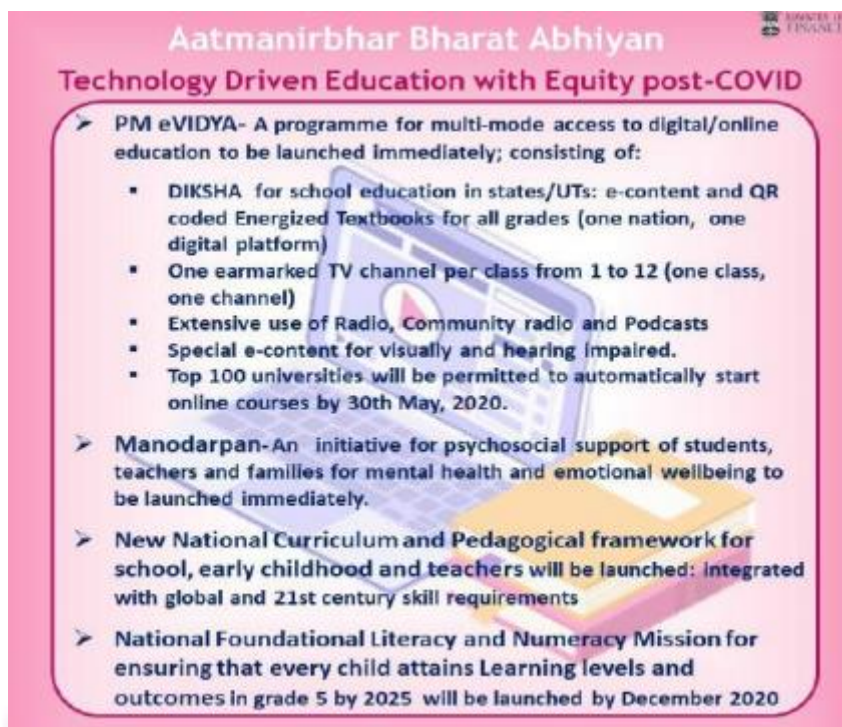
Challenges:

- As per one Report, India is the second-largest internet user in the world. However, as per the report of TRAI, only 34 per cent of the total population had access to the Internet in 2017.
- The figure carries a vast gender disparity, where the ratio of male and female users is approx. 70 per cent and 30 per cent respectively.
- Rural-Urban Divide persists. Rural India accounts for just 25.3 per cent internet density compared to the 34 per cent of the urban population having around 98 per cent internet connectivity.
- Also, the Indian youth are sometimes characterised by limited digital skills.
- Providing equity in access of bandwidth and technology for remote learners is a major challenge.
- Adequate numbers of trained manpower (both the content & technical experts) are needed.
- The attitude of the facilitators, students as well as awareness of parents plays a significant role in ensuring that the desired objectives of online education are met.

Alternative to Online Education:

- One alternative to online education may be the delivery of education via television.
- Judicious mix of Open Educational Resources (OER) along with delivery of education via television/satellite should be explored as an option.
 - The 2012 OER Paris Declaration provided the broader guidelines on how to make best use of OER.
- The possibilities of replacement of books with e-content & e-book cannot be ruled out. In such a scenario, the days ahead are for the Open and Distance Learning institutions and dual mode universities besides for some of the new institutions.

Technology driven education with equity post-COVID:



Conclusion:

- In order to address the challenges, it is essentially important to align the appropriate use of OER, SWAYAM platform and integrating e-library besides encouraging the faculty to create content for Social Media/YouTube, contribute on MOOCs, develop Moodle Cloud contents, which is having four quadrant approaches for learning and assessments, etc.
- It may take little time but the real tasks for the institutions begin in working on the selection of appropriate new media mix.
- A well-researched Instructional Technology consisting of right packaging of learning content.
- The challenges of the lockdown may become a blessing in disguise in accessing the potential and the capabilities of our institutions in responding to the future necessity of online learning.

Chapter 11: TID-BITS

eNAM Platform for Marketing

National Agriculture Market (eNAM) is a highly ambitious and successful scheme of Government of India which networks the existing APMC mandis to create a unified national market for agricultural commodities with a vision to promote uniformity in agriculture marketing by streamlining of procedures across the integrated markets, removing

information asymmetry between buyers and sellers and promoting real time price discovery based on actual demand and supply

- Created to fulfil the vision of One Nation One Market, eNAM facilitates trade beyond mandi/ state borders.
- Small Farmers Agribusiness Consortium (SFAC) is the lead agency for implementing eNAM under the aegis of Ministry of Agriculture and Farmers' Welfare.
- eNAM is not a parallel marketing structure but rather a device to create a national network of physical mandis which can be accessed online.
 - It seeks to leverage the physical infrastructure of the mandis through an online trading portal, enabling buyers situated even outside the Mandi/ State to participate in trading at the local level.

Read more about [eNAM](#).

Connecting Farmers to Supply Chain

In the current pandemic situation, a robust supply chain management is urgently required to facilitate the timely delivery of the produce at the best possible prices.

Kisan Sabha App:

- Kisan Sabha App has been developed by CSIR Central Road Research Institute (CSIR-CRRI), to connect farmers to supply chain and freight transportation management system.
- The portal acts as a single stop for every entity related to agriculture, be they a farmer who needs better price for the crops or mandi dealer who wants to connect to more farmers or truckers who invariably go empty from the mandis.
- It would also prove to be useful for those associated with cold store(s) or godown(s).
- Kisan Sabha also provides a platform for people who want to buy directly from the farmers.
- It aims to provide the most economical and timely logistics support to the farmers and to increase their profit margins by minimizing interference of middlemen and directly connecting with the institutional buyers.
- It will also help in providing best market rates of crops by comparing nearest mandis, booking of freight vehicle at cheapest cost thereby giving maximum benefit to the farmers.

MSME Champions

- The Union Ministry of MSME has launched CHAMPIONS portal. The CHAMPIONS stands for Creation and Harmonious Application of Modern Processes for Increasing the Output and National Strength.
- It is a technology-driven Control Room-Cum-Management Information System.
- The system utilising modern ICT tools is aimed at assisting Indian MSMEs march into big league as National and Global Champions.
- The portal is basically for making the smaller units big by solving their grievances, encouraging, supporting, helping and handholding.
- As part of the system a network of control rooms is created in a Hub & Spoke Model.
 - The Hub is situated in New Delhi in the Secretary MSME's office.
 - The spokes will be in the States in various offices and institutions of Ministry.

R&D Expenditure & Scientific Publications

India's R&D has tripled between 2008 & 2018 driven mainly by Government sector and scientific publications have risen placing the country internationally among the top few. This is as per the R&D Statistics and Indicators 2019-20 based on the national S&T survey 2018 brought out by the National Science and Technology Management Information System (NSTMIS), Department of Science and Technology (DST).

India's gross expenditure in R&D has tripled between 2008 & 2018:

- India spent 0.7% of its GDP on R&D in 2017-18.
- The same among other developing BRICS countries was Brazil 1.3%, Russian Federation 1.1%, China 2.1% and South Africa 0.8%.

Extramural R&D support by central S&T agencies has increased significantly:

- DST and DBT were the two major players contributing 63% and 14%, respectively of the total extramural R&D support in the country during 2016-17.
- Women participation in extramural R&D projects has increased significantly to 24% in 2016-17 from 13% in 2000-01 due to various initiatives undertaken by the Government in S&T sector.
- As on 1st April 2018, nearly 5.52 lakh personnel were employed in the R&D establishments in the country.

The number of researchers per mn populations has doubled since 2000:

- Number of researchers per million population in India has increased to 255 in 2017 from 218 in 2015 and 110 in 2000.
- India's R&D expenditure per researcher during 2017-18 was ahead of Russian Federation, Israel, Hungary, Spain and UK.
- India occupies 3rd rank in terms of number of Ph. D.'s awarded in Science and Engineering (S&E) after USA (in 2016) and China (in 2015).

India is placed 3rd among countries in scientific publication as per National Science Foundation (NSF) database:

- India's share in global research publication output has increased over the years as reflected in publication databases.
- During 2018, India was ranked at 3rd, 5th and 9th in scientific publication output as per the NSF, SCOPUS and SCI database respectively.

India is ranked at 9th position in terms of Resident Patent Filing activity in the world:

- Patent applications filed in India are dominated by disciplines like Mechanical, Chemical, Computer/Electronics, and Communication.
- According to World Intellectual Property Organization, India's Patent Office stands at the 7th position among the top 10 Patent Filing Offices in the world.

GOAL Programme for Tribal Youth

- The GOAL (Going Online As Leaders) programme of the Ministry of Tribal Affairs (MoTA) has been launched in partnership with Facebook.
- The programme is designed to provide mentorship to tribal youth through digital mode.
- The digitally-enabled program envisages to act as a catalyst to explore hidden talents of the tribal youth, which will help in their personal development as well as contribute to all-round upliftment of their society.
- It intends to upskill and empower 5,000 tribal youths in the current phase to harness the full potential of digital platforms and tools to learn new ways of doing business.

- The program will focus on three core areas – Digital Literacy, Life Skills and Leadership & Entrepreneurship, and on sectors such as Agriculture, Art & Culture, Handicrafts & Textiles, Health, Nutrition, among others.
- All the selected mentees will be provided with smartphones and Internet access (for one year) by Facebook along with exposure to various external forums that will give opportunity to the participants to showcase their entrepreneurial skills and leadership abilities.
- The programme will also create awareness amongst tribal beneficiaries about various schemes initiated by Central and State Governments for welfare of STs as well as their fundamental duties. Efforts will be made to integrate the program with other government schemes such as Mudra Yojana, Kaushal Vikas Yojana, Jan Dhan Yojana, Skill India, Start Up India, Stand Up India, among others.
- This will enable participants to leverage opportunities provided under these government schemes.

Tropical Cyclones

- Each year, tropical cyclones receive names in alphabetical order.
- Women and men's names are alternated.
- The name list is proposed by the National Meteorological and Hydrological Services of WMO Members of a specific region, and approved by the respective tropical cyclone regional bodies at their annual/ bi-annual sessions.
- There is a strict procedure to determine a list of tropical cyclone names in an ocean basin by the Tropical Cyclone Regional Body responsible for that basin at its annual/biennial meeting.
- There are five tropical cyclone regional bodies, i.e. ESCAP/WMO Typhoon Committee, WMO/ESCAP Panel on Tropical Cyclones, RA I Tropical Cyclone Committee, RA IV Hurricane Committee, and RA V Tropical Cyclone Committee.
 - For instance, Hurricane Committee determines a pre-designated list of hurricane names for six years separately at its annual session.
 - In some of the regions, the lists are established by alphabetical order of the names.
 - In other regions, the lists are established following the alphabetical order of the country names.
- In general, tropical cyclones are named according to the rules at a regional level.
- World Meteorological Organization maintains rotating lists of names which are appropriate for each Tropical Cyclone basin. If a cyclone is particularly deadly or costly, then its name is retired and replaced by another one.
- It is important to note that tropical cyclones/ hurricanes/typhoons are not named after any particular person. The names selected are those that are familiar to the people in each region.
- The main purpose of naming a tropical cyclone/hurricane is to facilitate disaster risk awareness, preparedness, management and reduction.

Why choose the BYJU'S IAS Learning Program?



Classroom sessions

Prepare for Prelims and Mains with India's leading IAS trainers



Student Portal

Get access to recorded sessions of the Weekly Webinar, Issues in News, Current Affairs Magazine, Gist of Yojana and Practice Sets



Stay Up-to-date

Regular and in-depth current affairs updates



Mentor Support

Personalised feedback from our mentors



Study Material

In-depth coverage of syllabus which includes the following guides: Indian Polity by M Laxmikanth, India's Ancient Past by R S Sharma, History Of Modern India by Bipan Chandra, Ethics, Integrity and Aptitude by P N Roy Chowdhury and G Subba Rao +16 more titles



Test Your Knowledge

Perfect your exam writing skills and knowledge with - modular tests (MCQ and descriptive), question paper discussions, personalised analysis of answers and answer writing strategies



Current Affairs Webinar

Twice a week live webinar classes to discuss current affairs followed by revision notes



Ease of Accessibility

Prepare at your own convenience, anywhere and anytime with the BYJU'S IAS tablet

Course Highlights

Daily news analysis based on The Hindu

Practice to perfection with Prelims and Mains Test Series

Post Mains Interview Guidance Program

Delhi

B-1/8, Lower Ground Floor, Apsara Arcade, Sadhu Vaswani Marg, Pusa Road, Karol Bagh, Rajinder Nagar, Delhi 110005

Shop No. 19, Vardhaman Central Mall, Nehru Vihar, Delhi. nearest metro- Vishwa Vidyalaya metro station

Hyderabad

Srishti Tower, Hitech City Rd, VIP Hills, Silicon Valley, Madhapur, Hyderabad, Telangana 500081

3-6-196/197, 2nd Floor, Prime Plaza, Himayatnagar Main Road, Himayatnagar, Hyderabad, Telangana 500029

Bangalore

BYJU'S Classes, Tavarekere Main Rd, Opp: Forum back gate, Venkateshwara Layout, S.G. Palya, Bengaluru, Karnataka 560029

Chennai

St Patricks School, Kasturba Nagar 3rd Cross St, Gandhi Nagar, Adyar, Chennai, Tamil Nadu 600020

To know more about our courses contact: +91 92435 00460