



UNIVERSITY WITH A PURPOSE



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Organized By



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“Skill Development & Capacity Building in Energy Sector”

Skill development and capacity building: Changing Faster Than Anticipated

Skill development and capacity building: Changing Faster Than Anticipated

- Preparing young mind for job tomorrow (The Dynamics : 65% of children of primary school will start the job that does not exist today.)
- Job Hoppers (Frequent Change in Jobs) : Only 12% employees serve tenure exceeding 10 years in a single role
- Technological Innovation (Plus inclusion of Social Science in Tech Course)
- Design Thinking (The Transformation of existing condition into preferred one)
(Creative & Innovation Culture with People , Process & Place)
- Three Big Skills (Collaboration, Critical Thinking, Communication)
- Changing From SMART GOAL to STRETCH GOAL
- We are in VUCA World. VUCA is an acronym for
 - **Volatile, Uncertain, Complex and Ambiguous.**
 - VUCA is about constantly changing challenges brought on by
 - **Political Scenario, Economics, Society and the Environment.**

The Changes happening around us

- **There are a total of 27 lakh technical seats across the country - including diplomas and postgraduate courses - and only 13 lakh of them were full in the 2019-20 session. As many as 518 colleges were shut down during the period of 2015 to 2019 as the superfluity has gone down drastically in the technical field. During the admission season in 2019-20, every other technical seat in the stream remained vacant.(Nearly 50% Graduates Jobless, No More Engineering Colleges Till 2022: AICTE)**
- There are a total of 27 lakh technical seats across the country – including diplomas and postgraduate courses – and only 13 lakh of them were full in the 2019-20 session. The demand for these seats has been lowering year by year at a significant rate, and it is likely to remain the same in the near future.

Capacity Building in Energy Sector

CHALLENGES FACED BY OIL & GAS SECTOR

1. CONSTANT CHANGES IN BUSINESS STRATEGIES:

One of biggest challenges is the changes **in business strategies** and functioning of an organization. Oil and gas industry is a **constantly changing one**, and it's very difficult for managers to sketch up their own strategies and modify with the changes.

2. LACK OF SKILLED WORKFORCE:

It isn't easy to recruit qualified oil and gas professionals, and when there lacks skilled workforce in the industry, it becomes harder. This has become a challenge for oil & gas HR manager to hire the good fits. As reported by **Global Energy Talent that provides skills and expertise for oil and gas industry, there will be a 38% shortage of influx of talented engineers.**

3. MOST OF CURRENT WORKFORCE APPROACHING RETIREMENT AGE:

This is one of biggest problems that this sector is facing. Most **of current workforce that is highly experiences / skilled is approaching their retirement age.** Therefore there is a pressure to find people who can fill in these ageing professionals' shoes. In the next few years, there would be a significantly reduced number of experienced professionals in this sector due to these retirements and making it a difficult thing for recruiters.

CHALLENGES FACED BY OIL & GAS SECTOR

4. Attraction of new or current talent to new destinations

Along with globalization in oil and gas industry, companies expand to new countries and regions. Sometimes it's hard to attract the current talent to the new destination. This is a big challenge faced by Organizations they can't force and lost good employees in the process. Also, the perception about oil and gas sector as a **dirty, tough** one and attractions from other industries have led to the lack of interest among younger generations to take up jobs in the oil and gas industry.

5. Challenges due to new location

Expansion to new location proves another challenge to develop new talent and manage the local capacity. It takes time to develop the required quality workforce and train them up to the standards of their operation.

6. Finding and managing migrant workers

Mass migration has become a significant economic phenomenon related to the expansion of globalization and trade between countries. For centuries, it has shaped or reshaped the social and economic landscape in many continents, regions and countries of the world. Many industries have counted on the migrant workers to fill skills gap and adjust to their aging or declining populations. In the oil and gas industry, there have been a growing number of migrant workers employed. The difficulty is how to recruit a large number of foreign employees that satisfy job requirements and how to manage them well for ensured work performance and productivity. The cultural differences often make it hard for migrant workers to be well integrated into the working environment in the host country. To this point, the role of recruitment agencies is really important.

Initiative in the area of Skill development and capacity building in India - Role of Academia

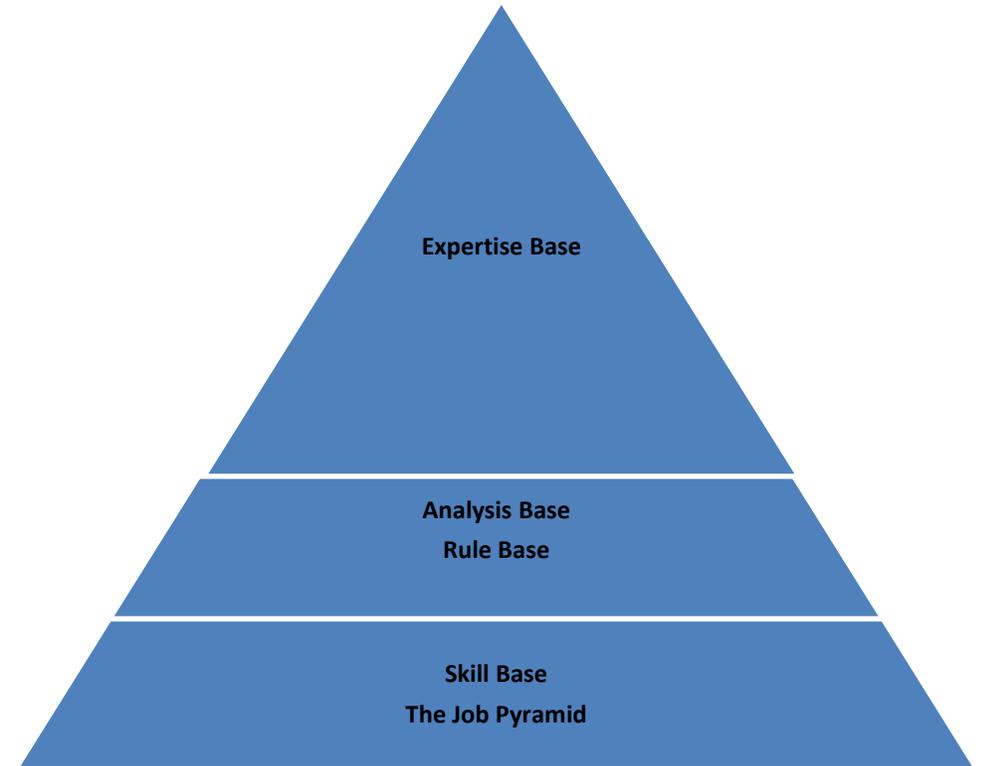
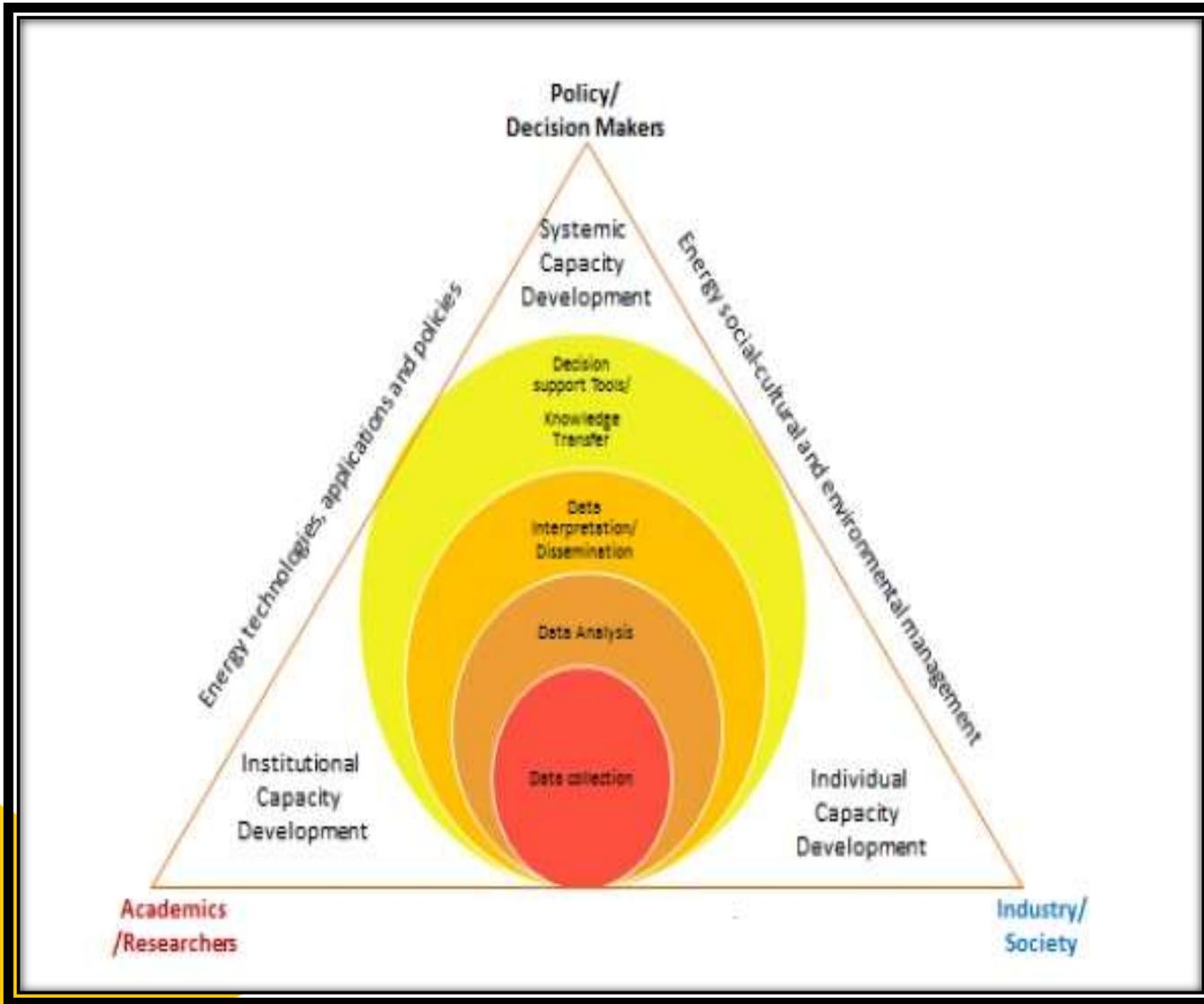
- Education-Employment
- Capacity Building, Skill Development And Digital Literacy For Digital India
- India IT story
- Entrepreneurship Development Programme (EDP) under PMEGP
- MOOC [Massive Open Online courses] (Learn to new way of learning)

(It was an initiative of Yale, Harvard and Massachusetts Institute of Technology (MIT).

And picked up by Indian Education institutes / Universities. Best of the course at minimal or zero cost)

The MOOC market to grow from \$2 Billion (2015) to \$ 8 Billion (2019).

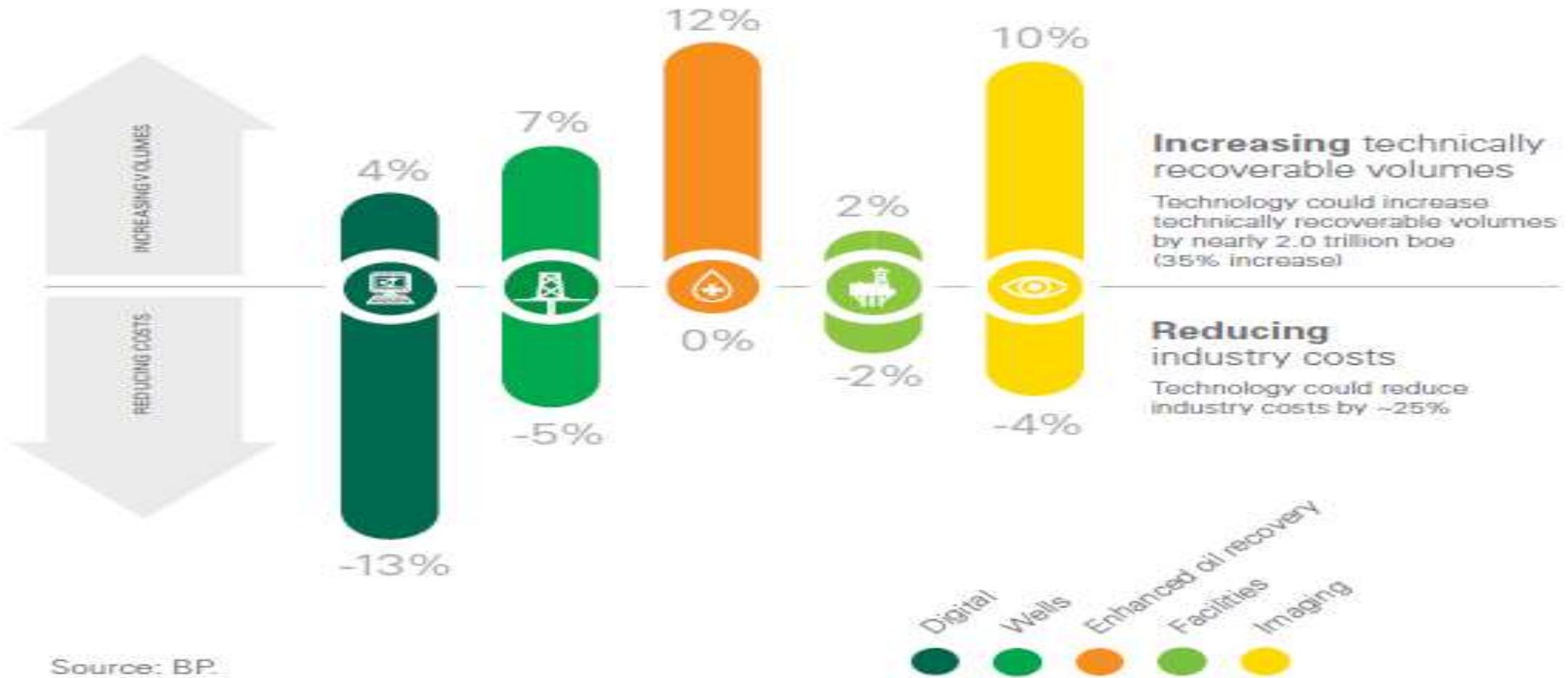
The Role of Academia in Capacity Building and Skill Development: Conceptual Framework



New Research Areas

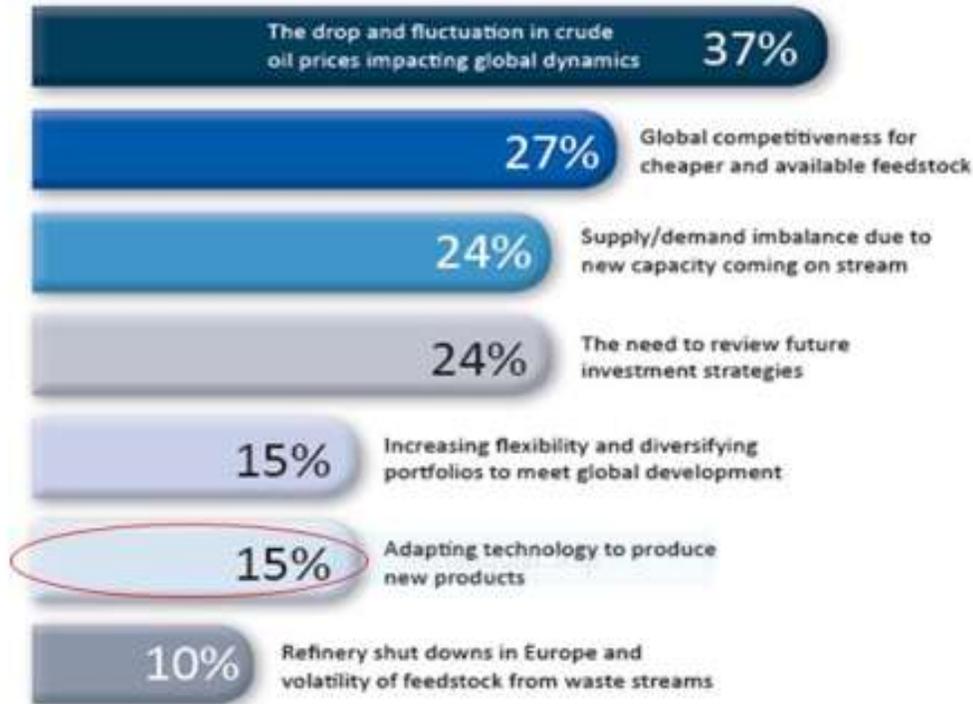
- Block-chain enabled Carbon Emission Trading in India (How the block chain technology and reputation based trading system would affect the carbon emission trading in India and help the participants adopt a long term solution in emission reduction.)
- Conceptual model in the Production automation Chain.
- Innovation in Drilling Technology.
- Developing an Internet of Things (IoT) Business Model for increasing operational efficiency and employee productivity in Indian Public Sector Retail Oil Outlets

Significance of Innovative Drilling Technologies in Oil & Gas



Biggest Challenge encountered by the Downstream Industry (Source: 2015 Global Economics and The Downstream Industry Report)

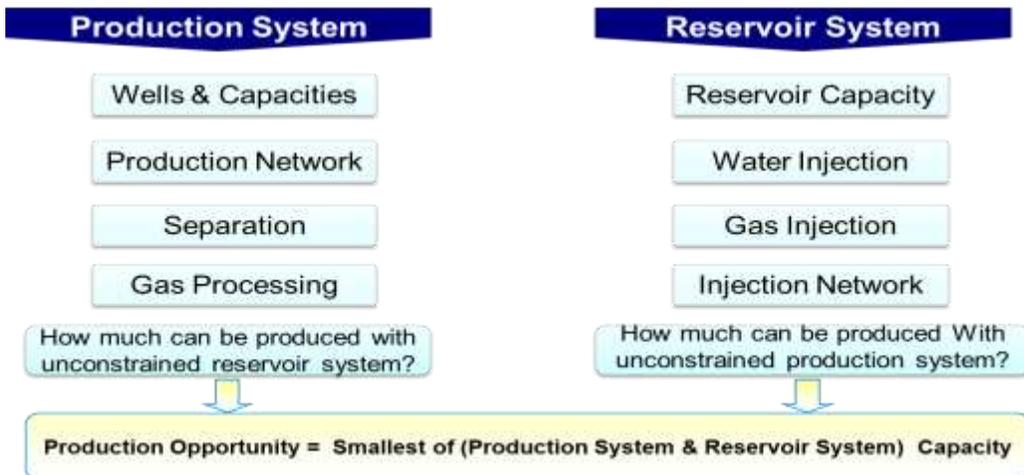
What is the biggest challenge you are currently facing globally?



What is the key to cutting costs?

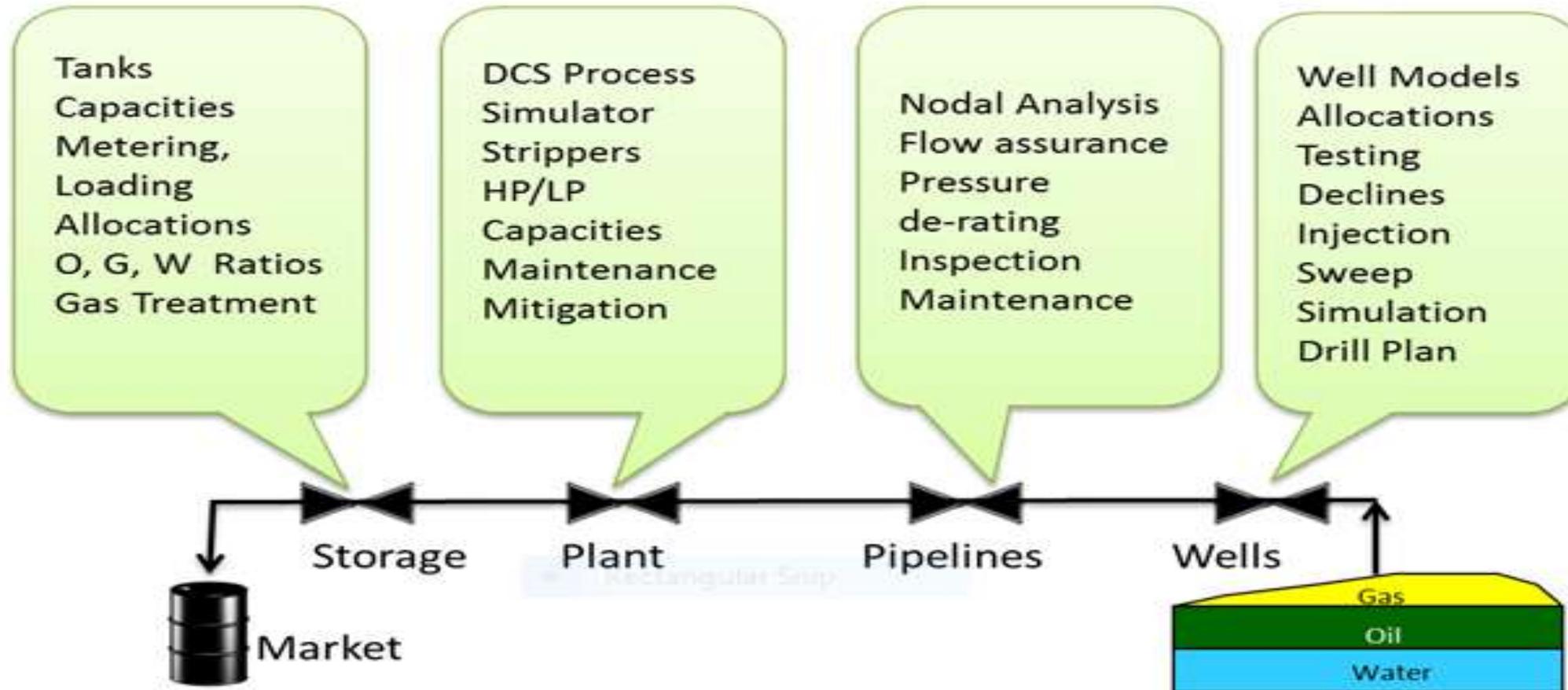
Taking advantage of the latest technologies is the key to cutting costs for global petrochemical producers





Minimizing the difference between the results of the two systems by bringing these values closer will optimize production & result with business gains. This difference is defined as the **lost production opportunity**. SIMUL 8

Conceptual model in the Production automation Chain



RENEWABLE ENERGY SKILL DEVELOPMENT: A FOCUS AREA FOR POWER SECTOR SKILL COUNCIL

- In this new environment of technological opportunities, power distribution utilities to have a knowledge sharing process which would play a key role in the transformation of the power sector.
- Distribution companies to undertake measures like smart metering, smart grid technology, switching to renewable sources of energy, adoption of blockchain in managing distributed energy resources and Artificial Intelligence.

SKILLS GAP HOLDING BACK GLOBAL DECENTRALIZED RENEWABLE ENERGY SECTOR

- The distributed renewable energy (DRE) sector, necessary in a world with millions of people without power, is **being held back by a chronic shortage of skilled workers**.
- To get data on existing employment in the Distributed Renewable Energy sector, job growth trends, both geographically and in specific skill sets.
- To identifying workforce training initiatives that are working in helping to propel distributed renewable energy efforts forward. India is a good example of this.
- Vocational training is an essential part of the off-grid and decentralized energy revolution.
- For example - French energy management firm Schneider Electric has set a 2025 objective to train one million people in energy skills in countries where energy access is very low.

THE VUCA WORLD

- **How to respond to VUCA world.....**
- Be curious. Uncertain times bring opportunities for bold moves. Grab the chance to innovate.
- Anticipate risks but don't invest too much time in long-term strategic plans.
- To retain a clear vision against which judgements can be made, with agility to flex and respond appropriately to rapidly unfolding situations.
- Clear direction and consistent messaging against a backdrop of continually shifting priorities, using new virtual modes of communication.
- Capitalize on complexity. If the talent management with/ right Skill/ strategy is working, that means there are right people in the right place.
- To trust in new specialist expertise and their judgement.
- To get used to being **uncomfortable**. Resist the temptation to cling on to outdated, inadequate processes and behaviors. Take leaps of faith and enjoy the new adventure.

Initiative in the area of Skill development and capacity building in India

- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** Approved for another four years (2016-2020) to benefit 10 million youth

(India's Skill Council for Green Jobs, launched as part of Prime Minister Modi's massive national solar push, has already created 450 job training centers in seven states across the country and more than 30,000 solar PV installers have been certified.)

- **SANKALP** : (Skills Acquisition and Knowledge Awareness for Livelihood Promotion)
- **UDAN** : Udaan is a Special Industry Initiative for Jammu & Kashmir in the nature of partnership between the corporates of India and Ministry of Home Affairs and implemented by National Skill Development Corporation. The programme aims to provide skills training and enhance the employability of unemployed youth of J&K. The Scheme covers graduates, post graduates and three year engineering diploma holders. The Scheme aims to cover 40,000 youth of J&K over a period of five years.
- **Polytechnic Schemes** : [Setting Up of New Polytechnics In Unserved & Underserved Districts](#)

Initiative in the area of Skill development and capacity building in India

- **Vocationalization of Education : School** Government of India lists out a crucial role for National Skill Development Corporation (NSDC) and its Sector Skill Councils (SSCs) in implementation of NSQF. The trainings conducted in the scheme are based on the National Occupational Standards set by NSDC through its Sector Skill Councils. The scheme also mandates the SSCs to conduct assessments and certification jointly with the State Board.
- **Vocationalization of Education : Higher Education** - Based on state skill gap report – identification of Sectors and job roles
- Development of implementation model and Integration into time table as per university norms
- Training of Trainers by Sector Skill Council
- Curriculum Alignment and Capacity Building workshops
- Student orientation sessions to take an informed choice of sector/job role based on career aspiration
- Standardized Training Delivery by NSDC Training Partners
- Internships and On- the – job Training
- Assessment and certification by Sector Skill Council
- Last Mile Employability and Entrepreneurship Opportunities for the students
- **MHRD** : National Scheme of Apprenticeship Training, Support For Distance Education & Web Based Learning (NPTEL), Indian National Digital Library in Engineering, Science & Technology (INDEST-AICTE) Consortium, Technology Development Mission
- Kerala Government has joined hands with Bharat Petroleum Corporation Limited (BPCL) set up a skill development institute in the state to meet the increasing demand for skilled workforce in the country and abroad. The state-of-the-art institute, to be set in Ettumanoor in Kottayam district, will focus on the hydrocarbon sector and overseas placements.

Initiatives of MHRD

NIRF OUTLINES A METHODOLOGY TO RANK INSTITUTIONS ACROSS THE COUNTRY ON CERTAIN PARAMETERS, INCLUDING:

- TEACHING, LEARNING & RESOURCES
- RESEARCH & PROFESSIONAL PRACTICES
- GRADUATION OUTCOMES
- OUTREACH & INCLUSIVITY
- PERCEPTION

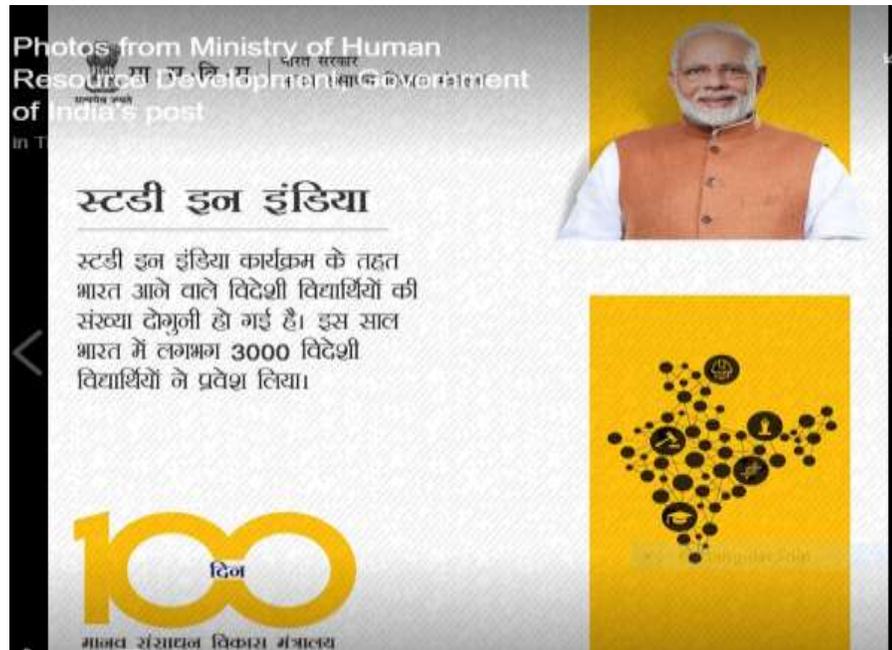
ARIIA: RANKING MAJOR INDIAN HIGHER EDUCATIONAL INSTITUTIONS & UNIVERSITIES ON “INNOVATION & ENTREPRENEURSHIP DEVELOPMENT” INDICATORS AMONGST STUDENTS & FACULTIES. AIM IS TO INSPIRE INSTITUTIONS TO REORIENT & BUILD ECOSYSTEMS ON RESEARCH & ENTREPRENEURSHIP



Initiatives of MHRD

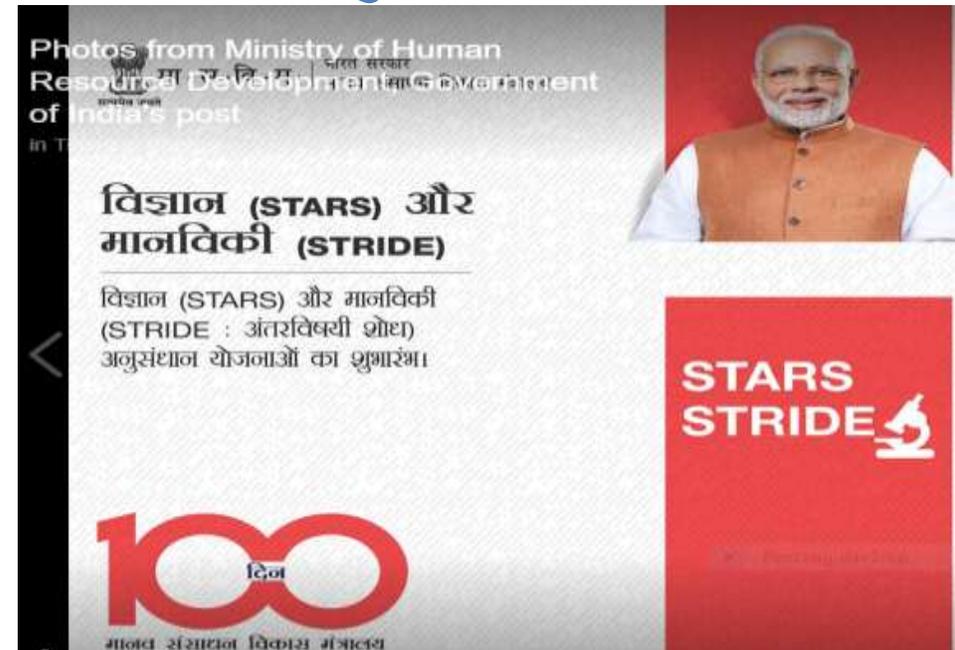
#100DAYSOFMHRD

स्टडी इन इंडिया कार्यक्रम के तहत भारत आने वाले विदेशी विद्यार्थियों की संख्या दोगुनी हो गई है। इस साल भारत में लगभग 3000 विदेशी विद्यार्थियों ने प्रवेश लिया।



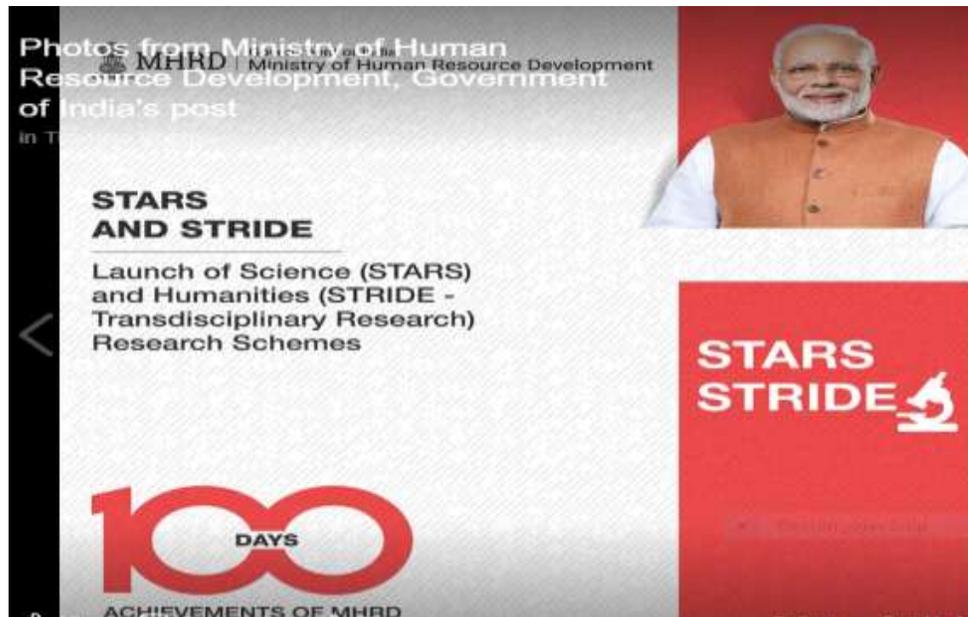
#100DAYSOFMHRD

विज्ञान (STARS) और मानविकी (STRIDE: अंतरविषयी शोध) अनुसंधान योजनाओं का शुभारंभ किया।

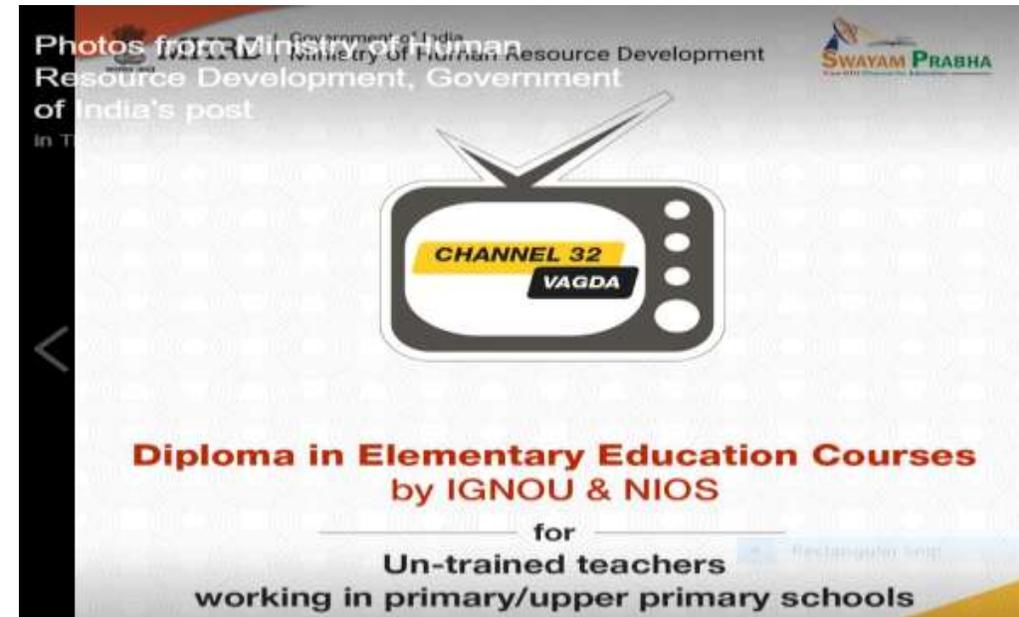


Initiatives of MHRD

LAUNCHED SCIENCE (STARS) AND HUMANITIES (STRIDE - TRANSDISCIPLINARY RESEARCH) RESEARCH SCHEMES.



CALLING ALL IN-SERVICE UNTRAINED TEACHERS WORKING IN PRIMARY/UPPER SCHOOLS, TUNE IN TO CHANNEL 32 (#SWAYAMPBABHA) ON DD FREE DISH, ZEE DISH TV OR JIO MOBILE TV APP TO DEVELOP SKILLS & COMPETENCIES REQUIRED TO MASTER THE ART OF TEACHING.



Initiatives of MHRD

LAUNCHED ARPIT ONLINE PORTAL FOR ANNUAL TRAINING OF 10 LAKH TEACHERS.



MHRD INVITES TEACHERS TO PARTICIPATE IN LEAP. A 3-WEEK LEADERSHIP DEVELOPMENT TRAINING PROGRAMME (2-WEEKS DOMESTIC & 1-WEEK FOREIGN TRAINING) FOR SECOND-LEVEL ACADEMICS IN 15 PREMIER [#HIGHEREDUCATION](#) INSTITUTIONS.



Initiatives of MHRD

परामर्श: NAAC रैंकिंग के इच्छुक संस्थानों की मदद। इस योजना के अंतर्गत प्रतिष्ठित संस्थान अपने आस-पास के उन संस्थानों का मार्गदर्शन और मदद करेंगे जो NAAC रैंकिंग में हिस्सा लेकर उत्कृष्ट बनना चाहते हैं।

Paramarsh: Scheme for Mentoring NAAC Accreditation Aspirant Institutions. Hand-holding of NAAC accreditation aspiring institutions by institutions of repute to help them attain higher standards of higher education.



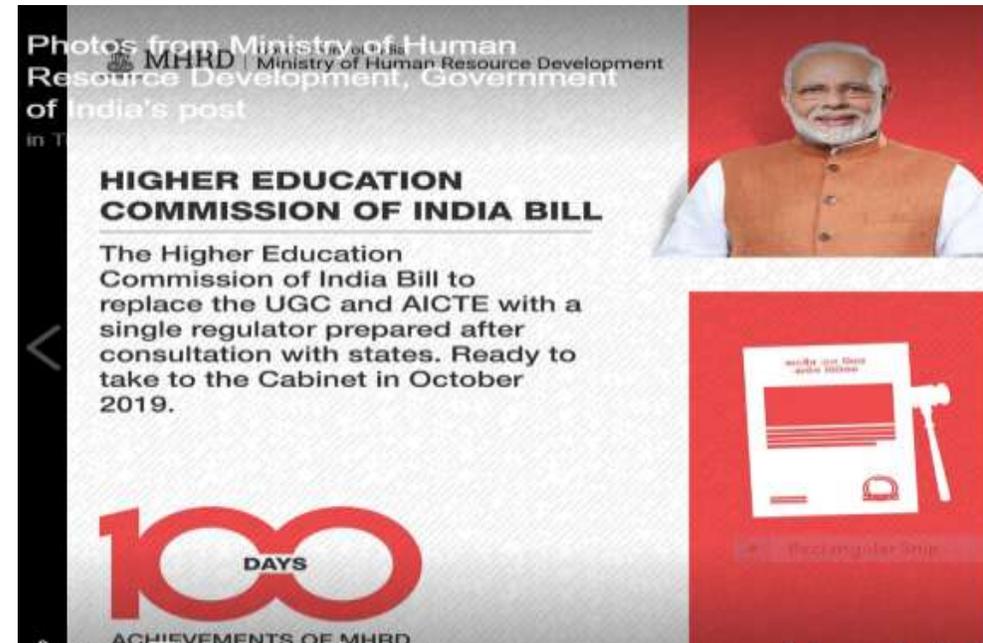
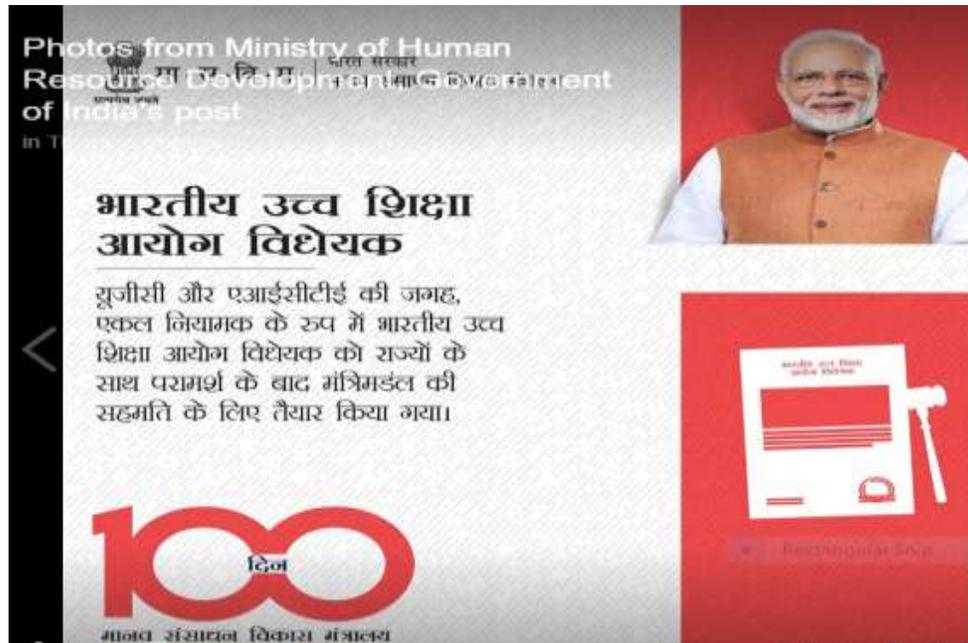
Initiatives of MHRD

MHRD

यूजीसी और एआईसीटीई की जगह, एकल नियामक के रूप में भारतीय उच्च शिक्षा आयोग विधेयक को राज्यों के साथ परामर्श के बाद मंत्रिमंडल की सहमति के लिए तैयार किया गया।

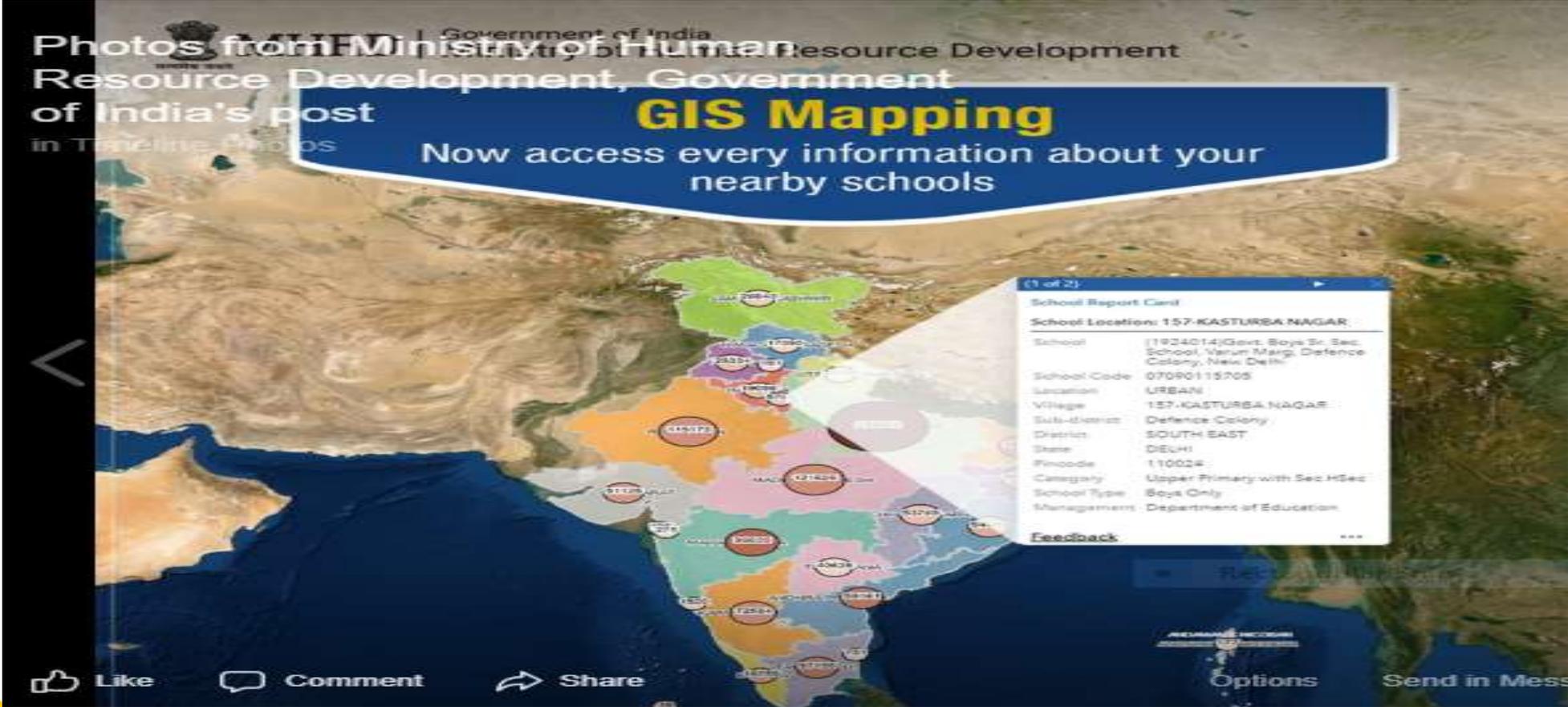
MHRD

The Higher Education Commission of India Bill to replace the UGC and AICTE with a single regulator prepared after consultation with states.



Initiatives of MHRD :

GIS MAPPING GIVES THE EXACT GEOGRAPHIC LOCATION OF SCHOOLS ACROSS INDIA. ONE CAN ACCESS THE SCHOOL'S REPORT CARD WITH INFORMATION ON SCHOOL CATEGORY, MANAGEMENT, INFRASTRUCTURE, ENROLMENT, ETC. [HTTPS://SCHOOLGIS.NIC.IN/](https://schoolgis.nic.in/)



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THANK YOU



UNIVERSITY WITH A PURPOSE

FIVE BIG IDEAS FOR THE OIL AND GAS ORGANIZATION OF THE FUTURE

1. Organizational agility.

The relentless pace of change puts a premium on the ability to adapt quickly to changing conditions—in other words, to be agile. In our view, agility combines two distinct concepts: *dynamic capabilities*, such as the ability to rapidly form cross-functional teams and reprioritize tasks to adapt quickly, and a *stable backbone* of core value-adding processes and cultural norms that provide resilience, reliability, and relentless efficiency.

	Stable backbone	Dynamic capabilities
Structure	<ul style="list-style-type: none"> • Simple structure as backbone, consistent over time • Clear expectations and accountabilities 	<ul style="list-style-type: none"> • Everyone reports to asset manager/business manager with ability to form and dissolve teams on weekly basis • Leadership as role, not title: people contribute and make decisions based on expertise and experience, not position in hierarchy
Process	<ul style="list-style-type: none"> • Industry standards used as default, with application tailored by asset type • One source of truth: easy data access for all employees, paired with simplified and standardized reporting • Daily work built around instant access to full company knowledge base and all experts 	<ul style="list-style-type: none"> • Up-to-the-minute performance data with immediate interventions • Decisions made once by people in room • Rapid prototyping of new designs; strong “test and learn” mind-set
People	<ul style="list-style-type: none"> • Shared culture and values as foundation of trust-based, decentralized decision making 	<ul style="list-style-type: none"> • Crowdsourced employee reviews • Entrepreneurial “can do” mind-set equally as important as technical and leadership skills in recruiting

FIVE BIG IDEAS FOR THE OIL AND GAS ORGANIZATION OF THE FUTURE

2. Digital organization.

Organizations have been digitizing for decades, but the digital revolution is still only just beginning. Within a few years, the Internet of Things will consist of more than a trillion sensors that generate and share data. Artificial intelligence and machine learning are no longer science fiction, and human–machine interaction is becoming ever more frequent. These innovations are about to change the way oil and gas companies work in three substantial ways:

- *A step change in safety and productivity* will result from digitizing both technical and nontechnical work in a way that automates 60 to 90 percent of routine manual activity while identifying true best practices.
- *New job classes and capability profiles will rise*, and many of these (such as data scientists, statisticians, and machine-learning specialists) simply don't exist in oil and gas companies today.
- *There will be new ways of managing people and performance*

FIVE BIG IDEAS FOR THE OIL AND GAS ORGANIZATION OF THE FUTURE

3. The millennial-managed organization.

Millennials are no longer a small group of new university graduates; in many oil and gas companies, they occupy managerial roles and are starting to climb into the executive ranks. As they rise through the organization, millennials will bring their own ideas about collaboration, accountability, and the use of technology. Leading companies will design an environment that meets the expectations of millennial leaders:

- *More flexible employment structures.*
- *A new working environment and culture*
- *A positive external footprint*

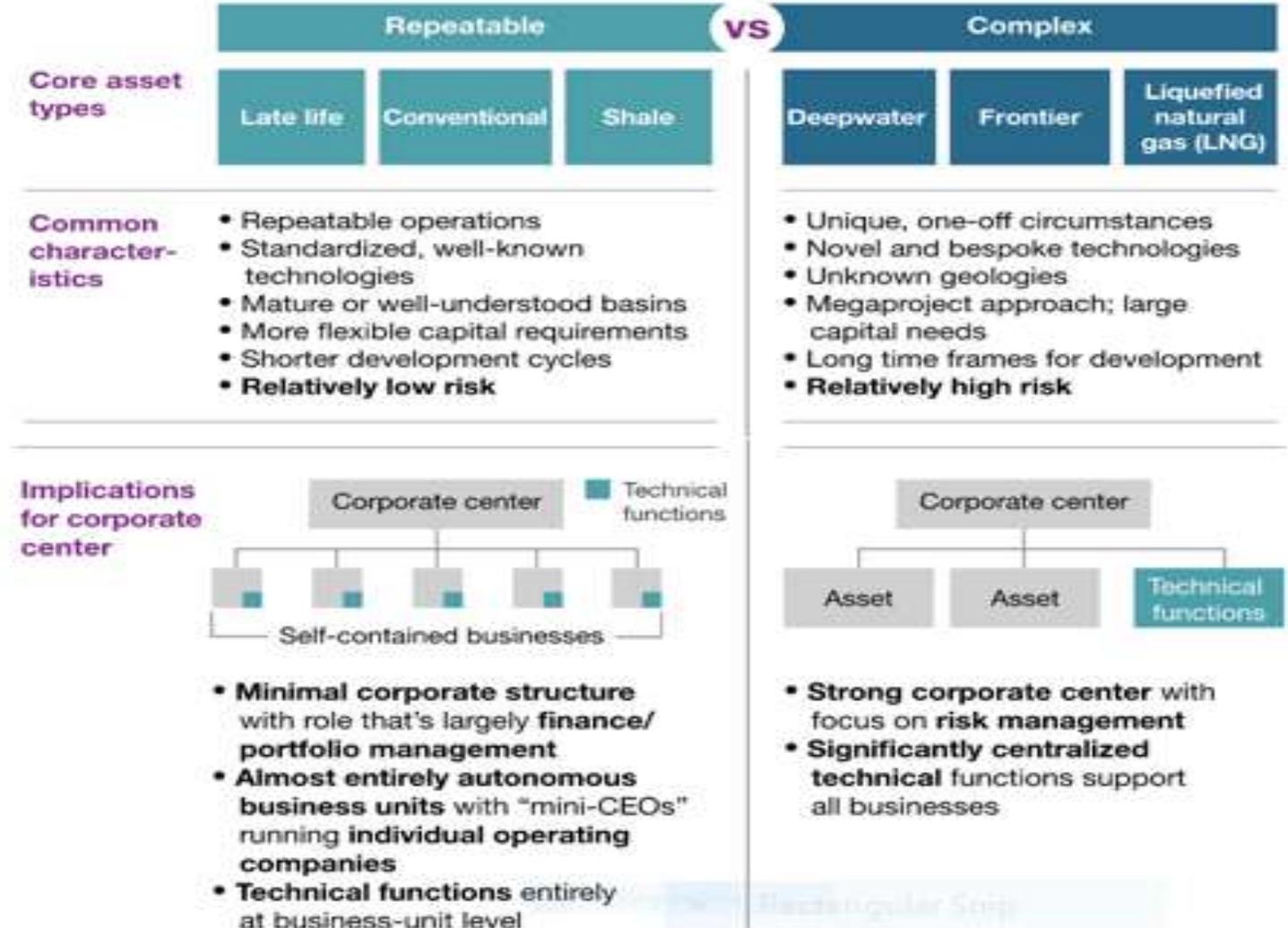
FIVE BIG IDEAS FOR THE OIL AND GAS ORGANIZATION OF THE FUTURE

4. The decentralized company.

Over the past 15 years, the corporate centers of most oil and gas companies grew significantly, as a way to manage risk, leverage scale, and share scarce technical talent. However, many of the forces underpinning the drive to centralize have now eroded. The collapse in crude prices has made large overhead costs unaffordable, and slow decision making has become a threat to long-term viability.

FIVE BIG IDEAS FOR THE OIL AND GAS ORGANIZATION OF THE FUTURE

5. THE VALUE OF A CORPORATE CENTER WILL VARY, DEPENDING ON THE LEVEL OF RISK INVOLVED



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