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REPORT

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FUTURE OF WORK
& HUMAN CHALLENGES
Technology and Beyond



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Technology and Beyond

A State of Industry Report

Research Study by BML Munjal University
School of Management
19th November 2022



Table of Contents

Foreword by Vice Chancellor	4
Executive Summary	5
Introduction	6
Purpose	7
How to read the report	8
Methodology	8
Quantitative Approach	9
Qualitative Approach	10
Findings and Discussion of Quant Study	11
Findings and Discussion of Qual Study	17
Synthesized highlights of the Study	21
Limitations of the Study	21
Acronyms	22
Annexures	23
Protocol 1: Survey Questionnaire used for the Quantitative Study	23
Protocol 2: Survey Questionnaire used for the Qualitative Study	24
Matrix Analysis	25
Abstract of Team Lease report on Career Index and Desirable Skills	26
Report Team	28

Table of figures, graphs & schematics

Table 1: Respondents profile for quantitative survey	10
Table 2: Respondants profile for qualitative survey	11
Table 3: Summary qualitative findings	19
Table 4: Acronyms	21
Table 5: Coding Schemes for qualitative study	24
Table 6: Top 10 professions	25
Table 7: Top 10 soft skills and technical skills	26
Figure 1: Research design	9
Figure 2: Causes that can disrupt business strategy	11
Figure 3: Distribution of hiring of talents	12
Figure 4: Frequency of appreciation of effort over performance in companies	13
Figure 5: Companies's take on moonlighting	14
Figure 6: Ascending order of ranking for motivation in workplace in organisations	15
Figure 7: Classification of meta-skills	16

FOREWORD BY VICE CHANCELLOR



Prof Shyam Menon

Vice Chancellor
BML Munjal University
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Welcome to our report on Future of Work which is being released at the third Leadership Summit of BMU on 19th November 2022. Through this industry report we are exploring how the Future of Work is going to be shaped from technology and beyond technology perspectives. Predicting the future of any sector is fraught with several challenges. This report attempts to take up this difficult task and has done it very well despite the limited time and resources the team had at its disposal. I am aware of the difficulties the team faced in collecting data and in conducting in-depth interviews.

Studying industry practices to inform academic knowledge is nothing new, this report, however, is unique in many ways. Readers will be able see significant value addition in finding insights into an emerging field of study, future of work.

We all know how technology is shaping the present work environment and the emerging technologies are going to shape the future of work as well. But factors beyond technology namely the human aspects would not have any less impact either. The report through its outreach to HR professionals in the industry collates the 'hiring wisdom' and engages with the ideas like growth mindset, meta-skills, and industry-academia integration. The report has highlighted how FutureTech, Growth Mindset, Quality of Life, Corporate Citizenship, Strong Industry-Academia Partnership along with Meta Skills, SDGs and scientific practices from Indian Knowledge Systems are going to inform and shape the future of work in India. I won't be surprised if this report sets a trend in the country and pioneers research and practice initiatives in academia and industry respectively to deep dive into predictive analysis in the field of future of work.

This report will be of interest to academics, practitioners, industry professionals in the HR, Learning & Development areas and higher education consultants. I see a great value for students and researchers as well. I would like to congratulate the team of researchers at BMU led by Prof Deepak Pandit and Dr Ritu Chhikara, along with their research scholars Mr. Kamala Kanta Dash and Ms. Sreenidhi. I see great potential to convert this report to an edited monograph and contribute to the effective academia-industry integration project that is underway around the country.

May the Future of Work be brighter. May our youth be ready to face the challenge of the future through dynamism, agility, social responsibility and humanism. With this prayer, I invite you to go through the report and share your feedback with the report team.

Happy Reading!

EXECUTIVE SUMMARY

Disruptive Innovations are connecting the digital world with the physical one, encouraging emerging technologies such as 5G, autonomous vehicles, automation and robotics, and artificial intelligence (AI). In a world that is globally connected how we work needs to evolve to keep pace with the changing role of the worker in the workplace. Black swan events such as the Covid 19 pandemic have accelerated this trend. This interest in the Future of Work (FOW) also intersects with current buzzwords around technology namely 'Industry 4.0', 'Data Analytics', 'Big Data' & 'Metaverse'. A general atmosphere of uncertainty about what the future holds in today's societies is aided by a confluence of economic crises, geopolitical issues, climate change, demographic challenges as well as rapid technological development. These provide a fertile ground for anxieties about the future. Given this changing dynamic work environment, the present study which is exploratory in nature attempts to understand the expectations, attitudes, and priorities of HR executives from a microcosm of Indian industry to identify the trends and skills that we would need to not only survive but also thrive in the future that is upon us. As aptly said by Alvin Toffler 'The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.'

To address these concerns and as a responsible member of the society BMU commissioned a research study to explore "What is going to be the Future of Work" for the Indian industry in the next five years. We choose a QUANTQUAL mixed method research design. The quantitative study covered a total of 251 HR executives from a versatile mix of industries in the Indian context - IT/ITeS, Consulting, Banking and Financial services, manufacturing, automobile, retail, oil and gas, and renewable energy among others. In addition, fifteen qualitative interviews of senior HR professionals were conducted to get a thicker and richer description of the emerging phenomena of the 'Future of Work' in our context. Our primary data was supported through an analysis of an in-house industry report titled 'Career Index and Desirable skill' by our collaborator Team Lease titled 'Career Index and Desirable skill'.

The report confirms existing trends such as 'Human Computer Human Interaction' (HCHI) through the emergence of digital channels for tech mediation leading to higher productivity, anxiety in the industry for what the future holds due to the worsening global economic outlook and rapid adoption of emerging technologies. Interesting findings include that freshers may lose their hold as the mainstay of organizational growth strategy as HR focuses more on mid-level and senior hiring to navigate the future. A growing acceptance of the gig economy as long as it is in conformance with the legal contracts is also seen, this implies an acceptance of future workers as skilled bundles rather than captive resources. The acceptance of meta-skills and rewards for efforts rather than performance are other key trends that foretell an opportunity for the industry to look at Indian knowledge systems to develop self-awareness and self-control in future employees to help them imbibe a growth mindset.

INTRODUCTION

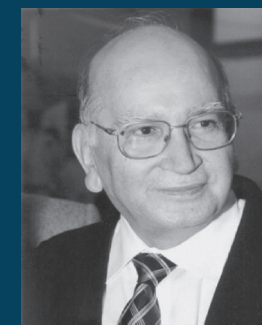
The way we work is changing. Automation and digital technologies are revolutionizing almost every industry, from agriculture to manufacturing to education. The coronavirus pandemic has transformed what people demand from their working lives as well as what employers might expect from them. Further, global instability and inflation mean that a well-paid, secure job that leads to long-term career growth is more important than ever.

These transformations are remaking the world's labor market. In the middle of these changes, it can be difficult to know what skills workers need to develop to stay ahead. The workplace is getting transformed very quickly. As per the World Economic Forum (WEF), by 2025 eighty-five million existing jobs around the world may be displaced by technological advancements and ninety-seven million new roles may emerge at the intersections of humans, machines, and algorithms. As a direct result of this trend skilling, re-skilling and upskilling of the workforce from here to then and beyond is critical to the future of corporate organizations. The future of Work will be shaped by both technology and human factors and there is an urgent need in academia and the industry to understand how factors of technology and those beyond technology are going to shape, disrupt and impact the workforce in the next three to five years.

In many parts of the Indian economy, technology is increasingly playing an important role in the control and management of workers. This summit focuses on the impact of technology and beyond on the Future of Work. The first track examines the intersections between technology and control in a variety of work contexts, both newer and more traditional, using both quantitative and qualitative lenses. Technological advancements, such as the increasing use of emerging technologies including those of algorithms and artificial intelligence (AI), have become embedded in organizations. This introduction of algorithms and AI is drastically changing the nature of work, impacting organizations, the individuals within them, and the work itself. Given the importance of understanding the impacts of such technological advancements on the future of work, more extensive research studies need to start focusing on this. We need to know the methodology and tools of implementation and the individual perception of technological advancements.

However, the fundamental human challenges that lie ahead in the future of work go beyond technology. Scholars from sociology, development economics, management, and natural sciences need to expand the focus on the future of work beyond technology. We have to put people at the center and examine fundamental human aspects that are critical to addressing and creating a better future of work, namely: leadership in a global crisis, work-family conflict, work mattering, and belonging. We would also need to study cognition, behavior, and the resulting consequences of technological developments for individuals as well as the outcomes for the organization. Apart from the intelligence quotient and emotional quotient, the spiritual quotient is increasingly becoming important. Self-awareness, mindfulness, global human connection, acceptance and appreciation of cultural diversity, and a service mindset are being included in this new age quotient. Such self-awareness and empathy are essential for sound mental health and work-life balance and are critical for high-level resilience so essential in the VUCA world that is the future.

As the business world grapples with VUCA triggered by war-like situations, climate change, and economic slowdown, the workforce will be expected to be highly skilled to be productive, and highly resilient to challenges. The skills required would include cognition and meta-cognition skills like critical thinking, creative thinking, developing a growth mindset and learning-to-learn, and very importantly, self-regulation. Going further, these skills will need to go hand in hand with social and emotional skills such as empathy, compassion, lucid communication, responsibility, self-efficacy, and collaboration. This will promise to make them capable of handling the fast-changing business and societal norms. Such rapid adaptations will allow increased opportunities for people in the sectors of the care economy, and climate action and ensure the overall well-being of the people and the planet.



Prof M. M Pant
Theoretical Physicist
Former Pro Vice Chancellor, IGNOU

As a theoretical Physicist, pursuing Computational Physics in the late 1960s, I was often asked "How does the latest advances in Physics help Mr TC MITS, the celebrated man in the street"? Today that answer is the GPS, which is used by the common man to find himself on the right street. The GPS system relies on atomic clocks to measure time with high precision, and Einstein's General Theory of Relativity to do the calculations. In the not too distant future, it will be the Quantum Technologies that will help Mr TC MITS to lead a long healthy life of material prosperity and abundance. Our goal as educators therefore should be to create a 'Quantum Ready Workforce' in all its dimensions.



Mr. Bikram Singh Bedi
Managing Director Google Cloud India

The pandemic accelerated the adoption of emerging technologies by organizations and changed the way we work. While we are seeing the world coming back to normal and employees working from offices, there is rising demand for flexibility and remote working. Employees are asking for strategies that will make hybrid work a more equitable and productive experience for everyone. At Google, while we are transitioning into a hybrid work model, I believe, technologies that can help teams of all sizes stay better connected and engaged, whether they're working from home, the office, or anywhere in between will enable organizations to achieve higher productivity and improve efficiency in the future of work.

PURPOSE

This annual leadership summit of the university is organized to drive conversations between industry, academia, and policymakers and explore the most pressing issues of the time with the business, industry, and entrepreneurial community. It attracts a large audience from diversified backgrounds: Industry Leaders, Veterans, Recruiters & HR Professionals, Students, and Academia.

The summit is aimed at deliberating and brainstorming on the most compelling issues of our time. While the previous editions have essentially looked at sustainability and workplace turbulence in the functioning of corporations, among others; we are now bringing to the fore some of the crucial questions that knowledge workers as well as blue-collar workers would be grappling with in the near future.

Students are accustomed to being asked questions like: What is your chosen area of study? What are your career aspirations? What is your roadmap to get there? Unfortunately, the children and youth of our nation have experienced huge learning losses during the environment that resulted due to the pandemic. Such a gap will inevitably disrupt their progress in the future. India had witnessed one of the longest school closures compared to many nations across the globe and experts suggest that this will have stalled learning and caused a learning regression. These deficits experienced in the economic and educational sectors are projected to cause an increased mismatch between ability and aspiration, notwithstanding the gaping gaps in access and awareness. Since we need to prepare the youth for the future of work, we need to intrinsically understand what the future holds and the challenges it is likely to pose.

As responsible members of society, we at BMU feel that we must take the lead in addressing such issues. In line with our theme, 'Future of Work and Human Challenges', we commissioned research with over 250 industry executives, interviewed over fifteen academic and industry leaders and collaborated with Team Lease, a leader in HR placement, to know more about the future of work and how it is going to take shape in India over the next five years.

By exploring human challenges in the future of work, this report aims to highlight the essential skill sets that need to be honed and gives recommendations that are imperative to deal with the rapidly evolving emotional, intelligence, and spiritual quotients of the workforce. Ignoring the pre-emptive measures and actions that need to be taken can be very costly for organizational leaders who want to maintain a competitive advantage as well as for scholars who care about expanding our understanding of the future of work. After all, work is about humans, to begin with, and thereafter about machines.

HOW TO READ THE REPORT

This report is an industry status report intended to have utility for decision-makers and thought leaders in academia and the industry. The research team has been engaged for more than six months in discussing the ideas around the future of work. They chose to undertake an industry review of the idea through two different studies, a quantitative survey, and a qualitative in-depth interview. Separate protocols were designed for both studies. Both methods have come up with interesting insights about the future of work and their synthesis can be seen in the conclusion.

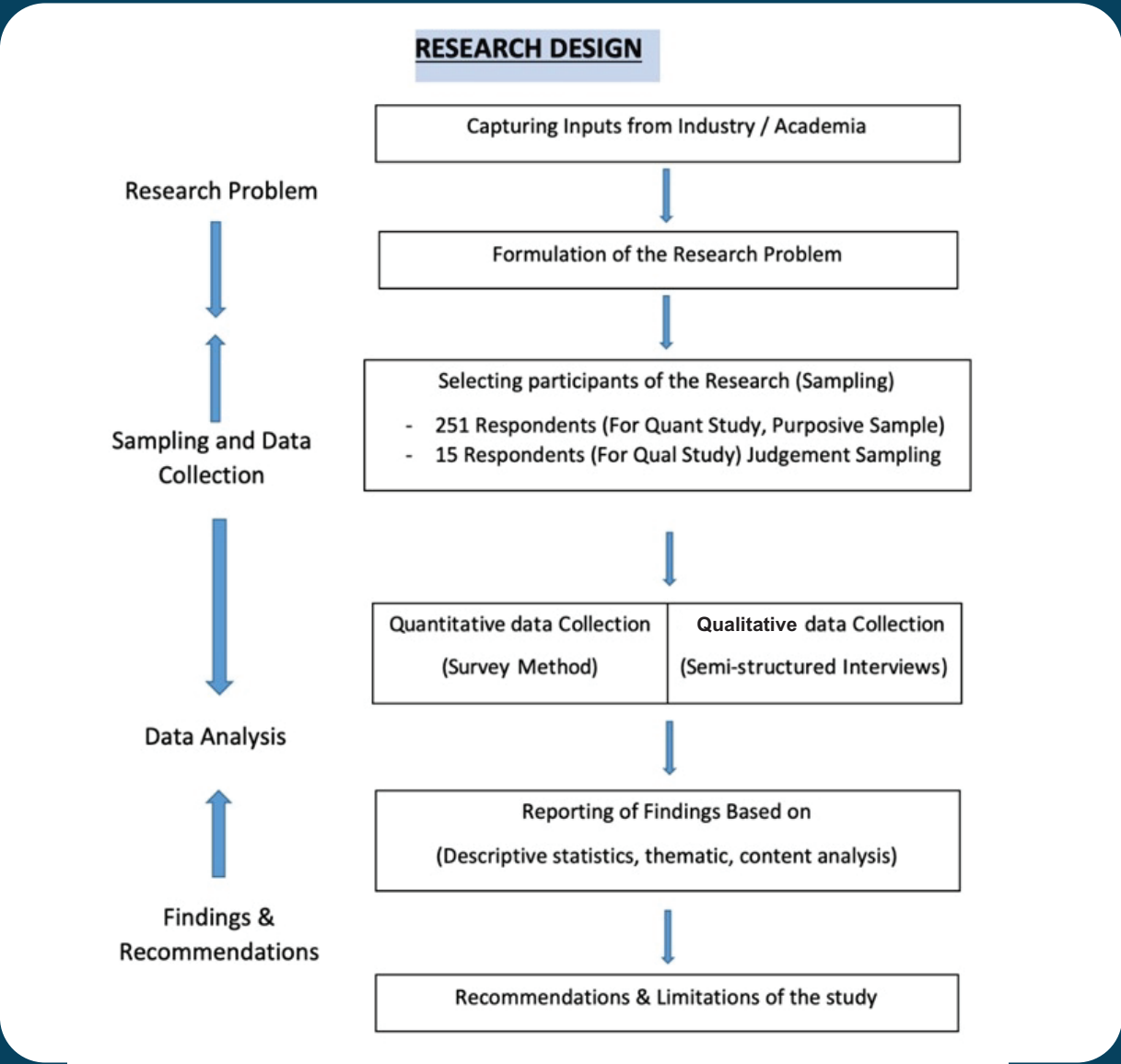
The authors of the report have deliberately avoided a lengthy or detailed academic literature review and have kept it focused on the insights received from the HR leaders in the industry. This was purposefully done to fill the gap in the literature in this emerging field which is yet to get enough academic and scholarly attention. The industry is also slowly catching up with the concept. This is where the report intends to make a small contribution and trigger further discussion in the area.

We have interspersed the views of academics and other industry leaders on the theme of the summit throughout this report so that the reader can compare and contrast our findings with the current view of industry and academia. The presentation of the findings is amalgamated with the discussion of the findings of both quant and qual studies. The synthesized finding from both studies informed by the team lease report on 'Career Index and Desirable skills' are presented as highlights of the study in the final section.

METHODOLOGY

Any good research endeavors to find answers to existing and critical problems by creating new knowledge. In the last few years, surged by the corona pandemic, there has been a line of discussion across industries and geographies around 'What is going to be the Future of Work'. This is because there has been an adequate disruption in the field of work owing to both dimensions- that of 'technology' and that of 'beyond technology'(Human).

With cues received from both industry personnel as well as academics, we identified and recognized this as a critical research problem and set out to gather the answers. We have prepared a research design as below.



Research Design of Study

To address the issue at hand, a systematic approach was followed. We opted for a mixed method of research: Quantitative approach and Qualitative approach, as the nature of the study, was exploratory and required both objective and in-depth coverage.

QUANTITATIVE APPROACH

In Study 1, we followed the Quantitative method to collect and analyze numerical data which was collected using a survey. The survey protocol was formulated based on expert opinions and secondary research using industry reports etc. Team lead, our knowledge partner helped with the protocol design. HR personnel at senior and mid-level were chosen as respondents. The sample size was 251 and based on the best judgement of the researchers, judgement sampling was used. Keeping the purpose of the study in mind, the respondents were chosen very meticulously. A versatile mix of industries was chosen for the study. These were IT/ItES, Consulting, Banking and Financial services, manufacturing, automobile, retail, oil and gas, and renewable energy among others. The organization sizes of the respondents varied from 10 to over 1000 employees. The organization size baskets were 10-50, 50-100, 100-250, 250-500, 500-1000 and above 1000. Maximum respondents (around 40%) belonged to organizations of over 1000 size.

The respondent table is shown below. Analysis of the data was carried out using descriptive statistics. Findings have been presented in the subsequent sections.

Respondents Designation	Responses	Count
Manager (HR)	47.01%	118
Sr. Manager (HR)	10.76%	27
General Manager (HR)	15.94%	40
Head of HR	9.16%	23
CHRO	1.99%	5
Other (please specify)	15.14%	38
TOTAL		251

Table : Respondents profile for quantitative survey



“ Human history can be perceived from the perspective of technology and how it impacts human life. The disruptive technologies (internet, robotics, virtual reality and artificial intelligence) of recent years, a period also known for the fourth industrial revolution, are radically changing the way we live and the way we work. Covid-19 precipitated the application of digital technology, remote working and virtual teams, leading to re-structuring of work and reorganisation of work place. The platform-based work and the crowd workers have broken the boundaries of time and space ushering in the 'gig economy'. These developments could be a serious threat to the role of human intervention in the future of work.”

Prof Kuriakose Mamkootam
Founding Dean of Business, Public Policy & Social Entrepreneurship at Ambedkar University



“ Digital workspace is driven by automation, which has resulted in new fundamentals of work and its future. The way forward for policymakers and business leaders is to adopt reskilling of employees with a focus on demand-driven training. It is also important to have more emphasis on cross-functional and disciplinary integration. The human challenges could be mitigated by rethinking incomes and innovating a seamless system for people and machines to function together. I feel it would be

a good idea to create incentives for private-sector investment to treat human capital like any other capital. Also, we need to rethink our team-based skills with a focus on job creation.

Nitin Sethi, Adani Group
Sr. Vice President & Chief Digital Officer-Consumer Business, Adani Group

QUALITATIVE APPROACH

In study 2, we followed the qualitative method to collect and analyze subjective content using semi-structured interviews. Survey protocol was created by the researchers which had seven semi structured questions to help collect 360-degree information around skills that will be required in the future- with and beyond technology. A versatile mix of industries was chosen for the study. Respondents were HR managers, at CHRO, senior, mid-management and manager levels in organizations that were chosen from various industries. Interviews with 15 HR professionals from different select industries were conducted for the study. They were all senior (higher management or director-level HR people in the organization). Each interview was 30-40 minutes long and was recorded for analysis using qualitative research software.

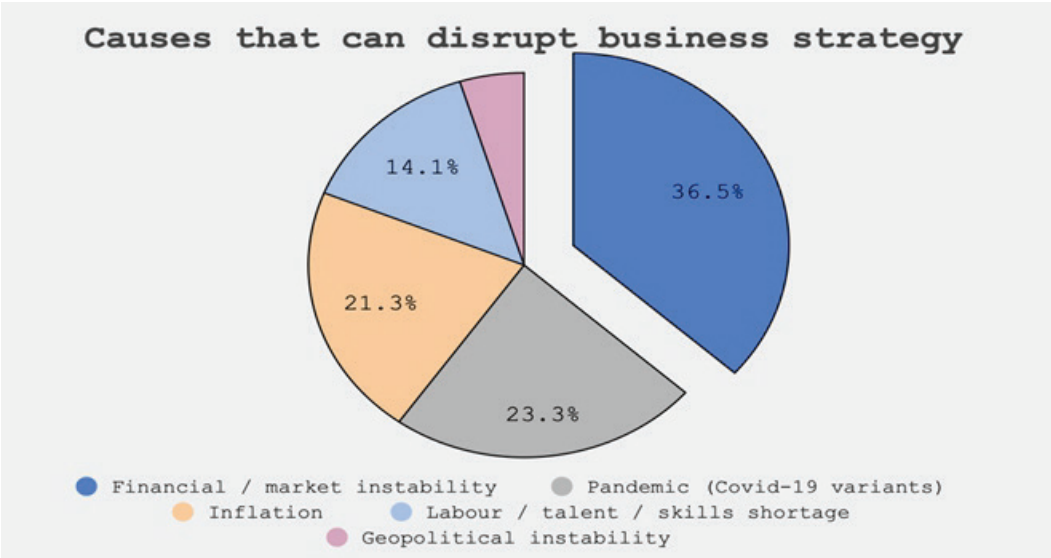
The respondent table is shown below. Analysis of data was carried out using software-based qualitative tools. Findings have been presented in subsequent sections.

S. No.	Designation	Sector/Industry	Employee strength
01.	VP (HR)	IT	3500+
02.	Director (Personnel)	IT & ITES	25000+
03.	Director (HR & Administration)	IT & ITES	15000+
04.	CHRO	Online Retail	On payroll:1800 Outsourced: 200,000
05.	VP (HRD)	Retail	4300
07.	GM (Operations)	Manufacturing	10000+
08.	Sr. Manager (Employee Welfare)	Manufacturing	24000
09.	Sr. GM (T&D)	Services	900
10.	Head-HR	IT	8000+ (India)
11.	North India Head (Talent Acquisition)	Financial Services	7000 (pan India)
12.	Group CHRO	Retail Services	2000
13.	CHRO	Logistics Service Provider	5000+
14.	Executive Director (HR)	FMCG	40000+
15.	HR Director (D&I)	FMCG	35000

Table 2 : Respondents Profile for Qualitative Survey

FINDINGS AND DISCUSSION OF QUANT STUDY

EXTERNAL RISKS TO IMPACT FUTURE OF BUSINESS & FUTURE OF WORK



Themes	Respondents	Percentage
Financial / market instability	91	36.25%
Pandemic (e.g. future Covid-19 variants)	58	23.11%
Inflation	53	21.12%
Labor / talent / skills shortage	35	13.94%
Geo political instability	12	4.78%

37% of our respondents believe that the future growth strategies of their companies can be badly impacted if there is a financial or market instability. 23% believe that the pandemic like situation will make things difficult for their companies. 21% believe that inflation can upset any future strategy, while 14% agree that talent & skills shortage will impact adversely their company's prospects and 5% of the respondents who have an international presence strongly believe that geopolitical risks can unsettle the future business strategy of their company.

Our qualitative study finds that these causes can be inter-linked, and inter-dependent where triggering one may lead to the other(s) creating a ripple effect on the regional and global markets. These findings are consistent with global studies, including that of the Global Risks Report published by the World Economic Forum (WEF) that have continued to highlight business challenges.

Though, financial and Market Instability coupled with the risk of resurfacing of any Covid-19 variant, or any such other virus would be a short to medium-term challenge to the industry, our respondents don't see India being affected to a higher level, say to the level European countries which are being affected by the Russia-Ukraine war. Geopolitical risk is expected to have a lesser impact on the Indian economy unless its ripple effect is spread to the world. HR leaders in the tech industries of India will expect their new hires to be proficient in updated technologies and skilled with requisite corporate skills.

World Economic Forum (2022) The Global Risks Report 2022, 17th Edition, Geneva https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2022.pdf

FRESHERS AND EXPERIENCED WILL DRIVE THE FUTURE OF WORK

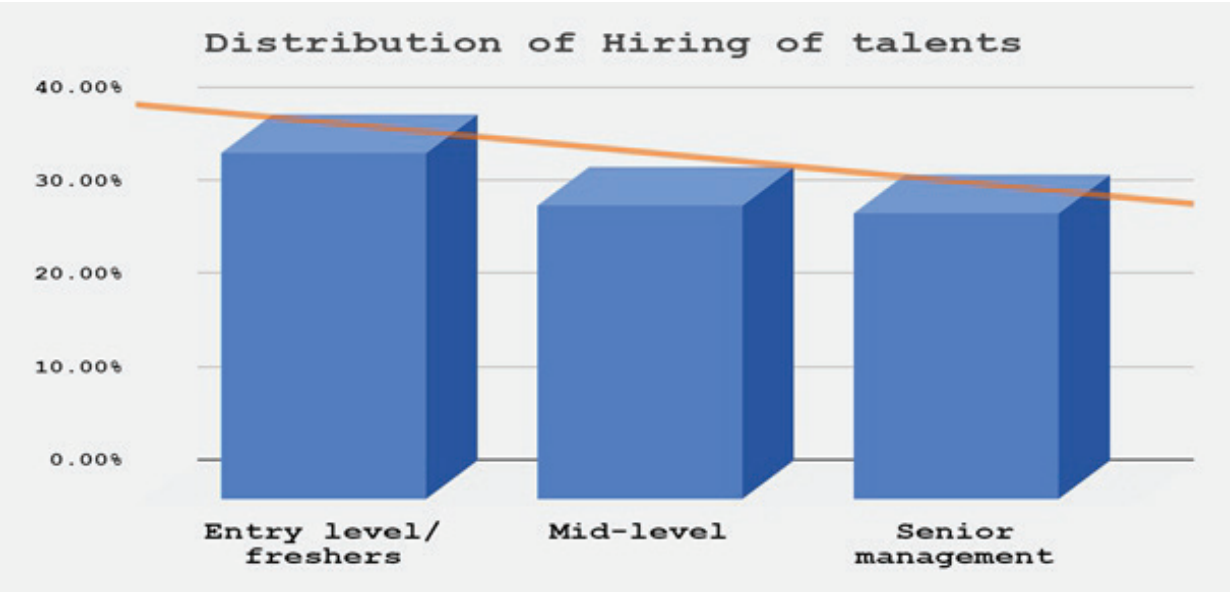


Figure : Distribution of hiring of talents

Categories	Respondents	Percentage
Entry level / freshers	93	37.05%
Mid-level	79	31.47%
In senior management	77	30.68%

Though entry level and freshers remain the highest hire in percentage terms, they are far below the golden ratio of 50:30:20 indicating that they are not going to be the preferred category for the human resource officers to hire to meet the needs and challenges of the future of work. Only 37% have preferred to open positions for the entry level and freshers, whereas 31% of positions are for the mid-level and 30% of positions are for the senior level.

The freshers won't have any significant advantage when it comes to job opportunities in the future of work settings. HR officials have shown more interest in hiring mid to senior level employees even though it would cost them higher to hire experienced professionals. They have chosen this as a deliberate strategy as they believe freshers will need additional training and on-the-job support as they are inadequately trained and skilled by their academic institutions to handle the work demands and the pressure of corporate life.

This is potentially a very dangerous trend having a long-term socio-economic implications. India is a young country and millions of students are graduating each year as freshers looking for new work opportunities. If the freshers are not tuned to the need of the future of work opportunities, there would be a huge number of degree-possessing unemployed youth, turning into a youth bulge, leading to potential social unrest. There are huge benefits in hiring the youth. They bring in dynamism, energy, and openness to learn new ideas and skills to the workplace.

GROWTH MINDSET IS THE FUTURE OF WORK

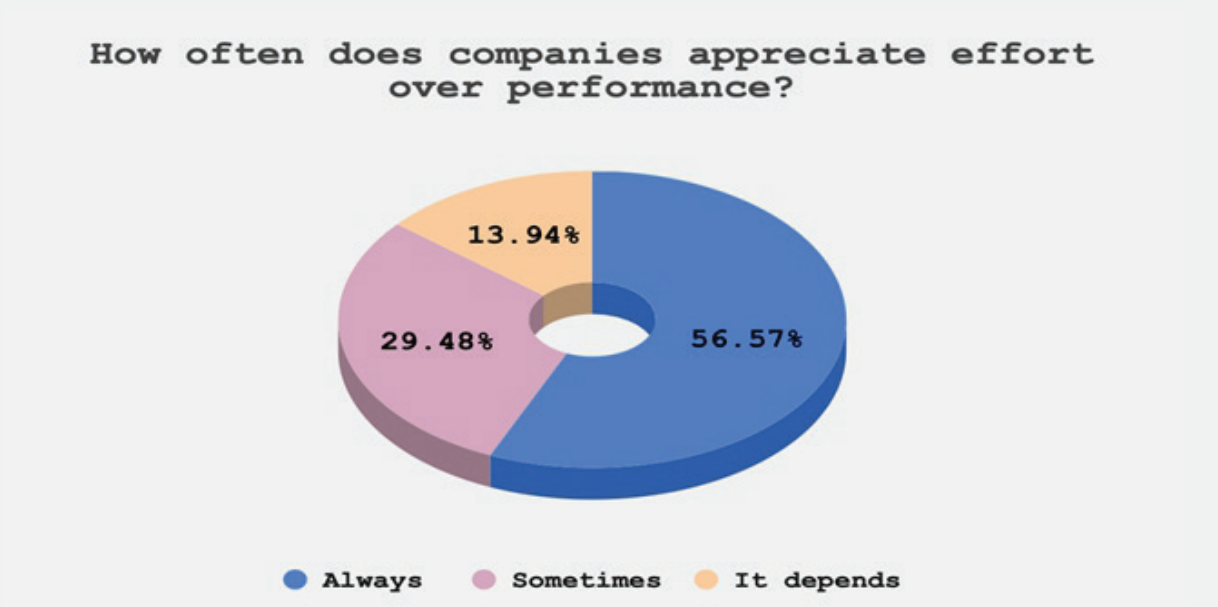


Figure : Frequency of appreciation of effort over performance in companies

Frequency	Respondents	Percentage
Always	142	56.57%
Sometimes	74	29.48%
It depends	35	13.94%

57% of our HR decision makers believe that employee efforts and initiatives should be appreciated rather than only their performances. 29% say that efforts will be recognised sometime and 14% agree that it will depend on the circumstances and on the nature of the effort. None of our respondents disagreed with the requirement of appreciation for the efforts.

This is a unique finding that rejects the perform-or-perish theory that has been quite infamous in the industry. Now our finding hints at a new concept that can be summarized as effort-is-excellence. Every successful company has a common theme: a growth mindset. Leaders with this mindset constantly upgrade their talent and playbook, learn from their surroundings and the experiences they've encountered. They believe in being challenged, and they create high-performing teams that like to do better and be faster than yesterday. Companies are motivating their employees by appreciating their effort which is a way of positive reinforcement that has becomes a part of the growth mindset. 25% of the survey takers also believe that their organizations are forthcoming to even celebrate failures to keep the morale up! This shows how much the growth mindset has become the new normal now.

MOONLIGHTING IS THE FUTURE OF WORK

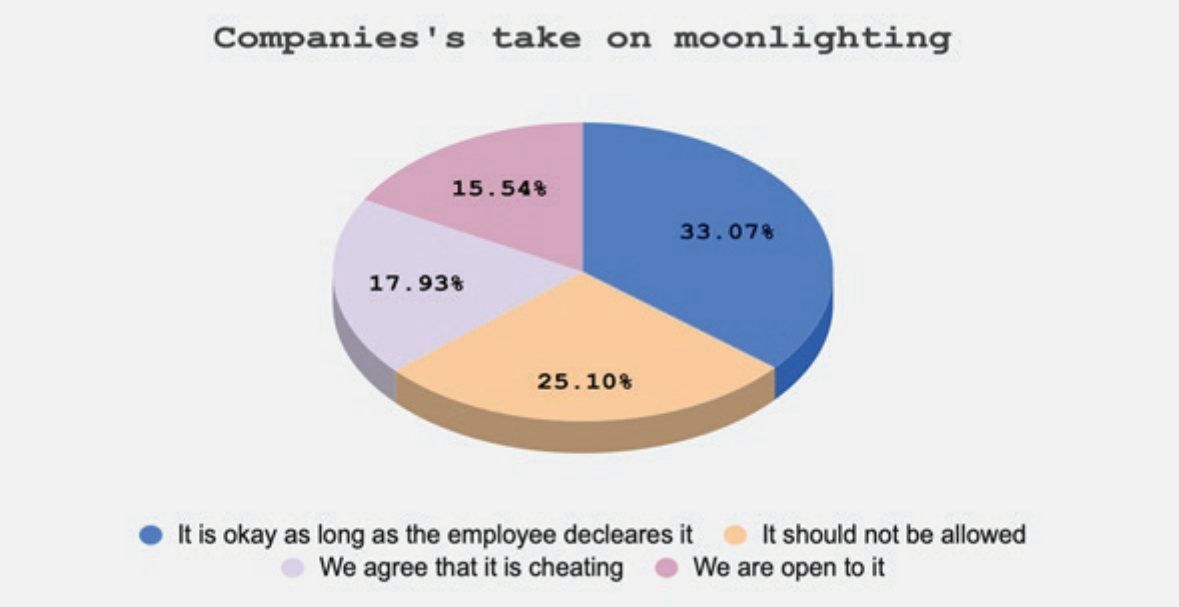


Figure : Companies' take on moonlighting

Take on Moonlighting

It is okay as long as the employee declares it	83	33.07%
It should not be allowed	63	25.10%
We agree that it is cheating	45	17.93%
We are open to it	39	15.54%
No comment	21	8.37%

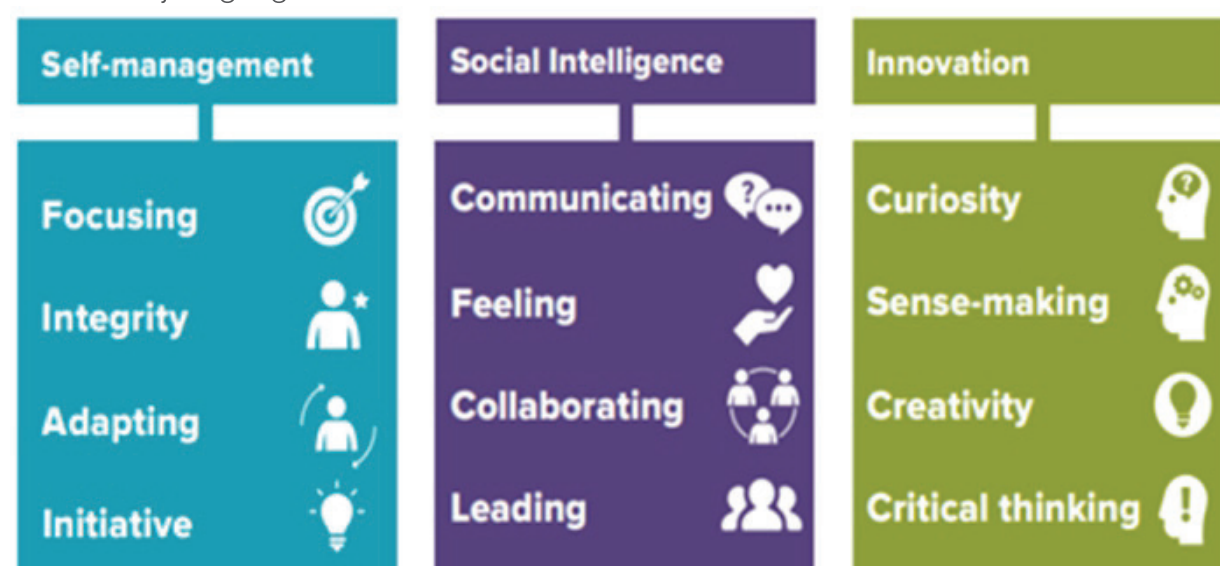
Moonlighting, which refers to having a second job after the 9.00 AM to 5.00 PM workhours, especially taken up in the evening to night times, has divided the industry leaders around the world. Our findings have three major groups, the first one that vehemently opposes it by terming it as illegal, unethical, and cheating; the second one that openly supports the practice by highlighting the need of an employee to have a second source of income; and the third group that extends qualified support if the employee declares it & is not working for a competitor. Close to 50% of our respondents have extended support to moonlighting.

Moonlighting has been highlighted as the future of work. While Swiggy and Zomato have extended support, companies like IBM, Wipro and Infosys have opposed it. In the meanwhile, Tech Mahindra CEO C.P. Gurnani has extended his support to moonlighting along with the government of India minister Shri Rajiv Chandrasekhar. Shri Chandrasekhar has argued in favour of employees as entrepreneurs and moonlighting becoming a future work culture. As the support from leaders in the industry and government for accommodating moonlighting increases, it will create more opportunities for second and part-time jobs especially where technology will play an important role. Future of work as discussed above is going to be a very dynamic space where access to emerging technologies like AI, ML, & IoT etc. along with skills to leverage from superior telecommunication platforms like 5G & 6G, human management skills and creative problem solving will have a greater place.

Ranking of work place motivations followed by organisations (1 is the least and 5 is the most)

Motivation	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
Achievement	6.37%	2.79%	9.16%	35.46%	46.22%
Effort	2.07%	7.17%	7.17%	38.25%	46.22%
Recognition	2.79%	5.58%	17.53%	40.64%	33.47%
Celebrate failures	4.78%	11.95%	25.90%	31.47%	25.90%
Work itself	3.60%	4.00%	14.80%	41.20%	36.40%
Steep learning curve	2.43%	3.60%	20.00%	44.80%	29.20%

72% HR leaders in our survey believe that technological skills are becoming redundant in a period of 2-5 years and 28% believe that soft skills also face the same situation in the rapidly changing workplace. That is why the need for reskilling has emerged as a very high priority for market leaders and this trend is going to be similar in the future of work settings as well. 84% HR leaders argue that higher education institutions must take more responsibility in the skilling, grooming and resculpting their students for the industry. Our interviews with HR leaders have revealed why the focus must have to be also on both hard and soft skills. The new skills set that is being discussed now is meta skills. Meta skill is a "higher-order" skill that enables one to better learn other skills and improve the existing ones. Essentially, meta skills are the foundation for developing, cultivating, and executing other skills. For example, although the ability to communicate in English can be considered a specific skill but knowing how to develop the skills to learn any language is considered a meta skill.



India Today (13 October 2022) Minister Rajeev Chandrasekhar says moonlighting by IT employees okay if no breach in contract, Source: <https://www.indiatoday.in/technology/news/story/union-it-minister-rajeev-chandrasekhar-india-tech-sector-moonlight-okay-contract-5q-rollout-2284869-2022-10-13> last accessed on 14, November 2022

(Source: Meta Skills: Skills Development, Scotland)

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FINDINGS AND DISCUSSION OF QUAL STUDY

In the present study encompassing five diverse industries representatives of fifteen plus reputed companies spanning multiple countries across continents and responsible for the human assets of the organizations provide their perspectives on 'Future of Work & Human Challenges: Technology and Beyond'. The workforce of the 21st century, irrespective of the domain, is characterized by the adoption of technology in their work spheres. A few commonalities emerged across the respondents' views through detailed semi-structured interviews. Post-rigorous analysis, these commonalities were grouped into six themes and sixteen sub-themes.

Human-computer-human interaction (HCHI) emerged as the first theme. HCHI refers to human-to-human-mediated technology. The technology is primarily in the form of digital platforms like G-meet, MS Teams, and Zoom. The theme was subdivided into three sub-themes: First, digital channels explain the emergence of virtual platforms connecting employees from distant locations. The pandemic and post-pandemic 'new normal' has accelerated the adoption of tech-mediated interaction between the team(s), which is the second sub-theme. Adopting digital channels and accepting tech mediation has led to improved predictive measures by senior management. Companies are adopting customized software to predict the quality of work coordination among team members, maintain the work-life balance of an individual employee, and take preventive measures to ensure human assets are maintained in their optimum condition.

Computer Human Interface (CHI) has facilitated the geographical dispersion of the workforce. The companies, due to several reasons including but not limited to taking advantage of tax concessions, being near to the source of raw material (case in point- EV battery manufacturers in China), presence in the market, and attractiveness of the market (Amazon in India), competition (Walmart purchasing Flipkart), availability of knowledge workers, supply of talented workforce (case in point -BPO's, KPO's, apparel manufacturing) expand their operations across multiple regions, domestically and globally. In order to retain competitiveness, the organizations are recruiting the 'local' talent with a global outlook- 'glocal': (G)lobal + local. These employees are well-versed in national norms, culture, and regulations; simultaneously, they aspire to showcase their skills on a global platform. Expanding business operations into different regions, especially under-explored regions like Latin America, parts of Africa, and the Middle East, will necessitate the organization's recruitment from the host country since adaptability to the local conditions might be an area of concern for the expatriate employees. A related sub-theme is diversity management by the organization. Shortly, diversity will not be restricted to different nationalities and cultures with their unique customs, gender, differently-abled, or sexual orientation but will require the inclusion of ethnicity-based divisions, semantics, divisive thoughts, gender fluidity, and acknowledging contrarian perspectives. The latter is deemed more challenging in the context of individuals with intersectional social identity, i.e., overlapping and interdependent systems of discrimination or disadvantage among specific social groups due to their choices.

The organizations are embracing themselves for the projected disruption caused in the operations due to **human-tech-human role substitution (HTHRS)**. A major theme, HTHRS, highlights the increasing role reversal between human employees and multiple facets of technology(ies) implemented in the operations. An example can be service robots replacing humans in warehouses, automation of processes, AI-based chatbots replacing employees,

virtual assistants, etc. Nevertheless, the study finds that technology will remain secondary to people's primacy. The respondents acknowledge the expansion of technology in multiple domains. However, there are specific tasks especially requiring moral judgment, ethical and critical thinking, and direct communication, where humans have replaced machines. A case in point can be the hospitality industry, where human concierges are replacing robotic concierges with 'genuine' smiles, personal warmth, and the ability to solve travelers' queries. Essentially, the anthropomorphic features providing the robots with human-like features are undesirable. A few respondents felt that going ahead, anthropomorphism will be encouraged by the labor-intensive customer-facing organizations, enabling them to replace humans with machines.

Organizational citizenship behavior. The employee identifying himself as an organizational citizen is more likely to go beyond his job description and be more concerned with the organization's growth. A model citizen-employee personally invests in the organization, takes additional responsibilities, spreads positive word of mouth, and is steady in his conviction of the organization being supreme. Nevertheless, an employee plays multiple roles in a personal capacity. He influences and is influenced by exogenous factors, which percolate in his work too. This impact has led to the emergence of activist-employee. The respondents believe that while in developed countries, the concept of activist-employee is well-recognized, the concept is gradually taking root in India in the form of corporate whistleblowers, concern for environmental sustainability, and enforcing improved working conditions, among others. The recent trend of the corporate employee's doing side jobs can also be correlated to the activist employee phenomenon.

Quality of life. The awareness about healthy living and improved medical facilities has extended the life spans; still, the respondents believe that the productive life span of the employees is gradually decreasing. They attribute this to several reasons like burnout, mental exhaustion, negligence towards personal care, and the demands of modern living. Within the organizational context, the misaligned goals, i.e., a mismatch between personal ambitions and the organization's expectations, is a constant source of dissonance. The respondents believe that the pandemic created 'new normal' will accentuate this dissonance, visible in the form of conflict among management and employees of leading organizations related to work from home viz a mandatory physical presence on the premises. There is a view prevailing in higher echelons that while working from home, the employees engage in freelancing gigs/moonlighting during office hours. While, for the retail companies, this was not of immediate concern, IT & ITES organizations actively discourage these practices. Besides the concern for data privacy, the companies are concerned with the negative impact these freelancing projects will have on the organizational ecosystem.

People skills. In the present era of Industry 4.0 and transforming to Industry 5.0, the shorter learning curve is challenging for both the employer and the employee. This reinforces the need for meta skills learning to learn both for the employee and the employee. Mutually, they both need to identify and invest in acquiring the requisite skillsets. However, creating and maintaining a peer-to-peer relationship is a skill that will benefit the employee and, consequently, the employer at all times-today, tomorrow, in the near future, and distant future- till the time humans are integral to the organization.



Future of work is Phygital, and this change presents opportunities for organisations to transform their culture and ride the wave to be more agile and efficient. The work world is now hybrid and has accelerated the growth of robotic technologies. The workforce has had time to look within, find answers to what is the Purpose that drives them, they have become more socially sensitive and are trying to address the aspirational deficit. A significant cultural shift has been there on the elements of trust and empowerment. These two

are cornerstone. Trust escapes a simple measurement because it is too subjective for universally reliable metrics, but if organisations can embark on a continuous journey of engaging, involving, transforming, with sincerity and honesty, chances are, the product will be an employee-friendly nurturing organization. Neoteric concepts like diversity, equity and inclusion will add to the resource pool and bring in the richness of thoughts, ideas, opinions. Collaborative digital tools will help people explore multi-geography synergies more efficiently and rapidly drive business outcomes.

Dr Rima Ghose Chowdhury
Executive Vice President & CHRO
Datamatics



Future of work




Technology would play a strategic role in re-defining the future of work. To understand it better, let's segment the last 5 years into three stages – Pre-pandemic, Pandemic, and post-pandemic. Firstly, Pre-Pandemic was the stage when work was done in the physical world. Secondly, during Pandemic disruption, technology became an enabler for 'keeping lights on' and the whole society embraced online.

However, in the Post Pandemic Digital and hybrid future, there is no going back to physical world. Never before has there been such an opportunity to actively shape the future of work. With proper analysis on the skilling needs of human stakeholders, we can create a platform to build the future of work that is energizing, constructive, and equitable.

Mr. Raman JS Dhooria
Director- Corporate & Education, Microsoft

Themes	Sub-themes	Representative quotes
Human -computer - human interaction	I. Digital channels	<i>The digital medium based communication comes with their own set of challenges.</i>
	II. Tech mediation	<i>The face -to-face cooler talks has given way to screen -based interactions.</i>
	III. Predictive measures	<i>Thanks to present day tech, there is a bonding (or lack thereof) among the geographically distant team members.allows evaluation of productivity and in -time remedial measures.</i>
Geographica l dispersion	I. Glocal talent II. Adaptability III. Diversity management IV. Intersectionality	<i>A global company needs to recruit talent from diverse geographies . Company & employee need to mutually adapt to each other's vision .</i>
Human -tech-human role substitution	I. People primacy II. Anthropomorphism	<i>People led deliveries will remain cheaper than AV's or drone based . Technology is mimicking humans & is a more trustworthy employee .</i>
Organization Citizen	I. Citizen -employee II. Activist employee	<i>Present day employee plays multiple ro les as a societal member. That reflects on their workplace too. An employee is a human affected by exogenous factors, & they are vocal with their opinions .</i>
Quality of life	I. Productive life span II. Goal-alignment III. Gig/moonlighting	<i>We are observing a marked trend towards early start to career, resultant exhaustion, stress and burnout by mid -40's. The mismatch between personal ambitions and organisation's goals is a constant source of dissonance. Freelancing after office hours is also injurious to mental/physi cal health . Beyond office hrs, they are independent individuals</i>
People skills	I. Shorter learning curve II. Peer to peer relationship	<i>No educational degree is an end in itself. Everyone needs to constantly upskill self (rather in shorter duration)</i>



SYNTHESIZED HIGHLIGHTS OF THE STUDY

Focusing on the Future and the Future Tech

Given the challenges that future of business are going to face, there is a need to focus on Business Continuity, Resilience, and Sustainability. Several of these challenges will have their solutions in the Future Technologies. Human-Computer-Human Interaction are going to shape the future of work as tech mediation through digital channels increases productivity

Strengthening Industry-Academia Partnership and Encouraging Glocal Integration of Talents

MNCs and all other companies need to have an entry level hiring strategy in collaboration with academic and skills institutions and offer students extensive internship and live project opportunities where they work with senior professionals. Develop Hire, Train and Deploy (HTD) Models need to be developed and popularized through industry-academia partnerships. There is a need to recognize the strength of glocal talent, nurture and promote them. Glocal talents democratize geographic focus, bring diversity to workplace, and are going to be the future of work.

Inculcating a Growth Mindset, Corporate Citizenship and Quality of Life

There is a need to inculcate Growth mindset into business and HR practices. Tie performance evaluation to learning, rather than output. Classify both success and failure as learning opportunity. Invest in employee's upskilling and reskilling efforts. Going forward there has to be equal focus on failures and recognition and efforts and initiatives versus only performance.

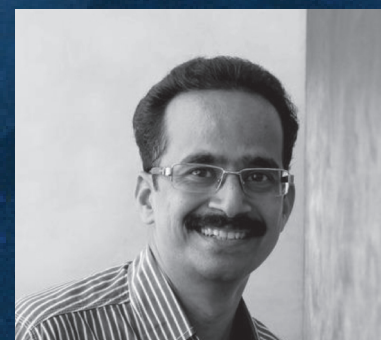


Preparing for Moonlighting

Moonlighting is a new post-Covid trend, it is here to stay and is the future of work. MNCs will need to develop and draft moonlighting policies. These policies can be designed to facilitate a second job. Not just to regulate and obstruct.

Focusing on Meta and Beyond Tech Skills

Meta Skills to be added along with hard and soft skills trainings in academic and industry settings as there is increased importance on people and interpersonal skills. Human beings will continue to play a central role despite disruptive innovations in technologies. Indian Knowledge System (IKS) can play an important role in self-awareness, self-management, social intelligence, problem solving and entrepreneurial mind-set. There is a need to embed SDGs thinking into our curriculum for environment friendly tech led frugal innovations.



Future of work is a very pertinent theme because of fast advancement in technology and the nature of business and economics systems in the world. The future of work needs to be understood not only in technological aspects but also needs to be understood at psychological and sociological levels. All aspects of organizational functioning need to gear up for these changes. The deliberations at BMU on this theme will be insightful and help the audience to better prepare themselves for the imminent changes.

Dr. Ashish Pandey Shailesh J Mehta School of Management IIT Mumbai

LIMITATIONS OF THE STUDY

Like any research study, this study has limitations too. Due to time and funding constraints, the sample size for this study was restricted to 251 for quantitative and 15 for qualitative. The number of respondents could have been more for a better generalizable study. Secondly, we feel that since Covid was a major disruptor concerning 'Future of Work', a longitudinal study before, during and post-pandemic could give a more comprehensive and apt understanding of the real picture.

Thirdly, the respondents considered for this study are HR personnel, however, the opinions of executives from other departments would be instrumental in tackling the answers to the issue of 'What lies ahead in Future of Work'. Other departments opinions could have been included if this was a broader study. Lastly, comparative studies, both industry-wise and geography-wise, would add immense value to this area. We encourage future research to make attempts in fulfilling these limitations to add to the existing nascent understanding of this domain.



The factors which are likely to affect the Future of Work include amongst others;

- Technological Advances
- Geo Political Changes
- ESG Awareness
- Unexpected happenings and events like Corona

With automation, robotics, machine learning and artificial intelligence many white-collar jobs shall disappear as it happened in the case of blue-collar jobs in the Electronic Age earlier

In the past, men worked with hands and machines, and the focus was on productivity and efficiency. Then we moved to the current Knowledge Era where the brain power, through ideas and knowledge, has become the dominant force. Next Era will be dominated by Social and Emotional Intelligence, and it will find more acceptance in the work place as compared to Technical and Academic Intelligence. From hands to head to now the attention is likely to shift to the heart.

There will be greater disparity between Knowledge and Skills based employment. A small set of people shall dominate and control the world and a comparatively larger number of people will remain on the skill or delivery side. Subsequently, a large number of people may have no job or employment. It shall be challenging to engage such people through new set of products and services, or upskilling, which may come as a great business opportunity

Dr Vinay Nangia

Distinguished Professor BML Munjal University, Professor Emeritus NSUT and Founding Professor Department of Management IIT Roorkee

ACRONYMS

AI	Artificial Intelligence
HR	Human Resources
IT	Information Technology
ITES	Information Technology Enabled Service
HCHI	Human Computer Human Interaction
WEF	World Economic Forum
VUCA	Volatile Uncertain Complex Ambiguous
BMU	BML Munjal University
CHRO	Chief Human Resource Officer
HRD	Human Resource Development
T&D	Training and Development
D&I	Diversity and Inclusion
CEO	Chief Executive Officer
ML	Machine Learning
IoT	Internet of Things
EV	Electric Vehicle
CHI	Computer Human Interface
BPO	Business Process Outsourcing
KPO	Knowledge Process Outsourcing
HTHRS	Human Tech Human Role Substitution
AV	Audio Visuals
MNC	Multinational Corporations
HTD	Hire Train Deploy
IKS	Indian Knowledge Systems
SDG	Sustainability Development Goal

Table : Abbreviation

ANNEXURES

Protocol 1: Survey Questionnaire used for the Quantitative Study

- Q1. Designation of the Respondent
- Q2. Type of Organization
- Q3. Organization size (no of employees)
- Q4. How do you view your organization's overall business growth in the next 1 to 3 years?
- Q5. What issues can disrupt your business strategy in this frame?
- Q6. Which business areas do you need to address potential skill gaps?
- Q7. What is your top priority as a HR leader?
- Q8. What motivations to your employees does your organization index on?
- Q9. At which level are you looking to hire the most talent?
- Q10. Do you reward the effort rather than performance at the entry level?
- Q11. The importance of soft skills cannot be over emphasized. Which statement do you agree with the most?
- Q12. Please rate the following soft skills on a scale of 1 to 5, with 1 being the least important and 5 being the most.
- Q13. The new paradigm of business, will also require a change in the way students are groomed in higher education to be "more" employable?
- Q14. Which mindset should the student most inculcate?
- Q15. What can higher education universities do to change that?
- Q16. What strategies are you looking to pursue to undo the skill gap?
- Q17. Where does your organization stand on the issue of moonlighting by the employers?
- Q18. What kinds of skills are becoming redundant in the last 2-5 years in your organization?
- Q19. Gender
- Q20. Age

Protocol 2: Survey Questionnaire used for the Qualitative Study

- Q1. According to you, how has the role of HR discipline changed in the last decade in your organization?
- Q2. What challenges do you see coming in because of 'advancement in technology as a disruptor' in your organization?
- Q3. What challenges do you see coming in because of 'innovation as a disruptor' in your organization?
- Q4. As HR management, what measures are you taking/planning to overcome these challenges?
What kind of budgets are allocated to these?
- Q5. What skill sets do you look at in new employees (both technical and non-technical) while hiring :
 - I) Freshers
 - II) Mid-level managers
 - III) Senior managers
- Q6. What steps does your organization take for ensuring work-life-balance for the employees?
- Q7. According to you , what will be the 3 most important non -technical skills in your industry in the next 5 years?

MATRIX ANALYSIS

S. No.	Respondents	Human-computer-human interaction			Geographical dispersion				Human-tech-human role substitution		Organization citizen		Quality of life			People skills		
		DC	T M	PM	GT	Ad	D M	Is	PP	An	CE	AE	PLS	GA	G i	SLC	P2P	
01.	R1			01	02		02		02	01	01		01	01	01		03	15
02.	R2	01	01		03	02	01		04	04	02	02		01	02		01	24
03.	R3	01	01	01	01	01	02	01	01				01	01	01	01		13
04.	R4	01	01	03	02	01		01	02	02	01	01			01	01	02	19
05.	R5	02	02		02	01	02		03	01	01		01	01	01		01	18
06.	R6	01	01	01	02	01		02		02		02	03		02	02		19
07.	R7		01	02	03		01	01	03	03	01		02			01		18
08.	R8	01			03	02	02	01	02	01		01		01			01	15
09.	R9	02		01	01		02		03	04		01	02		02	02		20
10.	R10	01	02		02	01	01	02	01	02			01	02		01	01	17
11.	R11	01	01	01	02	02	02		02		01		02		01		02	17
12.	R12	02	01		02		01	01		03		01				03		14
13.	R13	01	01	01	01	02			02				01			02	01	12
14.	R14	01	02		01		01	02	03	01	01		01	01	01		02	17
15.	R15	01	01	02		02	01		02		02	01		01	01	01	01	16
AGGREGATE		16	15	13	27	15	18	11	30	24	10	09	15	09	13	14	15	254
Summation of themes		44			71				54		19		37			29		254

Annexure 3

Legend:

- DC: Digital Channels
- TM: Tech Mediation
- PM: Predictive Measures
- GT: Glocal Talent
- Ad: Adaptability
- DM: Diversity Management
- Is: Intersectionality
- PP: People PrimacyAn: Anthropomorphism
- CE: Citizen-Employee
- AE: Activist-Employee
- PLS: Productive Life Span
- GA: Goal Alignment
- Gi: Gig worker
- SLC: Short Learning Curve
- P2P: Peer-to-Peer

Abstract of Team Lease report on Career Index and Desirable Skills
CAREER INDEX

Sl.No	Professions
1	Affiliated Market Specialist
2	Molecular Biologist
3	UX Designers
4	Machine Learning Engineers
5	Data Scientist
6	Product Manager
7	Contract Administrator
8	Business Planner
9	Account Manager
10	Genetic Engineering

Table : Top 10 professions

As per the Team Lease EORs intent to hire in IT roles have seen very high in the past year due to the Covid Pandemic which has led to a massive surge in the demand for IT roles in India; not only to compensate for the domestic demand but also to cater to the digitalization across the country and the globe. Agriculture is the backbone of employment in our country and it has witnessed a positive growth in intent to hire with multiple factors helping like the agritech startups and the ethanol blending area which are giving the agriculture sector a boost. With Manufacturing, Engineering & Infrastructure areas rolling out EV automobile production and 5G, it has been driving employment opportunities in areas like green energy, solar cell production, semiconductor chip manufacturing, IoT etc. Organizations in the logistic space are using AI, Warehouse Automation, Data Analytics and IOT to increase efficiency. The growth in E-commerce is also a major boon for the sector. It has an impact on the FMCG sector as people are consuming more than ever, which has led to a significant amount of employment increase. With the world going digital everyone wants their customers to have the best experience on their apps and websites to make them spend more time there, and this has led to a rise in this role. The skills required for this role are Analytical Thinking, User Experience (UX), and User Interface (UI). With the increased use of AI, this has become an important job role in many organizations. Some skills required for this role are Deep Learning, Machine Learning, and Natural Language Processing (NLP). A lot of organizations have huge amounts of data which they have started utilizing to maximize their sales/minimize their costs by analyzing the data available for them, because of this data scientists have seen a meteoric rise in their demand. Some skills for this role are Machine Learning, Data Science, Python (Programming Language)

DESIRABLE SKILLS

Sl. No.	Soft Skills	Technical Skills
1	Selfconfidence	Cyber security and ethical ha
2	Leadership	Blockchain
3	Organized	Biotechnology
4	Creativity	Business analytics
5	Adaptability	Cloud computing
6	Teamwork	Product management
7	Decision Making	Machine Learning
8	Emotional Intelligen	Digital Marketing & SEO
9	Communication Sk	Financial Management
10	Service Orientation	Robotics

Table : Top 10 soft skills and technical skills

There are some skills that people need to develop and nurture to be efficient, productive and successful in a flexible/remote work environment, especially with the shifts in work styles that new technology is bringing about. Hiring managers face the unprecedented challenge of identifying the most important skills that candidates must have to fit correctly with a remote or hybrid organization – strong interpersonal skills, flexibility and adaptability, independence and self-motivation. The purpose of promoting university-industry collaboration is to increase the relevance and contribution of universities to a country's socio-economic development. In India, there is a huge demand for supplemental training for engineering graduates, indicating a misalignment between academic education and industry needs. In the future, there will be significant changes in the way we work, emergent technology, evolving new paradigms of nature of work, and a tremendous increase in the multigenerational workforce.

RESEARCH TEAM



Dr. Deepak Pandit

Chair Professor, Innovation and Entrepreneurship,
School of Management, Institute of Innovation and Entrepreneurship(I2E) BML Munjal
University

Dr. Deepak Pandit has a unique blend of in-depth academic, multinational corporate, and entrepreneurial experience of more than 27 years. He is currently Chair Professor of Innovation and Entrepreneurship at BML Munjal University. His research focuses on the areas of strategy, economics, entrepreneurship, and innovation. His research has been published in top-tier international and national journals. He has also published teaching cases in global top-ranked case clearing houses.

He was a recipient of a prestigious academic award from the government of India through the All-India Council for Technical Education (AICTE) in 2017. As a testament to his research and teaching skills, he was selected to attend the 8th edition of the Global Faculty Development Program at Wharton Business School in August 2019. He was an invited expert on a Project titled, 'Exploratory study on linkages between Technology and Trade', awarded by the Department of Science and Technology, Government of India, to the Indian Institute of Foreign Trade, Delhi, 2018. He is a Ph.D. from the Management Development Institute (MDI), Gurugram, and an MBA from the Birla Institute of Management Technology (BIMTECH). He specializes in market development for high technology products and services in the wireless and satellite communications domain. He has worked with organizations like HCL Corporation, Motorola, Intel, and global start-ups like Gilat Satellite Networks and Satellite Technology Management (STM).



Dr. Ritu Chhikara

Assoc Prof & Director, Centre for Sustainability Research & Advocacy, School of
Management, BML Munjal University

Dr. Ritu Chhikara, a Ph.D., and MBA from FMS of Delhi University, is currently an Associate Professor of Marketing, Consumer Behaviour and Sustainability at BML Munjal University. She has more than 12 years of combined experience in industry and academia. She has worked for Microsoft after her MBA from FMS and has been an award-winning teacher after she completed her Ph.D. and joined academia to teach marketing and sustainability.

Ritu is trained in Innovative teaching pedagogies such as Case Method and technology- driven teaching from IIM Indore, Imperial College London, IIM Ahmedabad & Harvard Business School, and Singapore Management University (SMU). She continues to be a published author of research articles and cases in ABDC, Scopus and UGC Care listed peer reviewed journals. She has been a recipient of 'The Excellence in Teaching Award', 2016-17 and 'Best All-Rounder Award', 2020-21 at BML Munjal university. Dr Ritu has established the Centre for Marketing and Sustainability Research at BML Munjal University. Her research in Sustainability including around e-mobility in India, sustainable education and collaborative consumption is well appreciated. Apart from her contribution in areas of teaching and research, she has worked on consulting projects of Niti Aayog, ICCSR, and Lakshya Food Ltd, and continues to engage with the industry and policy makers through consulting work. She heads the Centre for Sustainability Research & Advocacy at BMU.



Mr. Kamala Kanta Dash

Ph.D. Candidate, School of Management,
BML Munjal University

Mr. Kamala Kanta Dash is a part-time Ph.D. Candidate at the School of Management (SoM), BML Munjal University. He has more than 22 Years of experience in industry and academia. Mr. Dash is an Assistant Prof of Public Policy and Management at Sri Sri University from where he is now on industry deputation to Ernst & Young (E&Y) where he is a Senior Project Consultant working for the Government of Rajasthan to strengthen higher education and advanced level training ecosystem in the emerging areas of technologies.

Mr. Dash has attended Ravenshaw (Cuttack, Odisha), Jawaharlal Nehru University (JNU), New Delhi and Monash University (Australia) for his higher education and has trained academics & corporate leaders in public policy, media, sustainability, personal branding, and spirituality.

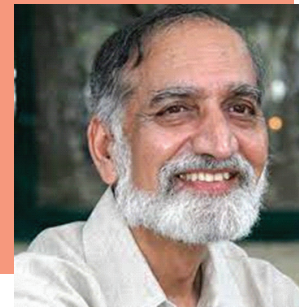


Ms. Shreenidhi Raguraman

Research Fellow, Institute of Innovation and Entrepreneurship
BML Munjal University

Ms. Shreenidhi Raguraman is a Junior Research Fellow at the Institute of Innovation and Entrepreneurship at BML Munjal University. Experiencing education in a few different countries, Shree is passionate about educational reform especially in India. She is an entrepreneur who has her own consultancy firm - Pivot Principle Advisory. She is also a part of an NGO which protects and saves cows known as the Chengalpattu Gosamrakshana Trust. She has worked with different educational organisations like Aim High, California, US as a curriculum developer and Humanities co-teacher, Sree Gokulam Public School, Tamil Nadu, India as Career and College Counsellor as well as a Communicative English teacher. She is one of the leaders of IC3 Institution.

Shree did her UG at SRM University, Chennai, Tamil Nadu in Genetic Engineering. She was working on combination drug Therapy in breast cancer cell lines at Tzu Chi University, Hualian City, Taiwan before changing fields and turning her full attention on education and entrepreneurship. She has a dual master's degree from Hult International Business School, San Francisco, USA on International Business and Disruptive Innovation.



Will You Get "Roboted"? *

Jobs, Livelihoods and Technology

Kiran Karnik**



Jobless growth has been a salient feature of the India story for a decade or more. Employment growth has diverged from economic growth, posing a serious problem. Labour participation rate is low and, worse, highly gender skewed. Youth employment (age-group 15-24) is just about 10%; only half of what it was 5 years ago. The much-expected demographic dividend threatens to reverse into demographic disaster, with potentially destabilising and unpredictable social consequences.

Lack of job opportunities is attributed to a regulatory framework that ends up advantaging capital investment over labour, resulting in spurring automation. Many, therefore, blame technology for an increasingly anti-employment approach by industry. Yet, historically, new technologies have always resulted in ever greater overall employment. This does, though, entail shifts in sectoral employment and in skill requirements. Short-term disruptions, adjustments and unemployment seem inevitable, especially for those with minimal education and skills. Upgrading and updating skills is essential.

Emerging technologies, however, also throw-up altogether new possibilities, even for those who are economically or skills deprived. The near-universalisation of mobile phones has helped many of the self-employed and MSMEs to grow their business, creating additional job openings. In this, a now-commonplace app like WhatsApp has been a big boon to local vendors and service providers. Technology has also encouraged new entrepreneurs and enabled part-time and from-home work opportunities. Positively, women are likely to be the bigger beneficiaries of this. These are yet early days, and it seems we will see much action on all these fronts.

Looking ahead, there is world-wide fear that AI, automation, and other technologies will render much of human labour (including well-skilled professionals) redundant. Like many in the US feared their IT job being outsourced (being "Bangalored"), people now fear being "Roboted". Will prosperity and idleness go hand-in-hand? What will a world of mainly idle people look like? What will be the social, emotional, and psychological ramifications? A world of people devoted to poetry, writing, painting and dancing, with endless time for friends and travel, may seem a desirable one; but will it also mean more suicides, drugs and crimes?

There could be various alternative scenarios of the future, as related to technology and jobs. One could well argue that the future is not about jobs, but about livelihoods; that the current concerns about "quality" jobs which assure social security benefits is ill-founded. Instead, we need to look at livelihoods, with part-time, fixed-period and gig work being predominant – supported, of course, by a universal system of retirement, pension and social security guarantees. Also, there is no cause to look at AI or robots as threats: the future will not be a man or machine dichotomy, but a man plus machine model.



*Gist of talk at BML Munjal University's summit on 'Future of Works and Human Challenges - Technology and Beyond', November 19, 2022.

** Kiran Karnik is a public policy analyst, writer, and columnist whose last job was as President NASSCOM (2001-08). His latest book is "Decisive Decade India 2030: Gazelle or Hippo" (Rupa, 2021).