The Future of Work in India

Scenario Workshop | 24-25 January 2018, Goa

TANDEM RESEARCH

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1. **Introduction**

Anxiety about the impact of technology on the world of work is not new. Since the beginning of the Industrial Revolution in the 18th century, the question of how technology shapes work and labor, and in turn how society should shape technology has fuelled intense public debate. In England, textile workers known as Luddites destroyed and smashed automated looms, concerned that they would lose their jobs. While new jobs in mass manufacturing and new industries - coal, iron and steel - were subsequently created - the Luddites did lose their jobs.

In the middle of the 20th century, the Third Industrial Revolution, linked to the invention of computing, telecommunication and electronics vastly improved our ability to process and communicate information. Building on these advancements, we are now at the cusp of the so-called Fourth Industrial Revolution (4IR), characterized by the convergence of a cluster of digitally driven technologies – machine learning, robotics and the Internet of Things, among others. These technologies are expected to profoundly transform the world of work. The claim is that, this time around, the speed, and spread of technological change will be dramatic and unprecedented. Technologization of society will be ubiquitous, reconfiguring not just work but underlying social, economic and political systems.

The notion of 'creative destruction' is often enrolled in the dominant discourse on the impact on technological change on jobs. The argument is that loss of jobs to automation in the short run is likely to be counterbalanced by the re-generation of new job opportunities and long term productivity gains. Suggesting a 'churn', economists argue that emerging technologies will erode certain jobs but create new ones. Such churning in the world of work will nevertheless create winners and losers. Sociologists of technology argue that technologies reflect dominant social interests and inequities. Equally, they can recast or transform social relations.

However, the uptake, diffusion, and impact of technological change will also be shaped by, and mediated through, local social, cultural, and economic systems. In fact, a singular focus on technological impact obscures the issue of technology use i.e. the various ways in which people make use of technology will shape the impact of technological change, where these usage patterns reflect prevailing social structures. Global narratives thus need to be contextualised to local contexts to generate meaningful policy insights. Technology is also a social product, patterned by the conditions of its creation and use. Technological trajectories can be and need to be steered through policy towards deliberated societal goals.

2. Future of Work in India

Tandem Research's *Future of Work* program seeks to understand how emerging technologies are transforming the future of work in India, in order to generate policy insights relevant to India's unique socio-economic structures. The question of job displacement is critical, but must be accompanied by equally urgent considerations of employment conditions, labor rights, social protection, gender relations, and the distribution of technology gains. Understanding these broader societal transformations is necessary if we are to leverage technological change for inclusive, equitable, and sustainable outcomes.

In India, the conversations around technology and the future of work tend to focus on the issue of job displacement. The World Bank estimates that automation will impact 69 percent of jobs in India. Other studies note that technological adoption will be slow given the relative cost of labor and broader infrastructural constraints. The declining cost and improved efficiency of automation and robots compared to labor nonetheless poses a particular challenge for emerging economies like India who are risk of what economists call 'premature de-industrialization.'

New ways of working and economic participation will also recast or reproduce social relationships of gender and class, among others, and create the need to reconsider social protection frameworks. A rise in female participation in the labor force due to available e-commerce opportunities, for example, has the potential

to challenge deeply embedded gender roles. Similarly, the expansion of the platform economy is creating new forms of entrepreneurial employment, but also displacing older systems of social protection.

3. Scenario Workshop : Objectives and Approach

Tandem Research has convened a Technology Foresight Group (TFG) to collectively evaluate the political, social, and value-based contestations underlying the framing of problems and solutions around technology and the future of work in India. The first meeting of the TFG was held in August 2017.

In partnership with the Emerging Market Sustainability Dialogues (EMSD), Tandem Research has convened the second meeting of the TFG on 24 & 25 January 2018 for a Scenario Workshop pertaining to the Future of Work in India. The meeting will inform an international project led by EMSD, Tandem Research, and partners in South Africa (HSRC) and Argentina (CIPPEC), that aims to develop and compare scenarios for the future of work in India, South Africa and Argentina, and derive relevant policy options. Combined insights will contribute to the T20's ongoing work on this theme, in the context of this year's G20 focus on the Future of Work and Education in the Digital Age.

Looking to 2030, the workshop will identify key factors and drivers relevant to 4IR in India and accordingly build plausible

and preferable scenarios for the future of work in India. The aim is to use these scenarios to identify and develop relevant policy pathways for India.

Scenarios are plausible stories about the future that provide a framework for comprehending future uncertainty and plausible policy trajectories. The method helps trace the trajectories of present day decision making and specified trigger factors to map future scenarios and outcomes. Scenario building helps test and rethinking underlying assumptions, and propose new ideas and innovations, to consider imaginative and alternative policy pathways. Scenarios are a way to build anticipatory knowledge to inform present day decision-making and illuminate the political and social choices that lie ahead.

The Scenario Workshop will be structured around four sessions:

Scenario Framing : Data on labor market trends and employment conditions, particularly within the unorganised sector, is patchy. There is a further paucity of data on how technological trajectories will play out in India, at least partly because many changes related to 4IR are emergent and have not unfolded as yet. The technologies that broadly make up 4IR include: AI and machine learning; IoT and M2M communications; advanced robotics; 3-D printing and data and cloud computing. Expected changes over the next 5 years are somewhat predictable but long term analysis is challenging – limited data on current labor trends and conditions, combined with the complex interplay of factors involved, restricts possibilities for far-future analyses. Foresight

and anticipatory knowledge will need to be developed by weaving together available macro-economic data and existing evidence of digital adoption and impact trends, with expert judgments.

Scenario Construction : Megatrends - societal, technological, economic, environmental, political, legal and ethical – will be driving forces that provide the context for future worlds. Trends can be predictable or uncertain and have high or low impact on the future. They may also be local (India specific) or global. Predictable trends are those that are relatively stable and less likely to be affected by cyclical changes and fluctuations. When extended into the future, they describe a 'business-as-usual' continuation of events. Another set of trends are those that are likely to disrupt 'business as usual' – the impacts of these trends can be more complex and almost impossible to calculate with accuracy. Sifting through these trends will help determine the shape of future trajectories.

Scenario Implications : A disconnect between GDP and employment growth and a shift straight from agriculture to services-led growth, leapfrogging manufacturing, have been the two distinctive features of India's structural transformation. This is reflected in the overwhelming contribution of the services sector to GDP growth (63%) over the last decade but a significantly smaller share in employment (about 25%) during the same period. Growth has been capital rather than labor intensive. Over 70 percent of the workforce is engaged in the unorganised sector, and more than 90 percent is in informal employment. Labor force participation rate among women is amongst the

lowest in the world and has been declining since 2004-05 - participation rates are lower in urban areas among educated women, indicating a lack of meaningful work opportunities. The implications of constructed scenarios on these persistent features of India's macro-economic structure need to be systematically interrogated.

Scenario branch points: Responding to the impact of emerging technologies on the world of work will require multiple overlapping strategies. Some of these include: labor protection strategies for improving employment conditions; redistributive strategies that address the distribution of productivity gains; coping strategies such as those for re-skilling; and technology strategies that manage, regulate and steer technological development and development. Branch points are policy interventions could help shape trajectories and scenarios towards desirable futures and away from undesirable ones.

AGENDA

24 January 2018

09:00 – 09:30   Registration + Coffee

09:30 – 10:00   Introductions

10:00 – 11:30   **Session 1: Scenario Framing**

Why use scenarios? What are the key objectives and questions for the scenario analysis? What do you know about the trajectories of technology? What does history tell us about the likely timelines for the trajectories of change?

11:30 – 12:00   Coffee Break

12:00 – 13:30   **Session 2: Scenario Construction**

Step 1: Horizon Scanning: Identify Driving Forces

What are the Societal, Technological, Economic, Environmental, Political, Legal, and Ethical drivers that will shape the future of work?

13:30 – 14:30   Lunch

14:30 – 16:00	**Session 2: Scenario Construction**
	Step 2: Unknown unknowns: Identify critical uncertainties
	What are the drivers that can't be easily characterized or understood but are likely to have high level of impact on the future?
16:00 – 16:30	Coffee Break
16:30 – 18:00	**Session 2: Scenario Construction**
	Step 3: Visions 2030: Develop Plausible Scenarios
	What are the predictable impacts and how are the uncertain but critical drivers likely to interact?
18:00 onwards	Dinner and Drinks

25th January 2018

09:00 – 09:30   Coffee

09:30 – 11:00   **Session 3: Scenario Implications**

                         Step 1: Pathways and Storylines

                         What are the plausible scenarios for
                         the world of work in 2030? How did we
                         get here?

11:00 - 11:30   Coffee

11:30 – 13:30   **Session 3: Scenario Implications**

                         *Step 2: Displacement, employment
                         conditions and labor segmentation*

                         What are the implications for labor
                         segmentation (especially women);
                         employment conditions (social protection
                         and labor rights) and job displacement?

13:30 - 14:30   Lunch

14:30 – 16:00   **Session 4: Scenario Branch Points**

                         What are the strategies – to cope,
                         redistribute productivity gains, protect
                         labor and shape technologies – to
                         provide Decent Work to Indians in
                         2030?

PARTICIPANTS: TFG #2

Ajit K. Ghose holds a Ph. D. in Economics from the University of Cambridge (UK). He worked as a Research Fellow at Queen Elizabeth House (Oxford, UK) before joining the International Labour Organisation (ILO) as a research economist at its Headquarters in Geneva (Switzerland) in 1979. He retired from the post of a Senior Economist at the ILO (Geneva) in 2008. During 2009-10, he was Visiting Senior Fellow at Wolfson College, Cambridge (UK) and at the Centre for Development Studies, University of Cambridge (UK). Currently he is ICSSR National Fellow and Honorary Professor, Institute for Human Development, New Delhi (India). He has authored several books and many articles in professional journals, in areas such as agrarian transformation, globalisation, inequality, economic growth and development, employment and labour markets, and poverty and famines.

Ananth Padmanabhan is a fellow at Carnegie India, based in New Delhi. His primary research focus is technology, regulation, and public policy, and the intersection of these three fields within the Indian context.He has authored India's leading treatise on intellectual property rights, entitled *Intellectual*

Property Rights: Infringement and Remedies (LexisNexis, 2012), and a number of book chapters including in the latest *Oxford Handbook of the Indian Constitution* (Oxford University Press, 2016). He is a regular contributor to leading Indian newspapers including the *Indian Express* and *Business Line*.

Aalok Khandekar is Assistant Professor at the Department of Liberal Arts, Indian Institute of Technology Hyderabad, with primary expertise in Cultural Anthropology, Science and Technology Studies, and South Asian Studies. His current work examines how differently positioned scientists and engineers are developing interdisciplinary and collaborative capacity in response to emerging global challenges, such as those of environmental sustainability and development. He currently coordinates a multi-city research project (with on-going research in Bengaluru, Chennai, Delhi, Hyderabad, and Pune), *The Asthma Files*, that aims to understand different education-to-science-to-policy pathways for measuring, monitoring, and governing air quality in India.

Antje Uhlig is the Director of the Economic Policy Forum (EPF) and has been working for GIZ since 2010. Prior to her current role, she was a GIZ seconded expert and strategic consultant within the global

partnership unit of the Observer Research Foundation (ORF), with a focus on energy efficiency, sustainable and inclusive development, and corporate social responsibility in India. Antje started her professional life as project manager at a human sciences museum in Dresden before changing career to head the International Relations Program of the private foundation ZEIT-Stiftung in Hamburg for four years. She holds an MA in International Politics and Economics from the Paul H. Nitze School of Advanced International Studies (SAIS) in Washington D.C. as well as an MA in American Studies and Economics from Martin-Luther University Halle-Wittenberg. She is also an alumna of the London School of Economics' Executive Summer School.

Anja Kovacs directs the Internet Democracy Project in Delhi, India, which works for an Internet that supports free speech, democracy and social justice in India and beyond. Anja's research and advocacy focuses especially on questions regarding freedom of expression, cybersecurity and the architecture of Internet governance. She has been a member of the of the Investment Committee of the Digital Defenders Partnership and of the Steering Committee of Best Bits, a global network of civil society members. She has also worked as an international consultant on Internet issues, including for the Independent Commission on Multilateralism, the United Nations

Development Programme Asia Pacific and the UN Special Rapporteur on Freedom of Expression, Mr. Frank La Rue, as well as having been a Fellow at the Centre for Internet and Society in Bangalore, India.

Aakash Sethi is the Executive Director of the Quality Education & Skills Training (QUEST) Alliance, a multi-stakeholder partnership that works to promote innovative and effective uses of ICTs in education. It brings together public, private and NGO partners to create, pilot and institutionalize technology tools for improving the quality of education at all levels in both formal and non formal settings to better reach disadvantaged youth populations.

Astha Kapoor is an independent public policy consultant. She specializes in delivery of government welfare services. Recently, she designed a grant strategy to improve government services in light of increased use of technology for the Azim Premji Philanthropic Initiatives. In her earlier role at MicroSave, Astha worked as an advisor to the government at different levels on design of programs particularly focused on access to food. Notably, Astha designed and implemented a pilot on using cash coupons for food in Karnataka, a first for India. She has also worked with Dalberg Global Development Advisors, working with clients such as JICA and USAID. Astha has also worked on the 12th Five Year

Plan at the Planning Commission, Government of India and on India's only universal basic income pilot with Self Employed Women's Association. Astha has a Masters degree in Social Development from the Institute of Social Studies.

Abhijeet Mehta has over the past 10 years worked on vocational training and life skills projects for youth from disadvantaged backgrounds. Abhijeet brings rich experience in cultivating and driving multi-dimensional partnerships with global corporations and non-profits. At QUEST, Abhijeet works at the intersection of technology, content and design as well as on managing and growing relationships with donors and partners.

Bhairav Acharya is Public Policy Manager for India and South Asia at Facebook. Previously, he was a program fellow at New America's Open Technology Institute where he worked on transatlantic approaches to communications encryption. In 2013-14, Acharya led a national civil society effort in India to draft a consensus-based privacy legislation. Acharya has also worked at the Centre for Internet and Society and the Supreme Court of India where he participated in a major constitutional challenge regarding wiretaps and press freedoms.

Bhavya Sharma is a communications specialist at UrbanClap with 9 years of experience in digital marketing (including social media), content production (print and digital), internal communications, performance monitoring, and vendor management. Urbanclap is an online marketplace that connects customers to service professionals. It is India's largest home services marketplace.

Deirdre May Culley is a policy analyst and foresight and scenarios expert from the OECD Development Centre. A graduate from the University of Cambridge, Deirdre began her career at the RAND Corporation where she was exposed to different research methodologies involving combined quantitative and qualitative methods. An Irish national, Deirdre then worked for the Ministry of Foreign Affairs of Ireland in policy before joining the OECD in the newly created strategic foresight unit in the Office of the Secretary General. Deirdre now works as the OECD Development Centre foresight expert and has organised multiple large-scale scenarios exercises across Asia, Africa and Latin America, and at the corporate level.

Dhiraj Nayyar is officer on special duty and head of economics, finance and commerce at the National Institute for Transforming India, or NITI Aayog, the Indian government's think tank. Dhiraj trained as an

economist at St. Stephen's College, Delhi, Merton College, Oxford and Trinity College, Cambridge. After a stint teaching development economics at the University of Cambridge, Dhiraj switched to journalism. He was Opinion Editor of The Financial Express, Deputy Editor of India Today, Editor-at-large at Firstpost.com, India Columnist for Bloomberg View and Managing Editor of The Quint. He was also CEO of the Think India Foundation, a media-active think tank. In 2013, Dhiraj was awarded a Bastiat Prize in journalism by the California-based Reason Foundation. He is the editor of two books, Surviving the Storm: India and the Global Financial Crisis and Dogs and Us: Collected Short Stories.

Deepanshu Mohan finished his BA Economics from Fergusson College, Pune in 2011 and completed his Masters in Economic History from London School of Economics and Political Science. With economics as his major, he specialized in the area of economic history. He joined Jindal School of International Affairs in year 2013 as an Assistant Professor of Economics; he is also the Director of the Centre for New Economics Studies. Deepanshu is a Visiting Professor to the Department of Economics at Carleton University and a Research Fellow, South Asia Democratic Forum. His research interests include Development Economics, Behavioral Economics,

International Political Economy, History of Financial Crises and Indian Economic History.

Kachina Chawla is the co founder of Gharkamai.com, India's first women centered digital platform that enabled women to work from home on a project basis. Gharkamai provided an online space where thousands of employers could engage professional women who were looking for an alternative way to work. Today, Kachina is a founding partner at Lighthouse Health Solutions, a consulting firm which continues to challenge working norms by using gender transformative approaches to create quality deliverables for clients like the Bill and Melinda Gates Foundation, Abt Associates, Evalueserve, Primark, Public Health Institute, WHO and many more.

Malini Goyal is a senior editor with The Economic Times. Malini Goyal has been a business journalist for over 23 years having worked with India's leading publications including India Today and the Forbes Magazine. Part of the leadership team, she has helped conceptualize and launch two successful products – Forbes India and The Economic
Times Sunday Magazine. Malini was part of the ILO workshop in Bangkok on Future of Work. She recently had a speaking engagement at the Aspen conference in Turin, Italy on 'India and digital disruption'.

Manju Dhasmana is lead of Microsoft Philanthropy in India.

Prabhu Mohapatra is an associate professor of history at Delhi University since 2002. He teaches the economic history of India and the global history of servitude and labour at the Masters in History programme, Delhi University. Prabhu's research interests lie in the history of global labour, informal labour, ecological and agrarian history and long distance migration history. Prabhu has been visiting Professor at Ecole Normale Superiore, Cachan, Paris (2008), University of Goettingen (2010) and was Research Fellow at International Research Centre on Work and Life Cycles (RE: WORK) at Humboldt university(2011).

Ramiro Albrieu is an economist and principal researcher at Centro de Estudios de Estado y Sociedad (CEDES), Argentina. He is also Macroeconomics professor at the University of Buenos Aires; Associate researcher at Commitment to Equity, Tulane University; and, Director of the "Natural Resources and Development" program, Red Sudamericana de Economía Aplicada (Red Sur).

Ravi Viswanathan - Accenture India

Sabina Dewan is President and Executive Director of the JustJobs Network, which she co-founded with John Podesta in 2013. Sabina has built in the JustJobs Network an innovative, international think tank focussed on finding strategies to create more and better employment world-wide.

Varun Sahni is Vice-Chancellor, Goa University. He is also Professor in International Politics at Jawaharlal Nehru University, New Delhi (currently on deputation leave). At JNU, he has served three times as Chairperson, Centre for International Politics, Organization and Disarmament (CIPOD) and was also Director, International Collaboration Office.

Vir Kashyap co-founded babajobs.com. Previously, he was a partner at Indavest, a venture capital and incubation firm focusing on early–stage consumer investments in India. Prior to that, Vir was part of the Business Development team at Vega Asset Management based in Madrid. After getting a Bachelor of Arts in Economics and Religion from Bowdoin College (Maine), Vir started his career at Morgan Stanley in New York where he assisted the firm's Alternative Asset Management clients raise capital from global investors. His experience includes Epinions.com (now part of eBay) where he helped launch the enterprise-computing vertical. Along the way, Vir actively advises other passionate startup

entrepreneurs and is co-founder of the Bangalore Social Enterprise Group. He enjoys his music and has been known to spin a few tracks for the crowd at times.

Urvashi Aneja is Co-Founder and Director of Tandem Research. She works on the governance and sociology of emerging technology; southern partnerships for humanitarian and development assistance; and the power and politics of global civil society. She has a PhD in International Relations from the University of Oxford. Urvashi is also Associate Professor at the OP Jindal Global University and Research Fellow at the Observer Research Foundation. She regularly advises the United Nations and other international organisations.

Vikrom Mathur is Co-Founder and Director of Tandem Research. Vikrom is an anthropologist of science and technology. His diverse research interests include the governance of emerging technologies, social and cultural dimensions of technological transitions, political and social contingencies on the production of scientific knowledge about Nature, cultural perceptions of environmental risk, dynamics between science and policy (for example in relation to climate change) and Cultural Theory. He has a PhD from the Institute of Science, Society, and Innovation at the

University of Oxford. Vikrom is a Senior Fellow of the Observer Research Foundation (ORF), Associate Fellow of the Stockholm Environment Institute (SEI) and Senior Associate of Global Climate Adaptation Partnership (GCAP)

Hugo Pilate is a design researcher with a background in industrial design. After 3 years freelancing as a design researcher in Los Angeles, he decided to focus his practice on innovation in emerging markets and moved to Delhi. He is interested in the creation of better products and services through applied research and co-creation. Above all, he's an avid supporter (and fan) of makerspaces, open source designs and similar grassroots efforts that aim to make design useful for people around the world. He holds a Bachelor of Science in Industrial Design from Art Center College of Design.

Ira Anjali Anwar is a research associate with Tandem Research. Having completed her masters in Psycho-Social Clinical studies, she worked with Aruna Roy, in collaboration with McGill University and the Central European University on the questions of Participatory Democracy and the role of Public Policy. She is interested in the politics of the Future of Work in the context of emerging

technologies and labour markets in developing countries.

Abheeru Chauhan is a research associate at Tandem Research, specialising in the future of work and education in India. He was formerly a journalist at CNN-IBN , covering national, international and business stories in short and long format. Abheeru did a BA in cinema, political science and modernity from Macquarie university in Sydney.

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hello@tandemresearch.org

EMSD is a network of change agents and decision makers from think tanks, multinational corporations, and the financial sector.

Our members jointly develop and implement solutions for sustainable economic development in emerging economies through consultation, dialogue, and research.

emsdialogues.org
secretariat@emsdialogues.org