



# Workshop: IT/IT-es Sector and the Future of Work in India

June 29, 2018

10:30 am - 5:00 pm

Omidyar Network, Bengaluru

## CONCEPT NOTE

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### OVERVIEW

The Centre for Internet and Society has recently undertaken research into the impact of Industry 4.0 on work in India. Industry 4.0, for the purposes of the research, is conceptualised as the technical integration of cyber physical systems (CPS) into production and logistics and the use of the ‘internet of things’ (connection between everyday objects) and services in (industrial) processes. By undertaking this research, CIS seeks to complement and contribute to the discourse and debates in India around the impact of Industry 4.0. In furtherance of the same, this workshop seeks to explore several key themes underpinning the impact of Industry 4.0 specifically in the IT/IT-es sector and broadly on the nature of work itself.

Scholarship that has emerged globally has sought to address the challenges of technological forecasting as it relates to work in varied forms. For instance, the Frey-Osborne methods examine characteristic tasks of each occupation and suggest that almost half of all jobs in the United States and other advanced countries are at risk of being substituted by computers or algorithms within the next 10 to 20 years.<sup>1</sup> On the other hand, scholars such as Autor and Handel as well as research produced by OECD on this subject argue that occupations as a whole are unlikely to be automated as there is great variability in the tasks within each occupation.<sup>2</sup> Existing literature on the impact on jobs in the IT sector in India too have arrived at mixed forecasting conclusions. Reports have raised concerns about job loss in the

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<sup>1</sup> Carl Benedikt Frey and Michael A. Osborne. The future of employment: How susceptible are jobs to computerisation?, 2013.

<sup>2</sup> See David H. Autor & Michael J. Handel, 2013. “Putting Tasks to the Test: Human Capital, Job Tasks, and Wages,” *Journal of Labor Economics*, University of Chicago Press, Vol. 31(S1), pages S59 - S96. See also *Future of Work and Skills*, The Organisation for Economic Co-operation and Development, February 2017

sector as a result of automation<sup>3</sup> whilst it has also been reported that employment from IT sector reached 3.86 million in 2016-17 and an addition of around 105,000 was witnessed in FY18 itself.<sup>4</sup>

In this context, it is crucial to start by developing an understanding of which technologies are at the forefront of bringing in Industry 4.0. Such an understanding will further help understand which jobs, and more specifically, job functions are at the greatest risk of being replaced by automative technologies. To further contextualise the impact, it is imperative to develop a comprehensive understanding of how job functions are organised within the sector itself. This becomes especially relevant with the emphasis Industry 4.0 places on the horizontal and vertical integration of the various technologies constituting Industry 4.0.<sup>5</sup>

It is anticipated that to stay ahead of the curve of ‘technological unemployment’ there will be significant skilling and re-skilling challenges to enable new talent addition around emerging job roles.<sup>6</sup> The skilling challenge gains enhanced importance in the broader context of nurturing an inclusive digital economy.<sup>7</sup> This is particularly relevant in the context of female labour force participation, since it has been predicted that job creation will be concentrated in sectors where females are underrepresented and difficult to retain, while sectors with higher female participation, such as secretarial work, will undergo job loss.<sup>8</sup>

However, it is not clear how these trends will play out in the future, particularly because other structural changes are taking place simultaneously (such as globalisation and protectionism, demographic change, policymaking, technological adoption etc.).

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<sup>3</sup> AI, automation will cost 7 lakh IT jobs by 2022, says report, Business Today. Retrieved March 23, 2018, from <https://www.businesstoday.in/sectors/it/ai-and-automation-to-cost-7-lakh-it-jobs-by-2022-says-report/story/259880.html>

<sup>4</sup> Advantage India, India Brand Equity Foundation. Retrieved March 25, 2018, from <https://www.ibef.org/download/IT-ITeS-Report-Apr-2018.pdf>

<sup>5</sup> Embracing Industry 4.0 - and Rediscovering Growth, Boston Consulting Group. Retrieved March 28, 2018, from <https://www.bcg.com/capabilities/operations/embracing-industry-4.0-rediscovering-growth.aspx>

<sup>6</sup> IT-BPM Industry in India: Sustaining Growth and Investing for the Future, NASSCOM. Retrieved March 23, 2018, from [http://www.nasscom.in/sites/default/files/NASSCOM\\_Annual\\_Guidance\\_Final\\_22062017.pdf](http://www.nasscom.in/sites/default/files/NASSCOM_Annual_Guidance_Final_22062017.pdf)

<sup>7</sup> Bridging the digital divide: Skills for the new age, G20 Insights. Retrieved March 23, 2018, from [http://www.g20-insights.org/policy\\_briefs/bridging-digital-divide-skills-new-age/](http://www.g20-insights.org/policy_briefs/bridging-digital-divide-skills-new-age/)

<sup>8</sup> The Future of Jobs - Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution, World Economic Forum, January 2016

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## AGENDA AND DISCUSSION POINTS

10:30 - 11:00 Tea

11:00 - 11:15 Welcome and setting the scene

11:15 - 12:15 **Session 1: Adoption and impact of Industry 4.0 technologies vis-a-vis the organisation of work**

- What are the key technologies being adopted? What is driving the uptake of these technologies?
- Where in the production and supply chains are the implementations targeted at?
- What are the 'tasks' that make up jobs in the sector? How are these tasks organised within the sector?
- What has been the impact of industry 4.0 on work? Can the impact be qualified?

12:20 - 13:30 **Session 2: Skilling and re-skilling measures as mitigators**

- Are company skill, educational, and social competency profiles changing as a result of industry 4.0?
- At an institutional level, what has been the predominant pedagogy of education and skill development programmes in India and how successful has it been in achieving its objectives? Are there changes needed?
- Have the skilling initiatives undertaken by the government for the sector been successful? Could these be strengthened?
- Are there other actors that play a role in reskilling?
- Are there skills that can be identified as critical in the context of industry 4.0 integration in an organization?

13:30 - 14:30 Lunch

14:30 - 15:25 **Session 3: Gender considerations**

- How, if at all, does the organisation of gender relations in the workspace and living space of workers interact with the process of automation?
- How may the nature of work for female workers evolve in the context of job security, wage, flexibility, and safety at the workplace?
- How, if at all, will automation affect the existing gender gap in the IT sector in India, both vertically and horizontally?

15:30 - 16:30 **Session 4: Social and policy pushes**

- What policy steps need to be taken to ensure the interests and rights of workers while enabling efficiency when integrating Industry 4.0? By companies? By the government?

- How can economic and labour policy frameworks influence as well as account for the adoption of Industry 4.0?
- What policy steps can to be taken to address the impact of industry 4.0 on work and enable positive outcomes?

**16:30 - 17:00** Tea

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