



Workshop: Automotive Sector and the Future of Work in India

July 31, 2018

10:30 am - 5:00 pm

Willow Hall at the Indian Habitat Centre, New Delhi

CONCEPT NOTE

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 with the objective of contextualising the research within a broader regional perspective. This workshop, thus, seeks to explore several key themes underpinning the impact of Industry 4.0 specifically in the automotive 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.¹ 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.²

¹ Carl Benedikt Frey and Michael A. Osborne, *The Future of Employment: How Susceptible are Jobs to Computerisation?*, 2013.

² 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.

Consequences of addressing these challenges of technological forecasting has led to a rich debate in relation to technological displacement of jobs itself. For instance, studies suggest an inverse relationship between automation and employment.³ Further the discourse is analysis that has sought to temper this narrative by suggesting that that automation did not significantly reduce employment, although they did reduce low-skilled workers' employment share.⁴

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 before attempting to comprehend the diffusion of these technologies within the automotive sector. 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 4.0.⁵

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.⁶ The skilling challenge gains enhanced importance in the broader context of nurturing an inclusive digital economy.⁷ 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.⁸

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 changes, policy making etc.). The workshop seeks to place these systemic contextual factors firmly within discourse around Industry 4.0 as well.

³ Robots and Jobs: Evidence from U S Labour Markets, Daron Acemoglu and Pascual Restrepo. Retrieved July 19, 2018, from <http://www.nber.org/papers/w23285.pdf>. See also Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation, McKinsey Global Institute. Retrieved July 19, 2018, from <https://www.mckinsey.com/-/media/mckinsey/featured%20insights/future%20of%20organizations/what%20the%20future%20of%20work%20will%20mean%20for%20jobs%20skills%20and%20wages/mgi-jobs-lost-jobs-gained-report-december-6-2017.ashx>

⁴ Robots at Work, Georg Graetz and Guy Michaels. Retrieved July 19, 2018 from http://personal.lse.ac.uk/michaels/Graetz_Michaels_Robots.pdf. See also Automation and Independent Work in a Digital Economy', Policy Brief on the Future of Work. Retrieved July 19, 2018, from <https://www.oecd.org/els/emp/Policy%20brief%20-%20Automation%20and%20Independent%20Work%20in%20a%20Digital%20Economy.pdf>

⁵ 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>

⁶ India's Readiness for Industry 4.0 - A Focus on Automotive Sector, Grant Thornton and Confederation of Indian Industry. Retrieved July 19, 2018, from

<https://www.gita.org.in/Attachments/Reports/India%E2%80%99s%20Readiness%20for%20Industry%204.0.pdf>

⁷ 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/

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

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 : Industry Perspectives**

- What are the key technologies within Industry 4.0 being adopted in the automotive sector? Where are these being adopted?
- What will factory assembly lines and vertical segregation across suppliers and OEMs look like under Industry 4.0?
- What are the 'tasks' that make up jobs in the sector? How are these tasks organised within the sector?
- What is driving the uptake of these technologies? What are the challenges in adopting Industry 4.0 technologies within the sector?

12:20 - 13:20 **Session 2: Impact of the uptake of Industry 4.0 technologies on the organisation of work : Labour Perspectives**

- How do the workers understand incorporation of newer technologies in their work and what changes, if any, have they experienced in their tasks?
- What was the experience of technological adoption on the shopfloor?
- How have workers' skill sets evolved over the course of their working life? Newer technologies will require a different skill set - how will workers negotiate that?
- Would workers welcome adoption of newer technologies that may reduce their workload but also reduce the number of workers required in a factory?
- Will adoption of newer technologies impact union formation, collective bargaining and industrial relations frameworks?

13:30 - 14:30 **Lunch**

14:30 - 15:30 **Session 3: Challenges of skilling and re-skilling approaches**

- How, if at all, are company skill, educational, and social competency profiles changing as a result of Industry 4.0?
- What steps can be undertaken to mitigate the further marginalisation of communities that have traditionally suffered to lack of access to skilling?
- Are education and training providers offering forward-looking training according to the changing enterprise skill needs?
- 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?
- In light of emerging technological developments, which core skills (and new skills) will be in most demand in the automotive sector?
- Studies from Germany suggest that Work 4.0 will require workers with interdisciplinary skills, especially social and creative intelligence and cross-functional skills. They will have to work more flexibly and independently in the future. What does this entail and how will it be achieved?

15:35 - 16:35 **Session 4: Labour regulations, industrial relations & public 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?
- It is predicted that newer ways of engaging with the workforce will be required to make adoption of Industry 4.0 effective. How will industrial relations frameworks and practices evolve to meet this challenge?
- How does the requirement for a better skilled workforce with an interdisciplinary skill set square with the current trend of increasing contractualisation of the workforce?
- How can economic policy frameworks influence as well as account for the adoption of Industry 4.0?

16:35 - 17:15 **Tea**

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