Research Policy

Call for Papers for a Special Issue on

Innovation and skills in the digital economy

Submission Deadline: 15 March 2019

Guest Editors

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Special Issue Background and Focus

The increasing use of advanced digital technologies is transforming innovation activities and production (Alcacer et al., 2016). Consequently, skills requirements are changing within and across organizations, industries, and countries, making existing ones redundant or obsolete (Autor, 2015; Autor, Dorn & Hanson, 2015; Zysman and Kenney 2018). New digital paradigms include a vast array of enabling technologies, such as the Internet of Things, Additive Manufacturing, Big Data, Artificial Intelligence, Cloud Computing, and Augmented and Virtual Reality (Rindfleisch et al., 2017). Whilst there is substantial research of the relation between digital innovation and skills from prior research on ICT adoption (e.g., Autor et al., 1998), the impact of new digital paradigms on, innovation, production and skill dynamics is yet to be fully observed (Consoli et al., 2016).

We are interested in bringing together rigorous research examining the relation between innovation and skills in the digital economy: whether and how firms are changing the management and organisation of innovation and production (internally and in relation to the system) (Brynjolfsson and McAfee 2014; Varian 2018), how such changes are related to skills requirements and composition (Spitz-Oener 2006; Acemoglu and Autor 2012; Vona and Consoli 2015; Nedelkoska and Quintini 2017), and changes in the labour markets (Acemoglu and Restrepo 2017; Lee and Clarke 2017; Ciarli et al. 2018; Atalay et al. 2018).

Digital technologies and increasing flexibility impact upon labour markets and employment practices (e.g. globally dispersed skilled freelance workers), their management and coordination. For instance, in the last decade Western countries have faced shortages in particular STEM (science, technology, engineering and math) occupations, which has resulted in a global sourcing of talent (Lewin et al. 2009). The relation is not only in one direction: skills and labour practices influence firms' adoption and use of digital technologies. Recently online marketplaces and crowdsourcing (Maskell 2014) for business services have proliferated. These marketplaces can intermediate between employers and freelancers and have enabled on-demand contract employment between project initiators (employers) and freelancers (employees) on a global scale (Massini et al., 2016). These seem to

create new dynamics among STEM and knowledge workers, while firms are developing new strategies to recruit and manage talent.

Examples of questions that papers could address, combining different aspects – innovation, firm and industry organisation, skills and labour markets – levels of analysis, and methods, are:

a. Does the adoption of digital technologies lead to a recomposition of skills and labour markets and to changes in firm behaviour and organisation? How does the composition of management and labour in firms and labour markets influence the rate of adoption and deployment of digital technologies?

b. What are the implications on skills of the adoption of digital technologies? Do intelligent tools and platforms enhance skills or replace them? Do they replace existing work or transform and create new work (Kenney and Zysman, 2019)? What is the impact of computerization on labor markets and new skill needs?

c. What are the reasons firms hire STEM workers offshore versus train them internally? Are there consequences of domestic STEM skills' shortage for corporate strategies? What are the roles of digital labour platforms for accessing global talent on demand? For what activities are they effective? For which ones have they been less effective?

d. How do companies make use of online platforms in the STEM fields for R&D or innovation projects? What are the challenges of managing STEM researchers when organizations make firm research boundaries more porous using strategies such as contracting for R&D or product development? What are the motivations for developing global networks of R&D personnel? Are such strategies effective and the best use of STEM resources and knowledge workers (Reiche, 2007) and what are the implications for managing innovation processes?

e. To what extent does the adoption of new manufacturing technologies (e.g. digital manufacturing - additive manufacturing, continuous manufacturing, collective manufacturing, cloud computing and cloud manufacturing) lead to the reorganization of innovation networks and processes (Alcacer et al., 2016; Dosi et al., 2013)?

f. How does the implementation of digital technologies affect the location and types of labour in global value chains and their configuration? Do firms change coordination mechanisms, develop different organizational configurations and new capabilities, in response to increasing digitalization? What is the role of workers and managers and how do they contribute to reconfiguring organizational capabilities?

g. How do organizations and managerial practices change due to collaborative initiatives and embeddedness in networks? How do they manage complex and dispersed network organizations (Arora et al., 2016a, b)? To what degree do these introduce new levels of complexity for managerial decision-making?

h. What is the role of country-specific innovation policies for setting in a globally dispersed learning economy (e.g., Lundvall, 2016)? Should and can policy makers intervene and address domestic STEM skills shortage, and reduce incentives and drivers to move R&D activities offshore, retain or bring back innovation activities home? What kind of R&D policies are necessary when firms adopt more flexible work practices?

We welcome theoretical and empirical contributions, using qualitative or quantitative methods, and either a micro or macro level analysis, addressing, but not limited to, the questions above.

Deadline, Submission and Review Process

The deadline for submission to this special issue is **15 March 2019**. Submissions should be prepared in accordance with *Research Policy's* author guidelines available at https://www.elsevier.com/journals/research-policy/0048-7333/guide-for-authors.

When submit your manuscript, please select Martin Kenney as the receiving editor, and SI: Digital Economy and Skills as the Article Type.

The Guest Editors will screen the submissions to ensure appropriate scope and relevance. Manuscripts that are successful in the initial screening will be sent for double-blind reviewing.

Papers invited to Revise and Resubmit after the first round of reviews will ideally participate in a paper development workshop that will provide an opportunity for intensive discussion and dialogue on the special issue. Invitation to participate in the workshop will not grant acceptance to the Special Issue.

Tentative publication date: end of 2020.

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