

Call for Papers

Contributions to a special issue of the German journal WSI Mitteilungen about Industry 4.0

Industry 4.0 in empirical reality: non-synchronous developments, consequences for labour policy

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The special issue, in planning for 2018, pursues the aim to cast light on the actual implementation state of Industry 4.0, mainly by means of empirical papers. "Industry 4.0" is as yet a concept focused on technology and predominantly located in discourse. Based on selected empirical examples and findings from relevant areas of the digitization of work, the special issue intends to show conflicts and design options of "Industry 4.0" in actual (work) practice and to demonstrate and discuss consequences for labour policy.

The CfP is directed at researchers and practitioners who have conducted resp. are conducting recent or current empirical projects in relevant areas of implementation of "Industry 4.0". Rather than visions or scenarios of development, the idea is to present and discuss concrete developments in enterprises that are experienced by employees and works councils and have perceptible effects upon them currently and potentially in the future. The main focus should be industry in the narrower sense of the word, i.e. manufacturing industries and production-related services, including IT and engineering services, processes of logistics and transport within value chains of manufacturing companies, and even trading. Within producing companies, not only work on the shop floor should be considered but also "indirect areas" that are influenced by Industry 4.0, e.g. engineering, work scheduling, production planning, procurement and shipping, intralogistics, after sales and service departments.

Papers could, for instance, deal with the following **areas**:

- Changes of *man-machine interaction resp. cooperation*, including novel forms of programming and refitting, e.g. in the context of new approaches of robotics (adaptive, bimanual, lightweight) or application of wearables and assistance systems,
- changes of *working processes and design of workplaces and work activities*, e.g. in the context of intralogistics, for instance by use of autonomous vehicles, drones, etc.,
- requirements of (increasingly) digitally networked *collaboration within companies and across companies*, even worldwide if applicable, in the Cloud or virtual teams, and of (partial) *automation of customer contact* (e.g. insight into stock of inventory and state of processing, automated creation of offers and invoices, platform-mediated crowd working, use of Artificial Intelligence at the phone, etc.),
- changes in the *role of human actors and their expertise* by means of Big Data, autonomous systems, deep learning, e.g. in services, maintenance and repair, procurement, also in human resource management supported by algorithms (personnel placement, recruitment, competency matching, web profiles, performance appraisal, etc.).

The papers should also provide insights on the **conceptual** level, as with reference to:

- the current state of technological implementation of Industry 4.0,
- the forms of organizational and formal embedding,

- the identification of transferable models of implementation and of typical barriers and areas of conflict,
- the identification of paths of development and concrete settings of directions,
- aspects of micropolitics relevant in the introduction and implementation, also the guiding principles addressed in this context, including their limits,
- changes concerning the role of human actors, the relevancy of human workforce, labor capacity, experiential knowledge, informal action, subjectivity, etc., including the question of leeway for human actors,
- basic concepts of digitization, as distributed agency, general principles of informatization, new arrangements of socio-technological systems,
- the interplay of technization and economization, new forms of embedding digitization in systems of added value,
- the identification of persisting limits to digitization and automation.

The papers should analyze and systematize the empirical findings with respect to their **consequences for concrete labor policy** (including the challenges for the representation of employee interests e.g. in works councils or trade unions), as for instance:

- design examples (good practices) for good work, particularly with reference to health, sustainability, learning support, etc.; also deficits and risks with reference to these areas,
- consequences for employment, quality of work, skill requirements, etc.,
- aspects of management and control of staff performance, power relationships, micropolitics,
- implications for labor policy and interest representation, legal framework, etc.,
- suggestions for participatory design, concepts and manuals for dealing with measures of digitization.

Thus, the special issue as a whole should present an overview over the current state of the progressing digitization of work, its implementation and challenges, using the example of Industry 4.0. It should resume both the empirical knowledge about this subject and its gaps.

The idea is to outline a valid and differentiated picture of current and future digitization processes in close connection to practical reality (beyond laboratories and model factories) and to point out needs and options for shaping this process beyond technological determinism. For this reason, a high sensitivity for the complexity of socio-technological systems in practice and for the richness of human workforce is desirable. Moreover, the transferability should be an important issue.

Until 31 May 2017, a letter of interest (1 to 2 pages) should be submitted which outlines the area, the conceptual focus, and the relevancy for labour policy, as well as the richness and state of the empirical basis. The complete papers should be submitted until 15 August 2017. The issue will appear in print in the beginning of the year 2018.

Editorial requirements see http://www.boeckler.de/wsi-mitteilungen_41596.htm

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