



POLITECNICO
MILANO 1863

DIPARTIMENTO DI
INGEGNERIA GESTIONALE

DIG PhD scholarship

Title	Organization 4.0: alternative strategies, organizational models and technological solutions for Smart Manufacturing
Theme	<p>Manufacturing is facing dramatic changes as a consequence of the Industry 4.0 technological revolution, often also referred to as Smart Manufacturing (SM). This trend has been further accelerated by the current pandemic emergency. One critical aspect of this revolution that both academic and practitioners are debating refers to the changes needed in the design of work organization, practices and competencies. Preliminary studies show how the implementation of SM can result in at least two different organizational models, one which exploits technology to substitute the human work and one which instead exploit technology to empower the operators, enlarging the nature of tasks and the level of autonomy. The overall vision and strategy of the company for the Smart Manufacturing project or programme, together with the change management approaches, are expected to have an important role in pushing one or the other model. Within this context, the constraints and safety requirements consequent to the pandemic pushed towards the emergence of the so called Industrial Smart Manufacturing model, that refers to the application of Smart Working principles to the production activities,</p> <p>The aim of this stream of research - that will be the focus of the proposed PhD scholarship - is to study the complex interplay between manufacturing vision and strategy, smart technologies, work organization practices and project management/implementation practices, with the aim of exploring the different alternative smart manufacturing models, including Industrial Smart Manufacturing. In particular, manufacturing strategies, contingent variables, organization of work at the micro and macro level, the design and implementation process, and the different technological “use case” will be the object of the study, in order to identify emerging best practices able to improve operational performance and workers satisfaction, coherently with the company business.</p> <p>Some of the possible questions are: How will the evolution of technology and the implementation of the Smart Manufacturing paradigm change the work organization practices in the factories? Which are the contingent variables which influence most the shift towards the empowerment of operators? What is the role of manufacturing strategy and vision in shaping alternative smart manufacturing models? Will the evolution of the technology and the implementation of the Smart Manufacturing paradigm allow to overcome the trade off among the different dimensions of employee well-being? What are the key enablers and consequences of the</p>



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	Industrial Smart Working model? These and other questions will be explored in this research stream.
DIG professors involved	Raffaella Cagliano and Filomena Canterino
International collaborations	<i>ESADE – Spain, KTH – Sweden, Aalborg – Denmark, ETH – Switzerland, Corvinus University of Budapest – Hungary, University of Groningen –The Netherlands</i>