



PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 40th cycle

THEMATIC Research Field: LEADERSHIP AND CHANGE MANAGEMENT FOR INDUSTRY
5.0

Monthly net income of PhDscholarship (max 36 months)
€ 1500.0
In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity	
Motivation and objectives of the research in this field	<p>While companies across the globe adopt smart technologies to innovate their work processes, they are also faced with the increasing call for improving their proenvironmental performance. While technologies are often positioned as the answer to reducing operational footprint, their dependency on scarce natural resources makes this 'twin transformation' complex to engineer and manage. Moreover, both employees and leaders who should adopt such advanced technologies may perceive increased job uncertainty, doubts about their current skillset, 'technostress', reduced job meaningfulness as (some) tasks are taken over by technologies, and changing interactions with (new) colleagues (e.g., software engineers, robots, and AI agents). These concerns put pressure on their well-being and job thriving. Yet, to effectively navigate the transformation, leaders and employees must become agile, resilient, flexible, data-driven, and 'innovation-ready', as they must constantly adapt to new technological and contextual changes. Given the complexity and fast pace of change, the available leadership and change management models might not be adequate. Indeed, the European Commission is promoting a fifth industrial revolution ('Industry 5.0'), whereby humans are put back in the center of the transformation. This means that rather than a traditional, linear top-down approach to leadership and change management there is a need for more participatory, agile approaches to change promoting</p>



	<p>shared leadership as well as on-the-job learning and adaptation. As such, Industry 5.0 might require a shift in roles and responsibilities between employees and their leaders, leading to questions such as:</p> <ul style="list-style-type: none"> - How does the role and work design of leaders and employees change in Industry 5.0, and how do these roles interact? - How do leaders at different hierarchical levels need to transform their behaviors to stimulate employees' adoption of advanced technologies? - How can the agility and adaptive skills of leaders and employees be developed? - Which (innovative) change interventions could be developed to enable employees' adoption of advanced technologies? - How can teams and their leaders co-create the change process contributing to the Industry 5.0 transformation journey? <p>This research therefore aims to advance the knowledge on the social side (leadership, employee behavior, change management) of the twin transformation and is fully coherent with the objectives of the HumanTech project.</p>
<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>The research will start with a comprehensive systematic literature review encompassing all pertinent literature streams to effectively frame the study, spanning the domains of Organizational Behavior, Change Management, and Operations and Technology Management. As more refined research questions emerge, the investigation will be conducted using a mix of qualitative and quantitative empirical methods, drawing on multiple case studies or collaborative action learning research approaches with (large) companies across the globe currently engaging in Industry 5.0. To contribute to more precise and objective leader and employee behavioral measurement as well as boost participants' immediate learning and foster codevelopment, the research will utilize cutting-edge research methods including video-observation, physiological arousal, and/or eye-tracking. As such, the field studies aim to use innovative high-tech methods that contribute to more actionable findings, enabling companies to immediately</p>



	<p>implement the practical implications.</p> <p>When feasible, specific research questions addressing individual employee barriers to technology adoption and behavior change will be examined using experimental research methodologies, leveraging the resources of the Department of Management, Economic and Industrial Engineering's (DIG) Behavioral Research in Immersive Environments Lab, funded through the HumanTech research platform. Additionally, the research can benefit from the partnerships and data accessible through some of DIG's Digital Innovation Observatories.</p>
<p>Educational objectives</p>	<p>The PhD programme aims to develop the PhD candidate into a professionally-skilled, independent, and societally-engaged scholar. Thus, the main educational objectives are:</p> <ul style="list-style-type: none"> - Developing novel theory and research skills in the domain of advanced sustainability-oriented technology adoption, leader and employee roles and behavioral interactions between hierarchical levels, and organizational transformation and change. As a result, the PhD candidate will be equipped to contribute to the development of actionable organizational change approaches that meet the needs of various stakeholders, safeguarding employee well-being and thriving. - Developing research methodology skills in empirical qualitative methods, behavioral research, and data analytics. By acquiring these skills, the PhD candidate will be able to conduct rigorous and insightful studies that can inform evidence-based decision-making and contribute to the advancement of knowledge in their respective fields. - Developing presentation skills to effectively communicate the research findings among stakeholders. The PhD candidate will learn how to present their (preliminary) findings at academic (and possibly also professional) conferences and during progress meetings with (senior) managers at the organizations participating in the field research, as well as how to write academic articles targeted at publishing those articles in international peer-reviewed (academic) journals. - Developing capabilities to drive the adoption of



	advanced technologies to support pro-environmental performance in the workplace through leadership and employee development and co-creation. By developing these capabilities, the PhD candidate will be well-prepared to advise organizations across different sectors on the design and improvement of their organizational change approach and training and development of relevant leader and employee skills.
Job opportunities	<ul style="list-style-type: none"> - Researcher/lecturer at (international) higher education institutions. - Technology and sustainability expert or manager in private, hybrid, non-for-profit companies, or public administrations. - (International) Management consultant specialized in technology and sustainability, leadership, organizational development, and change. - Digital technology expert in private, hybrid or non-for-profit companies or public administrations.
Composition of the research group	1 Full Professors 2 Associated Professors 1 Assistant Professors 1 PhD Students
Name of the research directors	Raffaella Cagliano, Desirée Van Dun

Contacts

raffaella.cagliano@polimi.it

Additional support - Financial aid per PhD student per year (gross amount)

Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad

Amount monthly	750.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information

The candidate will have access to a working space at the Department of Management, Economics and Industrial Engineering (Bovisa campus) and will attend all the educational



activities and the PhD Courses offered by the PhD Program in Management Engineering. Opportunities to become a teaching assistant and to be trained within the Teaching Development Program of the Department and Polimi are also available. Also, all the relevant research hard- and software and infrastructure will be available. The supervisory team will consist of international experts, including professor Raffaella Cagliano and dr. Desirée van Dun. A research visiting period of at least six months with one of the DIG-Polimi partner universities is also foreseen. The supervisory team's international company network and professional work experience as well as expertise in Organizational Behavior, Change Management, and Operations and Technology Management will help you develop into an effective scholar and develop your (research and consulting) skills.

- Involvement in projects: "For the overall development of their capabilities, PhD candidates will work on sinergical projects to favour empirical data collection and network development for their career. Projects will give candidates the opportunity to work in group (peers and other senior professors)".
- Teaching and tutoring: "If coherent with the development of their doctoral program, the PhD candidate will have the opportunity to be involved in: teaching activities, tutoring to master students, tutoring to PhD candidates for administrative processes".

Funding for educational activities: 6.100,00 Euros for three years.