POLITECNICO DI MILANO

PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 41st cycle

THEMATIC Research Field: ANTICIPATING THE FUTURE OF PAYMENTS: STRATEGIC FORESIGHT AND SYSTEM DYNAMICS MODELLING FOR POLICY AND STRATEGY DEVELOPMENT IN THE PAYMENTS ECOSYSTEM

Monthly net income of PhDscholarship (max 36 months)
2200.0 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	Payment systems have undergone significant transformation and continue to evolve at a rapid pace. The emergence of innovative methods has not only fuelled the growth of transactions, but has also reshaped the way individuals and companies manage their finances on a daily basis. Currently, the digital payments market is developing in an environment characterised by uncertainty, as technological advancements, regulatory changes, the introduction of new forms of money, and increasingly complex consumer demands disrupt established norms. These factors are giving rise to new ecosystems and heightening competition across the sector. In this evolving landscape, foresight and System Dynamics Modelling (SDM) serve as complementary approaches for navigating the complexities inherent in the payments ecosystem. The academic literature points to a notable gap in the application of foresight methodologies within service industries, with financial services in particular remaining relatively underexplored. SDM offers a structured, simulation-based framework to analyse system behaviour over time, allowing for the stress-testing of scenarios, quantification of diffusion and adoption processes, and mapping of feedback mechanisms between incentives and market structure. Across Europe, policymakers increasingly recognise the value of strategic foresight as a means of addressing uncertainty in the sector. This research seeks to combine qualitative and

	quantitative methods to develop scenarios and design a framework that explains industry dynamics and assesses the impact of policy interventions. By doing so, it aims to provide evidence-based guidance for both firms and regulators, supporting informed decision-making in an increasingly complex payments ecosystem.
Methods and techniques that will be developed and used to carry out the research	The research project will use the following methods: •Foresight methodologies (e.g., horizon scanning, trend analysis, Delphi): to identify signals and megatrends shaping digital payments; •Surveys: to quantitatively assess stakeholder perceptions, accessibility, trust, and adoption willingness; •Secondary data analysis (e.g., industry statistics or firm-level data): to measure adoption and outcomes; •System Dynamics modelling: to create diagrams and simulations of feedbacks, diffusion and policy levers, integrating empirical data for scenarios; •Validation: to test the framework via expert input and comparative case analysis.
Educational objectives	The main educational objectives of the research project are: •Build skills to assess evolving digital payment strategies and policies, focusing on financial inclusion, user behaviour, market competition, and innovation. •Develop expertise in mixed qualitative–quantitative methods, such as horizon scanning, trend analysis, surveys and System Dynamics, using empirical data for simulations. •Enhance the ability to provide strategic policy insights and evidence to help stakeholders in selecting and implementing sustainable digital payment solutions through scenario and policy analysis.

Job opportunities	PhD graduates in this field can pursue: •Academic roles in foresight, system dynamics, and payment economics; •Advisory positions at public institutions including central banks, regulators, innovation agencies and research centres focused on digital transformation and policy; •Strategy or advisory jobs in commercial banks, consulting, fintech and financial institutions, specialising in digital transformation and foresight.
Composition of the research group	3 Full Professors 3 Associated Professors 2 Assistant Professors 16 PhD Students
Name of the research directors	Luca Gastaldi

Contacts
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents	--

Scholarship Increase for a period abroad	
Amount monthly	1100.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
The candidate will work at the Department of Management, Economics and Industrial Engineering and attend the PhD Courses and all the educational activities of the PhD Program in Management Engineering. 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 groups (peers and other senior professors). 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.

The interaction with key stakeholders requires a fluent knowledge of the Italian language.

Funding for educational activities: 8.900,00 Euros for three years.