Letter

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Corporate AI Living Labs: A Structured Approach to Accelerating AI Adoption and Transforming Towards AI-Empowered Employees for Operational Excellence

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Abstract

The integration of artificial intelligence (AI) into corporate environments becomes essential for enhancing efficiency, decision-making, and fostering innovation. While AI adoption has successfully optimized specific operational processes, the holistic deployment of AI aimed at empowering employees remains underdeveloped. This letter introduces the concept of the "AI Living Lab" within corporate environments, designed to accelerate AI adoption, foster innovation, and enhance employee productivity and satisfaction. The concept appeared as a response in Continental Automotive to the problem of faster adoption time and scaling of AI-Empowered Employee solutions inside the company. Through a current observation on the state of the art, Continental Automotive's AI Living Lab as a case study, and identification of existing gaps, this letter suggests future research areas for a scalable AI Living Lab framework in corporate settings.

Keywords: corporate AI living labs, AI adoption, AI-empowered employees, co-creation with employees, real-world experimentation, employee empowerment, scalability of AI solutions, ethical AI governance, impact assessment metrics, automotive industry, employee-driven AI development, operational transformation, framework development for scalability, academia-industry Collaboration, knowledge transfer models.

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1. Introduction

As AI technologies become integral to the corporate landscape, they present transformative opportunities to reshape operations, workforce dynamics, and organizational culture. Corporations are exploring different approaches to experiment with AI, but to date no specific approach has surfaced. In this letter, we propose Living Labs as a possible solution. Living Labs are dynamic environments where solutions can be co-created, tested, and refined in real time with active user participation (Schuurman, 2015). This approach seems valid for companies to experiment with AI integration directly within workflows to enhance performance, creativity, and productivity.

However, in the context of novel technology exploration and implementation, there majority of the Living Labs literature deals with Living Labs in the public sector (Gascó, 2017), Living Labs

in academia (Evans et al., 2015), or Living Labs aimed at citizen participation (Robaeyst et al., 2023). In terms of AI and Living Labs, most literature is focusing on the societal impacts of AI (Vilariño, 2022).

Therefore, based on a concrete case within the Romanian division of worldwide automotive player Continental, we want to introduce the concept of corporate AI Living Labs as a potential approach to implement AI in companies. This AI Living Lab functions as a collaborative ecosystem where employees, AI experts, and stakeholders work in real-world conditions to develop, test and deploy AI technologies. This participatory model enables rapid feedback, iteration, and innovation, bridging the gap between AI development and its practical application in corporate environments. The focus on employee co-creation of AI tools not only augments their capabilities but also fosters a culture of innovation and operational efficiency. More than this, without direct engagement of employees, companies would never get access to actual daily-job pain points, which shall be one of the main triggers for developing AI-driven solutions.

2. State of AI and Living Labs in Corporations

Over the past decade, AI has become an essential tool in the corporate world, offering enhancements in areas like process automation, predictive analytics, and decision-making. Applications span marketing optimization, HR management, and supply chain forecasting, yet the focus has been largely technology-centric, with limited direct employee involvement in AI system development. This approach, often top-down, can result in low engagement and underutilization of AI's potential due to limited customization and lack of user input.

The Living Lab model emerged as a user-centered co-creation platform to foster real-world innovation, initially applied in urban and academic contexts to integrate user feedback directly into technology development. This approach has proven effective in the public sector, where user-driven design principles and real-time experimentation are core. However, the application of Living Labs within corporations, particularly for AI development, is still nascent. Companies are recognizing the potential of employee-driven AI co-creation, yet research gaps remain regarding its practical implementation in complex corporate structures.

3. The AI Living Lab Concept

An AI Living Lab within a corporate setting is a structured framework where AI technologies are developed and iteratively improved with the active involvement of employees. Key characteristics include:

- Co-Creation: employees collaborate in AI system development, ensuring user-centered solutions that meet actual needs.
- Real-World & Real-Time experimentation: AI tools are tested in real-world environments, allowing immediate feedback and rapid refinement.
- Continuous learning: AI systems evolve based on ongoing user input, adapting to dynamic corporate requirements.

Corporate AI Living Labs offer substantial benefits, including:

- Employee empowerment: employees gain ownership by contributing to AI tool design, fostering engagement.
- Innovation acceleration: collaboration between AI experts and users accelerates the development cycle.
- Increased AI adoption: involving employees in AI development increases buy-in and smooths integration into workflows.

- Scalability and adaptability: the iterative Living Lab model supports scalable solutions adaptable to other departments or corporations.

- Trustworthiness by design: Being directly engaged with the development and usage of the AI solutions, trust evolves from the very beginning.

4. Gaps in Current AI Living Lab Implementations

Lack of corporate focus: while Living Labs have been widely used for product innovation, corporate AI applications co-creation remain underdeveloped. Additionally, the corporate focus is still largely on automation rather than enhancing human capabilities, limiting the scope for meaningful employee-AI interaction.

Employee Participation and Resistance: Employee engagement faces significant challenges due to fears of job displacement and a limited understanding of AI capabilities. This creates a contradictory situation: while AI replaces certain jobs, it also creates new ones and demands new competencies. Training and skill development programs are essential to equip employees with the digital literacy needed for effective co-creation. Corporate AI Living Labs seem to be the ideal setup to investigate and shape this transformation of the workplace.

Scalability and Best Practices: Larger corporations face challenges in adopting scalable AI Living Lab frameworks due to complex hierarchies. Standardized best practices are lacking, making it difficult for companies to fully implement Living Labs without a clear roadmap.

5. Continental's AI Living Lab: A Case Study

Continental Automotive's AI Living Lab in Romania stands as a pioneering model for Corporate AI Living Labs. This initiative explores how AI Living Labs can empower employees while fostering a scalable AI-driven culture within a large corporation, in cooperation with external innovation ecosystems. The lab serves as a dynamic environment where innovative AI solutions are developed, tested, and refined, ensuring they meet the practical needs of the organization. Its main objectives are:

Scaling AI solutions across functions: the lab focuses on developing AI tools that can be seamlessly integrated across various departments. This approach ensures that AI solutions are consistent and standardized throughout Continental, enhancing overall efficiency and coherence in AI application.

Employee-driven AI development: a key aspect of the lab's strategy is involving employees in the AI development process. By providing direct feedback on AI tools, employees help shape solutions that are not only technically sound but also user-friendly and relevant to their daily tasks. This participatory approach fosters a sense of ownership and engagement among employees.

Operational transformation: the AI solutions created in the lab are designed to align with Continental's broader operational goals. This includes driving process optimization, improving operational efficiency, and supporting strategic initiatives. The lab's work contributes to transforming Continental's operations, making them more agile and data driven.

Continental's AI Living Lab exemplifies how Corporate AI Living Labs can drive innovation through co-creation and operational transformation. By enabling employees to become both users and innovators of AI solutions, the lab fosters a culture of continuous improvement and technological advancement.

A collaborative venture has been set-up between the West University of Timișoara (UVT) and Continental Automotive Romania to facilitate a robust transfer of expertise in establishing and managing a corporate AI Living Lab. Drawing on UVT's successful experience with the Digital & Green Living Lab, a recognized member of the European Network of Living Labs, this partnership aims to impart comprehensive insights into the lab's foundational elements: governance frameworks,

sustainable business models, and effective stakeholder engagement strategies. The UVT Digital & Green Living Lab stands as a regional benchmark in academia-industry collaboration, serving as a platform for cross-sector knowledge exchange and innovation, with proven results in the integration of challenge-based education and research. Such practices are valorized in the context of the University-Continental partnership in enhancing employees' empowerment while promoting operational excellence through real-world applications.

6. Future Research Opportunities

Continental's example highlights several research areas that could further advance the concept of Corporate AI Living Labs:

Framework development for scalability: there is a need for research focused on developing scalable frameworks that can be applied across diverse corporate contexts and cultures. Such frameworks would facilitate the broader adoption of AI Living Labs in various industries, ensuring that they can be tailored to meet specific organizational needs. Although AI Living Labs are promising for individual projects, their scalability across departments, regions, and organizations has not been extensively studied. Models for scaling AI Living Labs in large corporations need more exploration.

Quantitative impact assessments: current studies primarily rely on qualitative assessments, with few metrics available to quantify the impact of AI Living Labs on operational performance. Developing quantitative frameworks is essential for establishing clear value propositions to secure future investments in such structures. Additionally, developing robust metrics to evaluate the extent to which employees feel empowered by AI tools is crucial. This research would help demonstrate the impact of AI Living Labs in increasing AI adoption by providing tangible evidence on employee engagement and productivity.

Best practices for co-creation with employees: while co-creation is a hallmark of living labs, there is limited guidance on best practices specifically for corporate environments. Effective methodologies for involving employees at different levels and across various functions require further investigation. Applying known

Governance and ethics in corporate AI: Establishing ethical and transparent governance frameworks is essential for the responsible use of AI in corporate settings. Research in this area would focus on creating guidelines and best practices that ensure AI technologies are used in ways that are fair, accountable, and aligned with organizational values.

Comparative Studies Across Industries: Conducting comparative research across different sectors can help identify best practices and adaptable strategies for implementing Corporate AI Living Labs. Such studies would provide valuable insights into how different industries can leverage AI to drive innovation and operational excellence.

Longitudinal Impact Studies: Most research focuses on the short-term outcomes of AI Living Labs. Long-term studies are needed to examine the sustainability and evolution of Corporate AI Living Labs as ongoing infrastructure.

By addressing these research areas, organizations can further refine the concept of Corporate AI Living Labs, ensuring they continue to drive meaningful innovation and operational improvements.

7. Conclusion

Corporate AI Living Labs offer a transformative approach for AI adoption, enabling organizations to empower employees and enhance operational performance through structured co-creation. Continental's AI Living Lab explores how these environments can scale, integrating AI solutions effectively across the organization, reaching a faster adoption time and increasing added value through AI-based operational excellence. Addressing research gaps, such as scalability models, metrics for employee empowerment, and ethical governance, is crucial to realizing the full potential

of Corporate AI Living Labs. With further research, these labs have the potential to become a staple in corporate process innovation, driving AI-driven growth while fostering a culture of AI-empowered employees.

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