Towards Sustainability in Procurement Through AI

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The urge for fast action on climate change brought the question of sustainability to the table of many companies. Assessing a company's processes and products' impact on global warming potential is complex and needs significant investments. Making more sustainable strategic decisions based on an sustainability framework tackles long-term reduction of emissions. This work, in contrast, aims to provide short-term feedback on operative business processes in procurement.

Approach

The Literature research for sustainability strategies and frameworks applicable to a Swiss SME in the manufacturing industry has focused on the pillars of economic, environmental and social sustainability. The market evaluation defined the ML and AI solution, enabling the following added values for an employee working in corporate procurement: calculating equivalencies, finding alternatives, consolidating orders, rating suppliers/products, suggesting sustainable practices, categorizing products, and predicting future demand. A cloud application enhances transactional and master data from an SAP ERP System with sustainability data. The application integrates the generative AI model of GPT-4 and additional ML models for product emission assignments and supplier evaluations. A mobile application for purchasers links business processes and data with enhanced generated content.

Results

By leveraging Machine Learning (ML) and Generative Artificial Intelligence (AI), the work realized a proof of concept solution to challenge behavior and practices, empowering companies with an SAP ERP System to make sustainable procurement decisions. The scope of operative business processes, such as procurement of material, supplier returns, and one-time supplier evaluation, opened a wide range of opportunities for integrating AI features. Out of the feedback from user acceptance tests, it follows that purchasers gain valuable insights regarding sustainability while processing their daily tasks and reinforcing their learning towards more sustainable practices.

Conclusion

The architecture proves the realization of the solution and guarantees flexibility and extensibility for further exploration of applying AI features to business use cases. AI capabilities may help procurement employees to think outside the box of their usual practices and methods. Viable long-term results can significantly impact the quest for a more responsible business world. The used models have not been trained to be context-specific; therefore, they shine most on general suggestions and assessing habits in this application. The generative AI output in multiple use cases is neither transparent nor accurate or complete to rely solely on it in business context. Integrating different ML models can improve the solution's intelligence, primarily in assessing material data and perform supplier evaluations.

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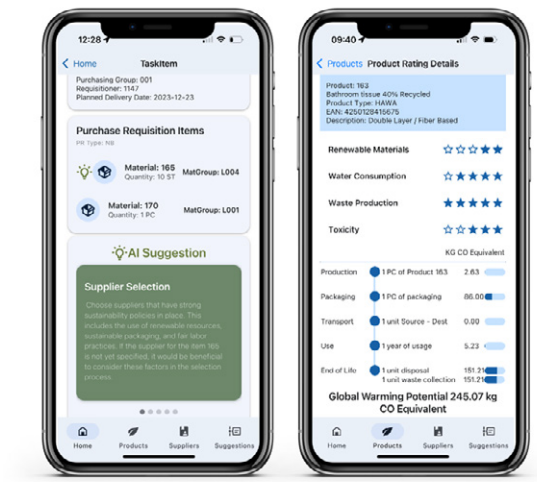
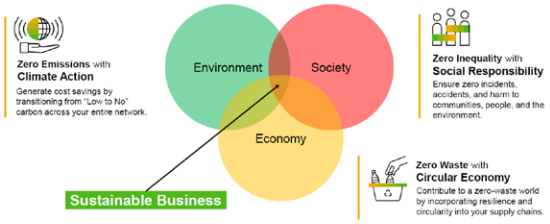


Mobile View on iOS for Procurement AI App



The three pillars for sustainable Business