Considerations for the Use of RAG Systems in Small Municipalities in Selected Use Cases

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Abstract

The use of artificial intelligence (AI) and retrieval-augmented generation (RAG) systems in municipal administrative processes opens up new opportunities to increase efficiency and improve the quality of public services. This article focuses on the analysis of selected municipal use cases, including application procedures for social benefits, economic development, emission control permits and the introduction of digital twins using the example of the municipality of Hofbieber. AI-based systems automate routine activities, support plausibility checks and enable data-driven decision-making. In particular, Hofbieber's digital twin shows how AI-powered analytics can contribute to CO_2 monitoring, risk assessment, and sustainable urban planning. Despite technical, organizational and legal challenges, the case studies illustrate the potential of AI solutions to promote sustainable development and citizen participation even in small municipalities. The results underline the need for holistic approaches to ensure acceptance, data protection and continuous qualification of employees and thus fully exploit the advantages of AI in public administration.

Keywords

RAG Systems, Use Cases, Technical and organizational Challenges, Digital Twins.