HSLU Hochschule Luzern

Technik & Architektur
Master of Science in Engineering

Master's Thesis - Business Engineering

The Role of Generative Artificial Intelligence in the Digital Transformation of Organizations

including a CASE STUDY AT WIENER LINIEN GmbH & Co KG

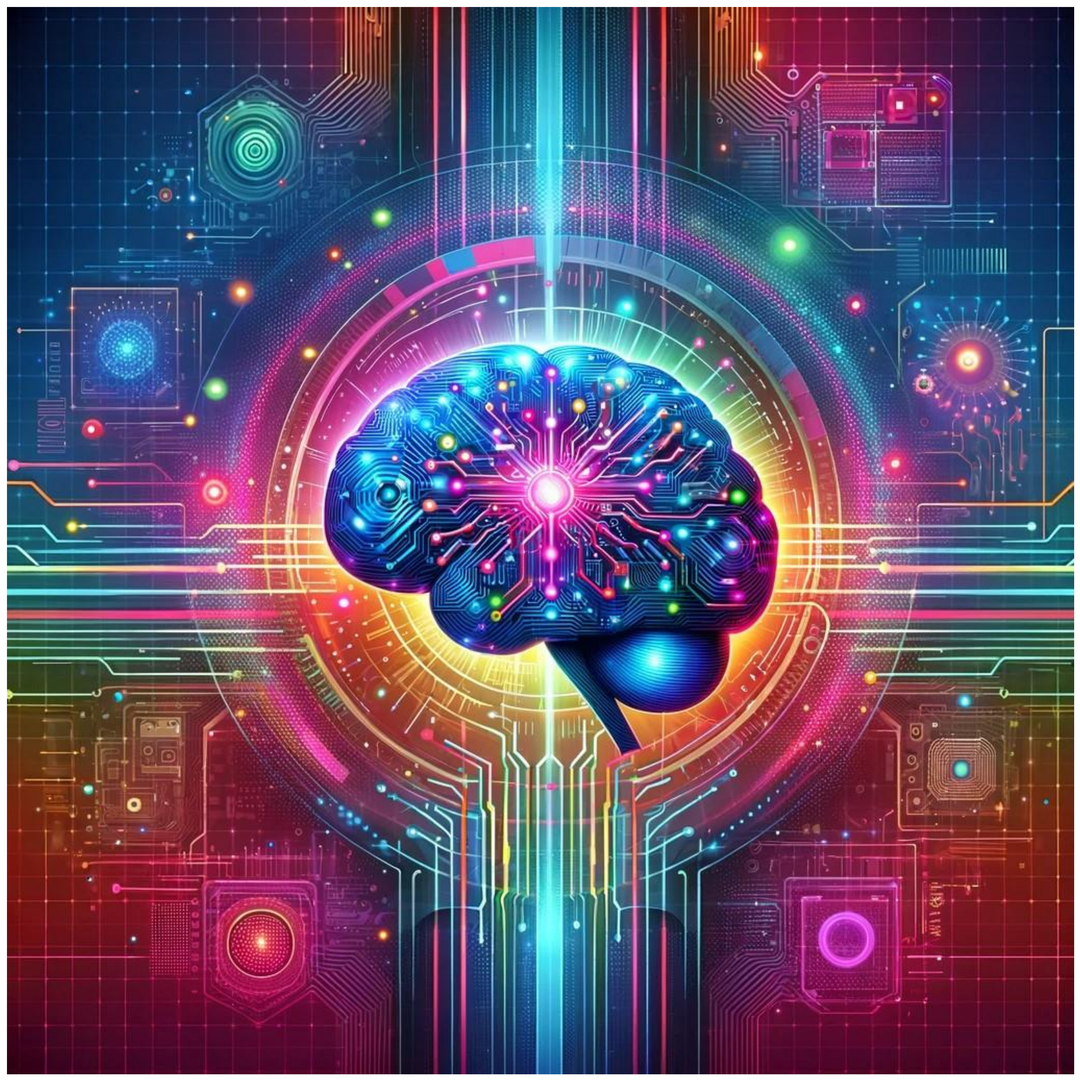
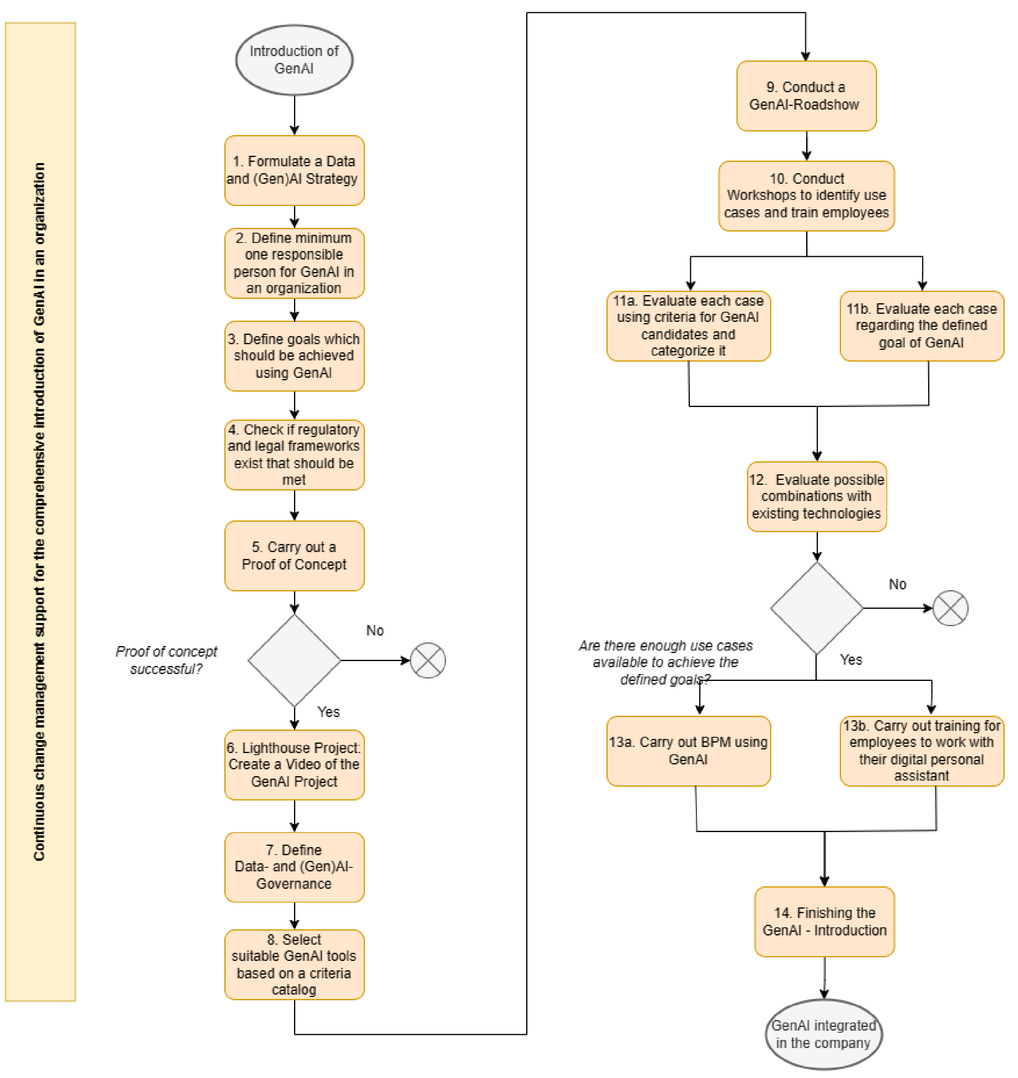


Image of a futuristic Generative Artificial Intelligence generated using DALL-E 2, on 20th of December 2023

Prompt: Generate an image of a Generative Artifical Intelligence, using an image of a brain and futuristic colors, for a poster of an academic thesis.



Recommended overall step-by-step process that can be used to introduce Generative Artificial Intelligence (GenAI) into an organization

Problem Statement

Since the advent of digital technologies, they have been consistently transforming how people communicate, consume, and shape their daily lives and interactions. These advancements present challenges for both individuals and organizations, while simultaneously offering vast opportunities and necessitating the management of associated risks to keep them minimal. Successfully adapting to the digital era can grant companies competitive advantages, enhanced efficiency, and reduced costs. By November 2022, ChatGPT became globally available online, and by January 2023, there was a growing hype around this new platform and Generative Artificial Intelligence (GenAI) as a whole. This recent surge in interest in GenAI over the last year, is why organizations are keen to expand their understanding of this technology to potentially enhance and streamline their everyday business operations.

Solution Concept

The aim is to investigate how GenAI can be utilized to prepare organizations for upcoming developments. The Main Research Question is "What role can GenAI play in the digital transformation of organizations?" The research is based on a mixed-method approach, including 36 problem-centered expert interviews, an expert survey, and an in-company survey at Wiener Linien GmbH & Co KG.

Results

The influence of GenAI in the Digital Transformation of organizations can be characterized as a disruptive one. It is anticipated to significantly alter business models, operational methods, structures, and cultures in society and organizations alike. The main strength of GenAI lies in its broad applicability. It can not only enhance results when integrated with existing technologies like Robotic Process Automation (RPA), but also expand automation beyond rule-based tasks to heuristic tasks traditionally handled by humans. Ethically, the concept of digital humanism, which advocates using technology to benefit humanity, is highlighted as essential. This principle should be deeply embedded in society, acknowledging that technologies, including Artificial Intelligence (AI), can have both beneficial and detrimental effects. As result the author suggests a step-by-step approach for integrating GenAI into an organization.

Barbara Keck

Lecturer:
Prof. Dr. Clemente Minonne

External Examiner:
Joachim Liebscher

Cooperation Partner:
Wiener Linien GmbH & Co KG

WIENER LINIEN

FH Zentralschweiz

MSE | MASTER OF SCIENCE IN ENGINEERING