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## Solution-based Innovation - A Method for Emerging Technology Use Case Development

by

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# **SOLUTION-BASED INNOVATION -- A METHOD FOR EMERGING TECHNOLOGY USE CASE DEVELOPMENT**

*Research in Progress*

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## **Abstract**

*Interest in blockchain is growing rapidly and at a global scale. The potential to disrupt various industries is attributed to the emerging blockchain technology. Organizations and institutions have thus begun to examine the emerging the technology and its impact on their businesses. However, researchers and practitioners still lack a systematic approach to understand the potential of blockchain and to develop convincing use cases. We addressed this research gap by applying an action design research approach and situational method engineering to propose a method for the development of blockchain technology use cases. Following this approach, we iteratively evaluate and further develop the proposed method through application in four distinct industries. In a next research step, we now focus on a broader context and evaluate if our existing use case development method is applicable for other emerging technologies than blockchain. By doing so, we seek to broaden our evaluation, generalize our method, and support practitioners and researchers in better leveraging the opportunities of continuous digital transformation.*

*Keywords: Action Design Research, Blockchain, Innovation Management, Use Case Development.*

# 1 Introduction

Advocates of blockchain technology believe that the technology could disrupt various industries, businesses, and processes. Critics, on the other hand, argue that blockchain is a solution in search of a problem (Glaser, 2017). While both arguments present their respective merits, it is true that various industries struggle to understand the benefits and limits of blockchain and often search for convincing use cases (Iansiti and Lakhani, 2017). To address these challenges, we developed a blockchain use case development (BUD) method that can support industry in understanding and evaluating blockchain technology (Fridgen et al., 2018). We built our BUD method iteratively from a series of workshops with practitioners from various industries. As indicated in Figure 1, our BUD method starts with an introduction to the technological basics as well as opportunities and limits of blockchain systems. We subsequently encourage participants to derive from the inputs provided and their particular functional expertise suitable use cases for blockchain technology. We follow-up with a presentation of blockchain applications currently explored in the participants' own and closely related industries. We then encourage participants to refine their previously developed use case ideas in a group setting. Together, we then structure, evaluate, and rank the refined use cases. Participants can subsequently decide to pursue the best idea during a proof-of-concept or pilot project.

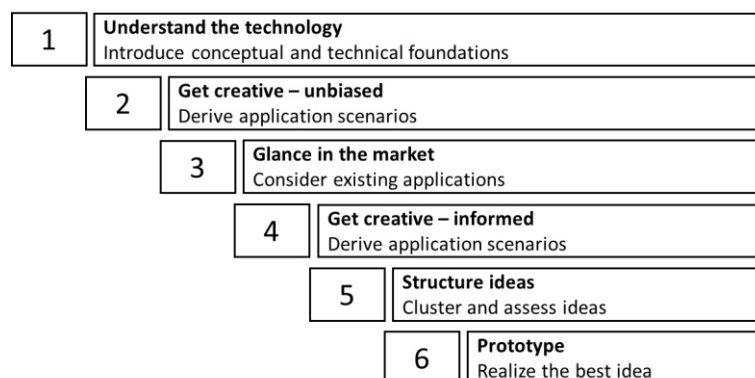


Figure 1: Blockchain Use Case Development Method

Our methodological approach is based on action design research (ADR) (Sein et al., 2011) and situational method engineering (SME) (Braun et al., 2005). We engaged a joint team of researchers and practitioners for the Alpha-Cycle of ADR (Sein et al., 2011). As the objective of our research is to validate and generalize the BUD method, we conducted further Beta-Cycles with practitioners from various industries.

We recently submitted our BUD method development paper to the 24th Americas Conference on Information Systems. In a next step, we would like to further validate our BUD method and analyze its applicability for other emerging technologies than blockchain. Meanwhile, we evaluated and validated said method through blockchain workshops where we utilized and refined our method. Through our next research step, we try to answer the following research question:

*Is the existing use case development method applicable for other emerging technologies than blockchain?*

To answer the stated question, we aim at conducting expert interviews and workshops in the field of artificial intelligence, robotic process automation and virtual reality.

## 2 Outlook and next steps: Applicable to more than Blockchain

Based on the presented results, we believe that our BUD method can support various industries in better understanding blockchain technology and in identifying use cases worth addressing in proof-of-concept

and pilot projects. It helps to understand what blockchain can do but also – and sometimes more importantly – what the technology cannot. Our method seeks to channel creativity and not to advocate adoption of blockchain technology were better technological options exist.

Based on its general nature, we believe that our BUD method holds intriguing potential also for other disruptive digital technologies that are yet to come. Going forward, we thus seek to broaden our evaluation, generalize our method, and support industry in better leveraging the opportunities of continuous digital transformation. Finally, we hope to embrace further emerging technology with the use case development method that we yet just proved with the blockchain technology as starting point.

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