Applying Site Reliability Engineering for providing Hybrid Cloud Services at Swisscom

Degree programme : EMBA Innovation Management

Hybrid cloud environments are a reality in many enterprises today, confronting IT departments with more complex solutions and new reliability challenges. Site Reliability Engineering (SRE) offers modern answers to those challenges. As a managed cloud services provider, Swisscom (Switzerland) Ltd. has to master the essential SRE principles to support its customers in a hybrid cloud context. However, what are the key-challenges when offering SRE as a service to cloud customers?

Problem Statement

The flexibility to combine the best aspects of the various cloud platforms makes hybrid cloud solutions an appealing choice. Enterprises are gradually investing not just in a single cloud provider but often into global public and private cloud products at the same time. The resulting solutions place high requirements on their IT departments, confronting them with much more complex solutions. Next to the increased know-how demands, the IT departments must deal with a lot more governance and reliability aspects to finally have their landscape under control. As a managed cloud services provider, Swisscom is adopting SRE principles and practices to support its hybrid cloud customers in their challenges. However, offering SRE as a service externally to customers differs in many aspects from using it internally for its own scalable and reliable operations.

Objectives

The objective of the master thesis was to develop an overview of the distinct fields of action to successfully introduce SRE as a service for supporting hybrid cloud customers. Based on those fields, the thesis had to derive a concrete and prioritized action plan at Swisscom's hand, which can be taken as the basis for an implementation roadmap. Based on the initial problem statement, there were three core questions to research:

- How to establish a successful SRE engagement model between SRE teams, hybrid cloud customers, and cloud platform/service teams?
- How to effectively grow the SRE engagements to a higher number of hybrid cloud customers without linearly scaling the SRE organization?
- What is the impact of an SRE-based support model on the traditional IT service management processes?

Results

As a result of the thesis, a generic SRE customer engagement model has been developed based on a literature review, expert interviews, and case study analysis. The model addresses the initial research questions through a set of principles and practices and a distinct service design in the form of a structured engagement process. As a second result, a concrete action plan transfers the generic model into Swisscom's context and shows how the SRE service can be established in four phases.

Discussion

Using SRE principles and practices for providing hybrid cloud services offers a well-documented methodology to start from. However, the discipline is still emerging and does not yet cover all the aspects of providing SRE services to customers in detail. Therefore, understanding how teams can collaborate successfully over company borders is the key to transfer SRE into the customer context. Consequently, the foundation for a successful engagement is a close collaboration between the teams with shared ownership for the service's reliability, periodic alignment, and a strong commitment to improve and learn on both sides. Through investment into a distinct onboarding phase with defined maturity targets, reliable standard building blocks, and self-service capabilities, the SRE team can scale over multiple customer engagements in the long run.

Operating a service with high reliability does not come for free. In the end, every cloud consumer will have to deal with reliability concerns, especially in a hybrid cloud use-case.

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