



Continuous Experimentation in the B2B Domain: A Case Study

Olli Rissanen, Jürgen Münch

RCoSE 2015

Overview

- Problem and research goals
- Approach
- Findings
- Conclusion
- Future research

Problem

Digitalisation is greatly increasing the amount of software being produced. However, the return-on-investment of products and features is often unclear, and evaluation itself might be expensive.

- Missing knowledge on what customers value
- Development ideas based on guesswork
- Only generic methodologies available

80% of the time you/we are wrong about what a customer wants. -Avinash Kaushik, Ex Director of Web Research & Analytics, Intuit

Netflix considers 90% of what they do to be wrong. -Mike Moran, Senior Strategist at Converseon

Characteristics of Continuous Experimentation

- Guide the R&D process by constantly conducting experiments derived from the business strategy
- Test ideas with customers to drive the development process
- Fail fast
- Technical infrastructure that supports designing, executing and analysing experiments

Research goals

- RQ1: What are the B2B specific challenges of Continuous Experimentation?
- RQ2: How does Continuous Experimentation benefit the case company?
- RQ3: How can Continuous Experimentation be systematically introduced in the B2B domain?

- Problem and research goals
- Approach
- Findings
- Conclusion
- Future research

Approach

Case study analysis paired with literature review:

- A software company operating in the B2B domain, with two different products
- Semi-structured interviews with 2 teams and management working with the products
- Developers, managers, team leaders

Interview topics:

- Development process
- Deployment process
- Interaction with customers
- Properties of the software products
- Future ways with continuous experimentation

RQ1: Use interviews and available literature to map the first set of challenges

RQ2: Match benefits of the approach from literature to problems found in the case company

RQ3: Map the Fagerholm et al. model of Continuous Experimentation to the case company and identify deviations

Context

Medium-sized Finnish consulting and software company that specialises in customer data management.

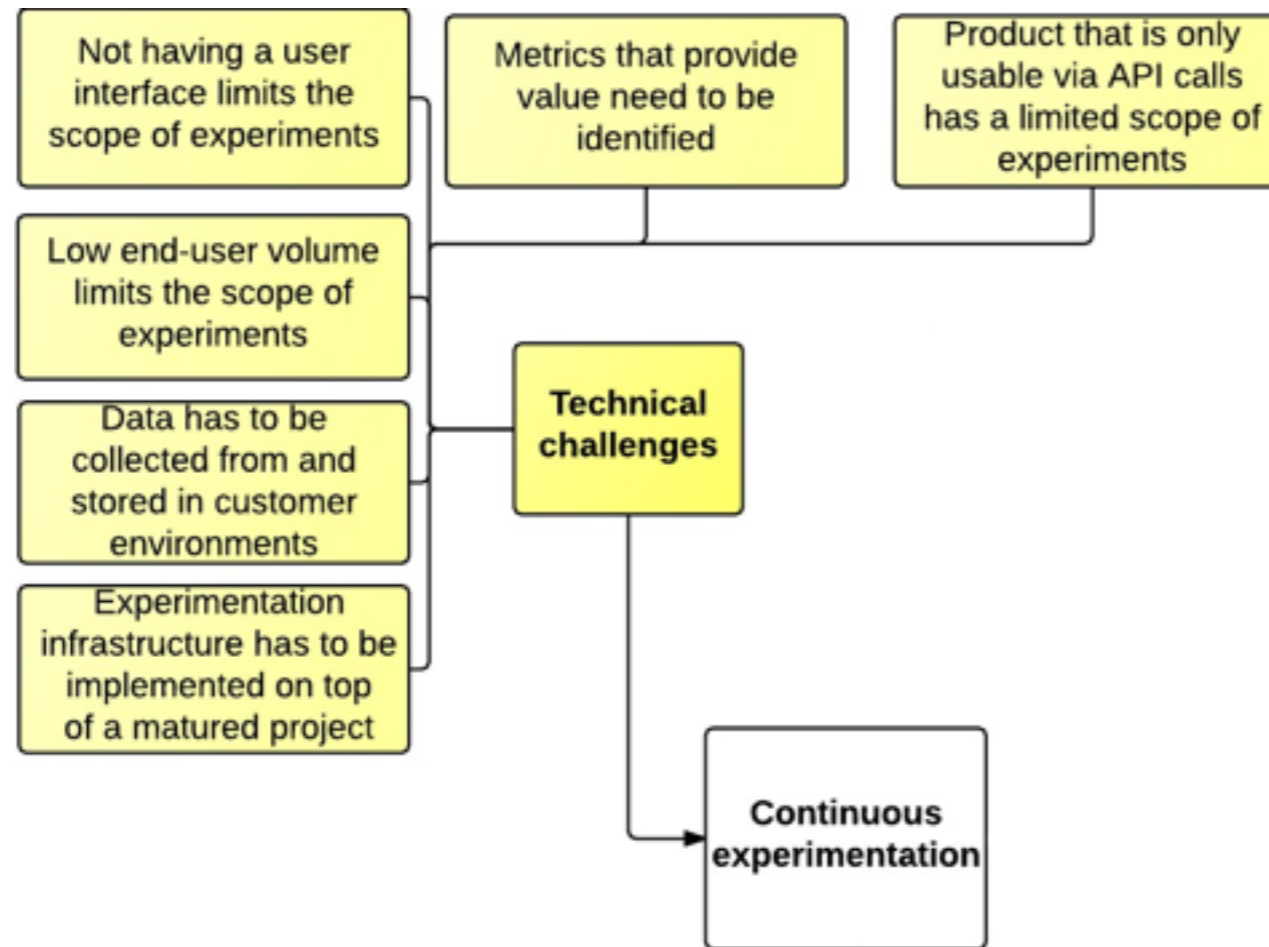
Two mass-market software products with customisable features: Dialog and CDM.

- Dialog: a marketing automation
 - Extensive user interface
 - ~5 users per customer
- CDM: Master Data Management software
 - Integrated background application
 - No human users

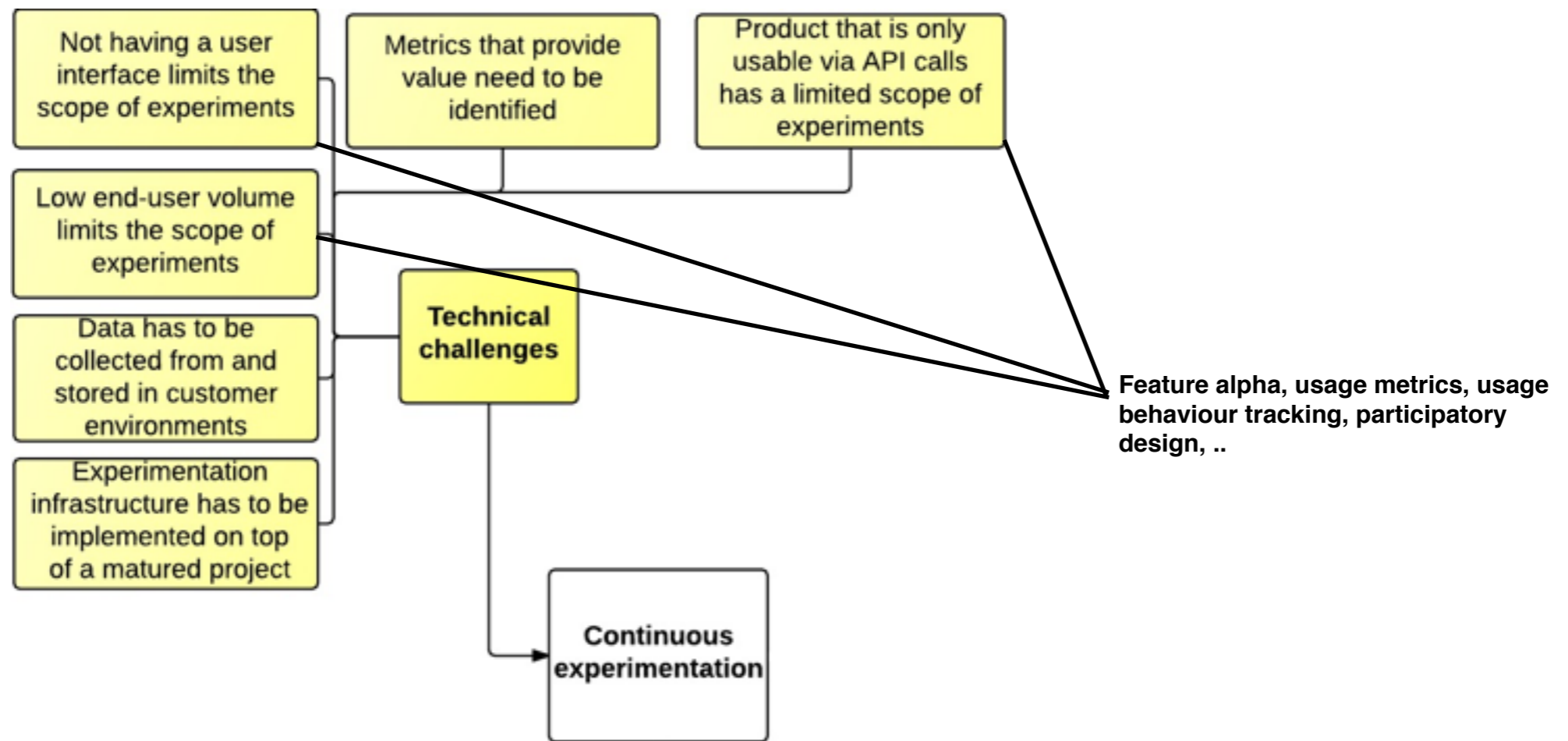
- Problem and research goals
- Approach
- Findings
- Conclusion
- Future research

RQ1: What are the B2B specific challenges of Continuous Experimentation?

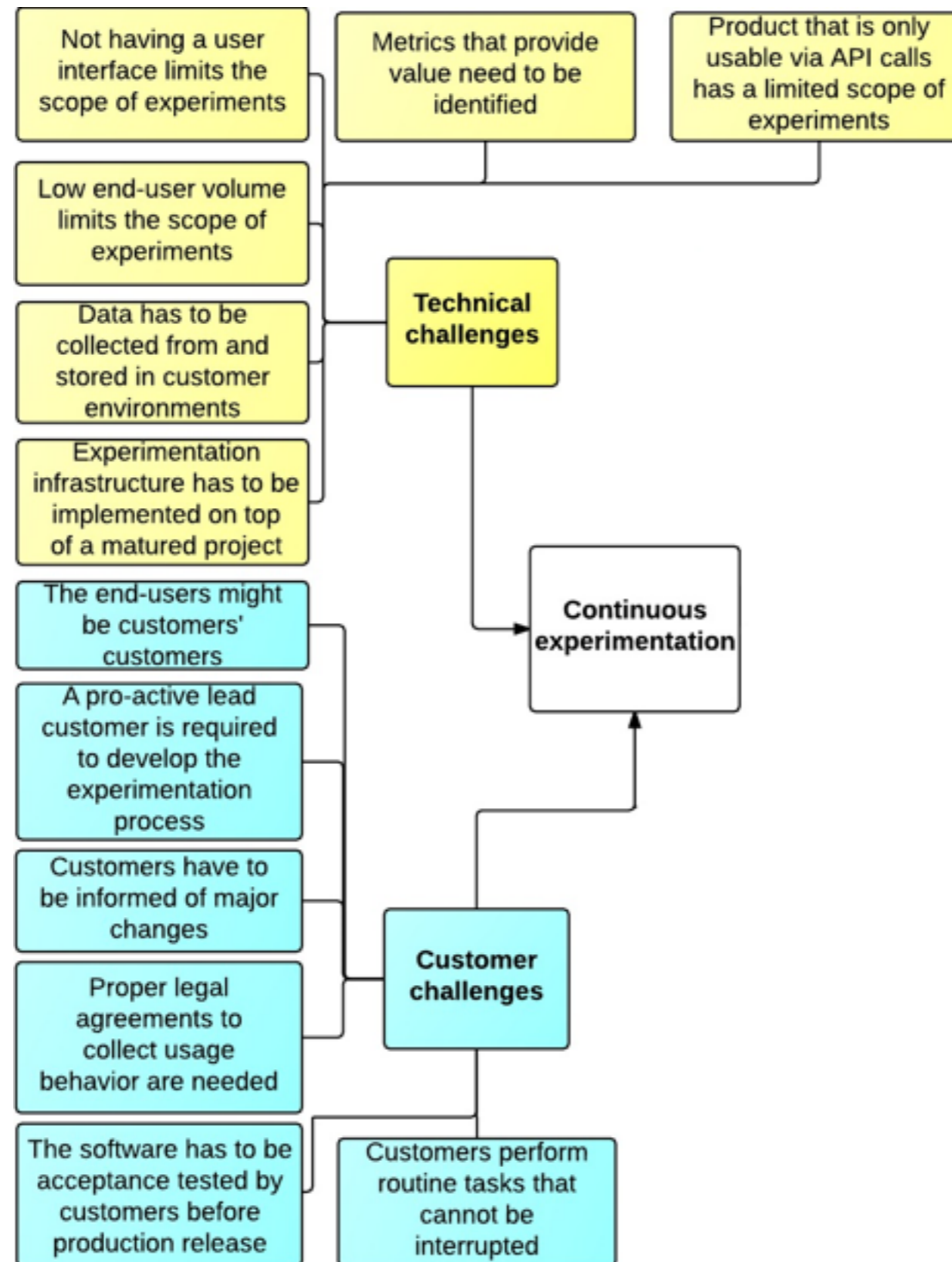
RQ1 findings organised to three areas: technical challenges, customer challenges and organizational challenges



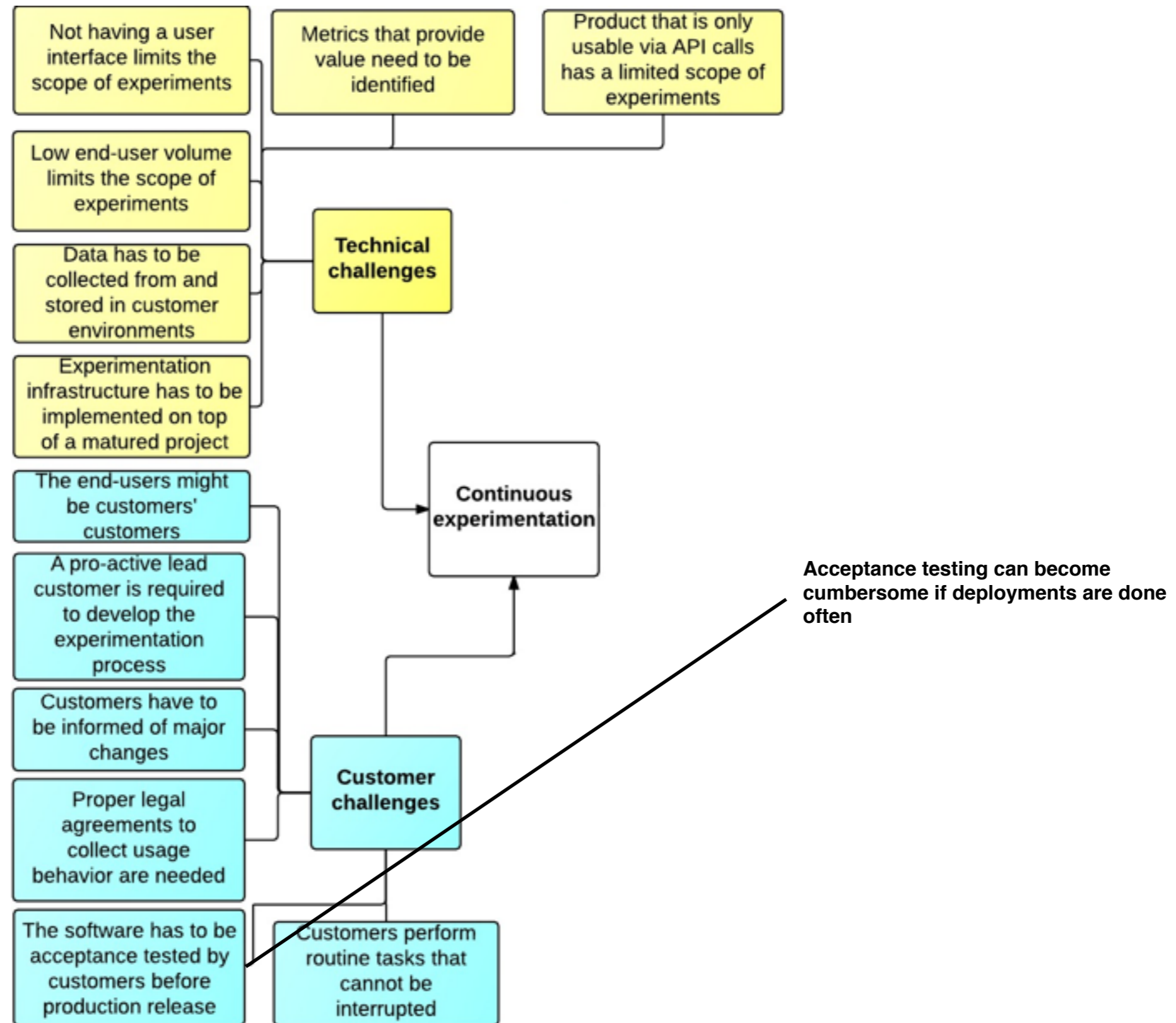
RQ1: What are the B2B specific challenges of Continuous Experimentation?



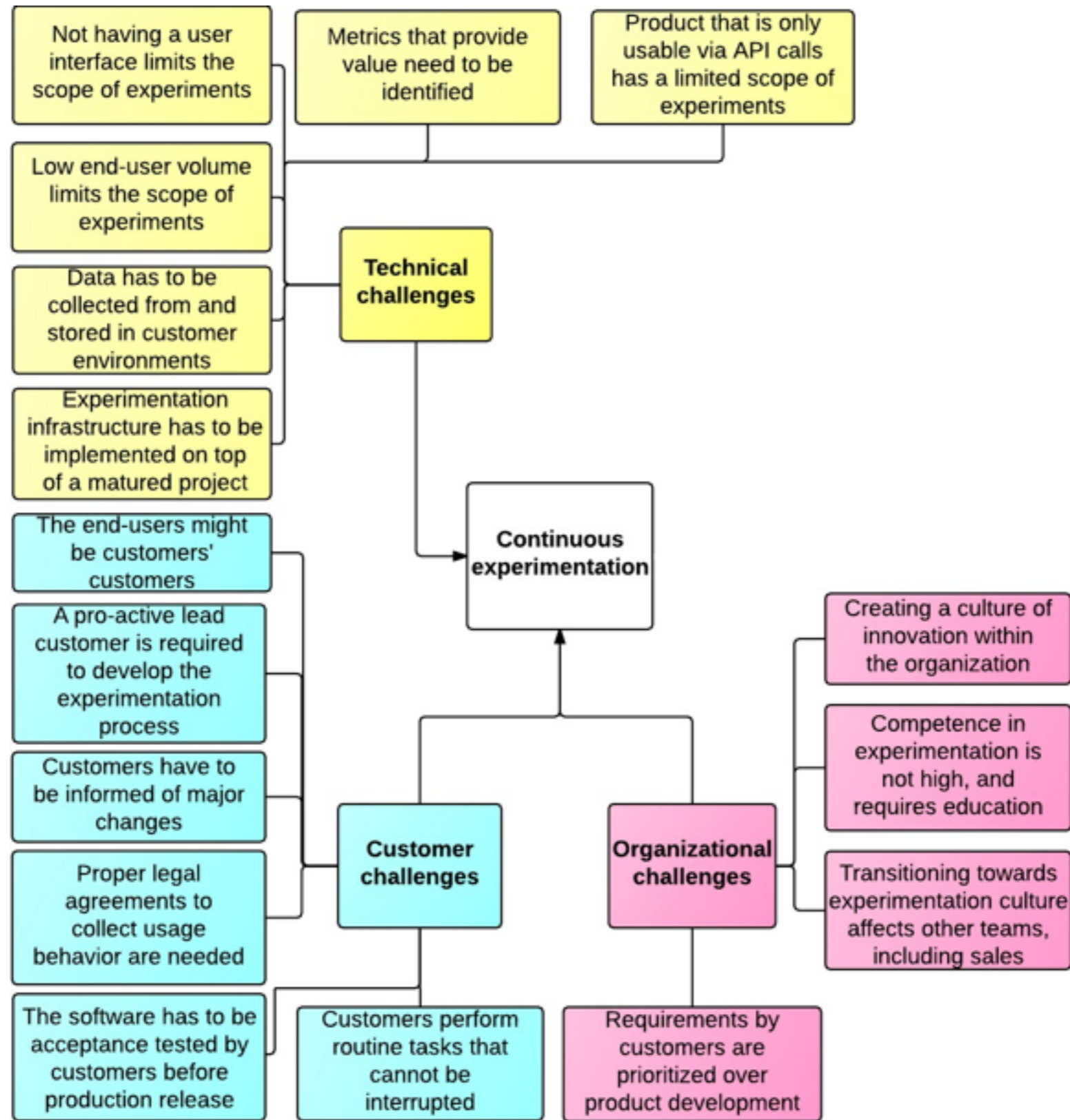
RQ1: What are the B2B specific challenges of Continuous Experimentation?



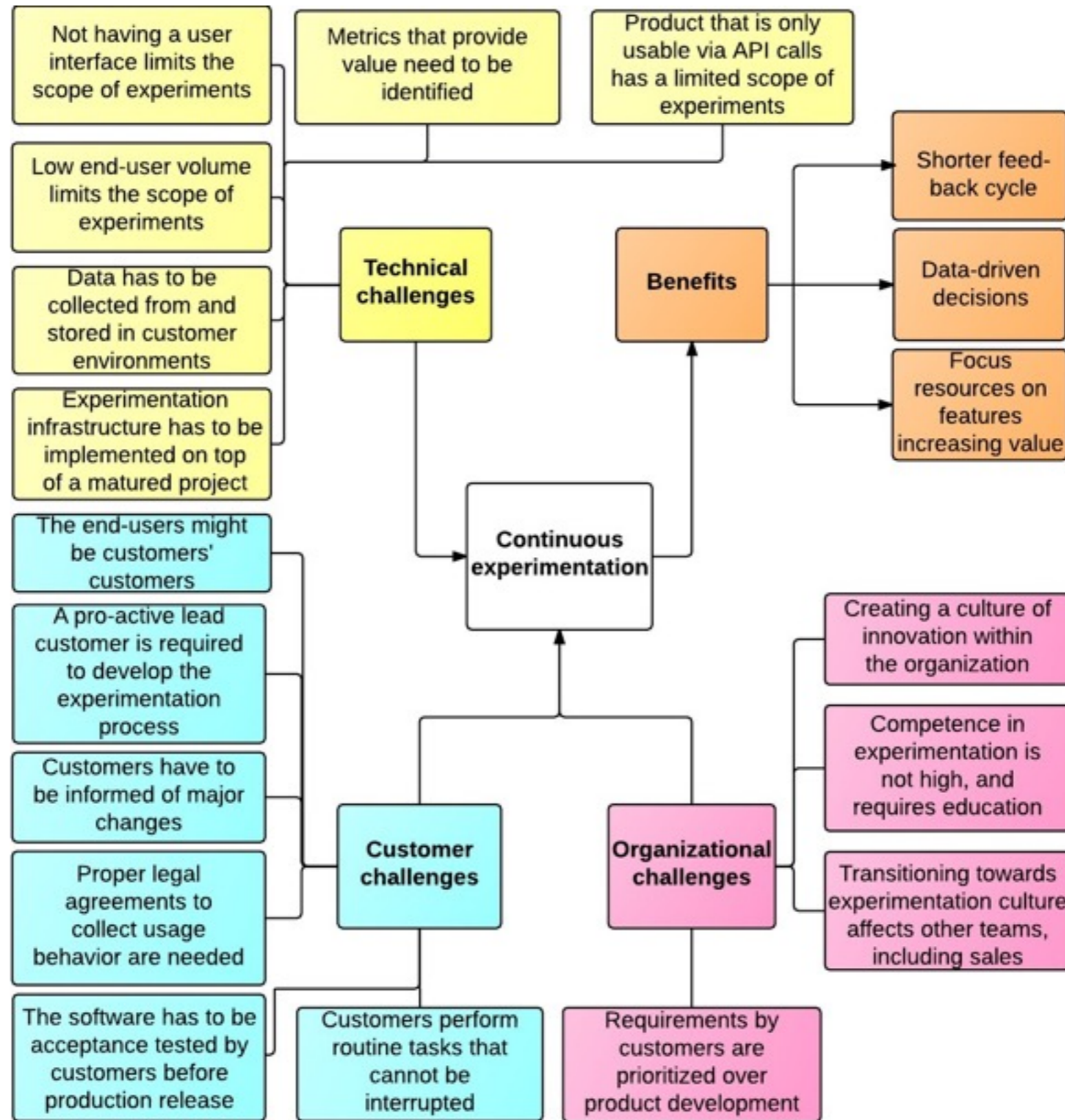
RQ1: What are the B2B specific challenges of Continuous Experimentation?



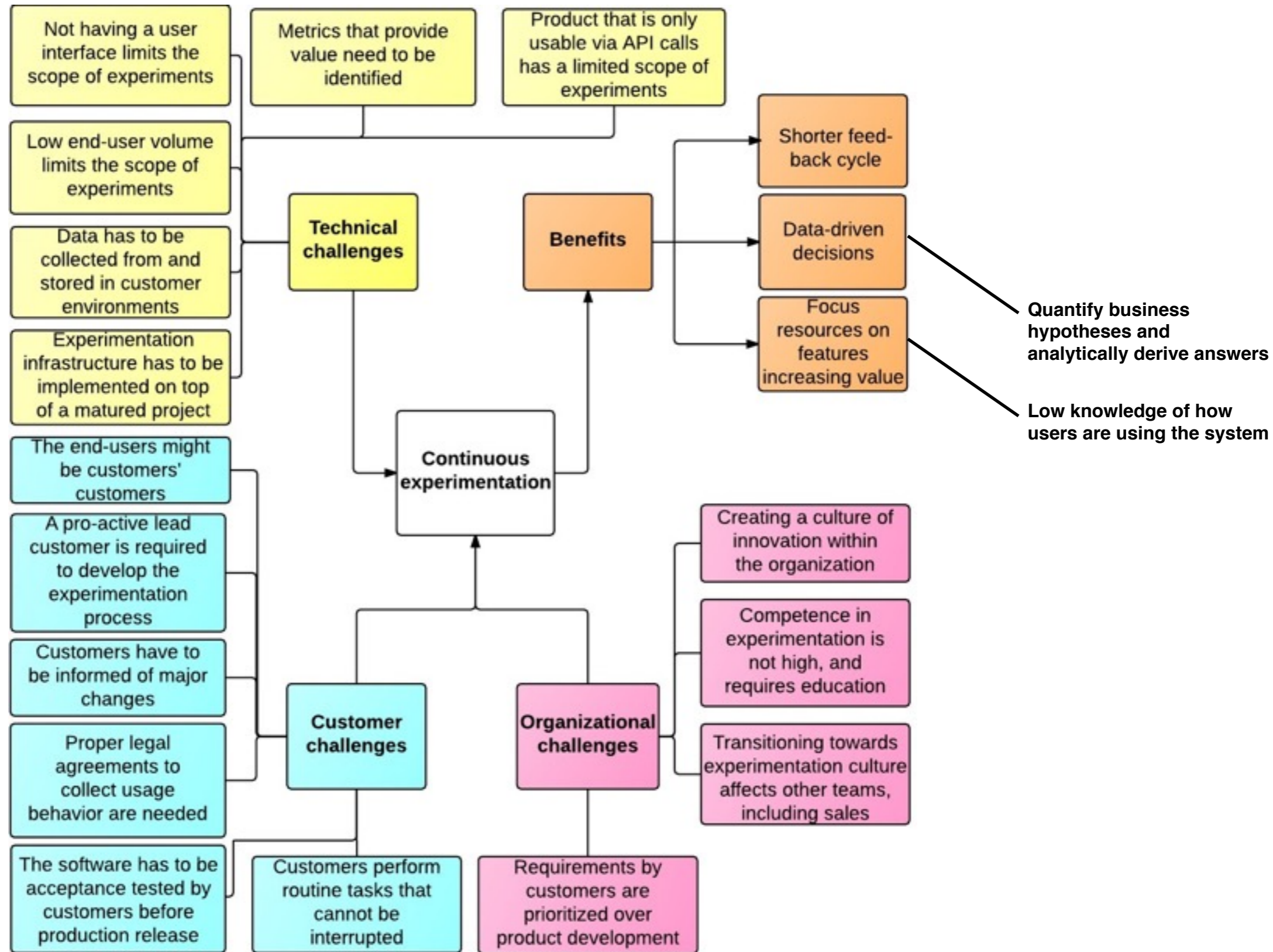
RQ1: What are the B2B specific challenges of Continuous Experimentation?



RQ2: How does Continuous Experimentation benefit the case company?



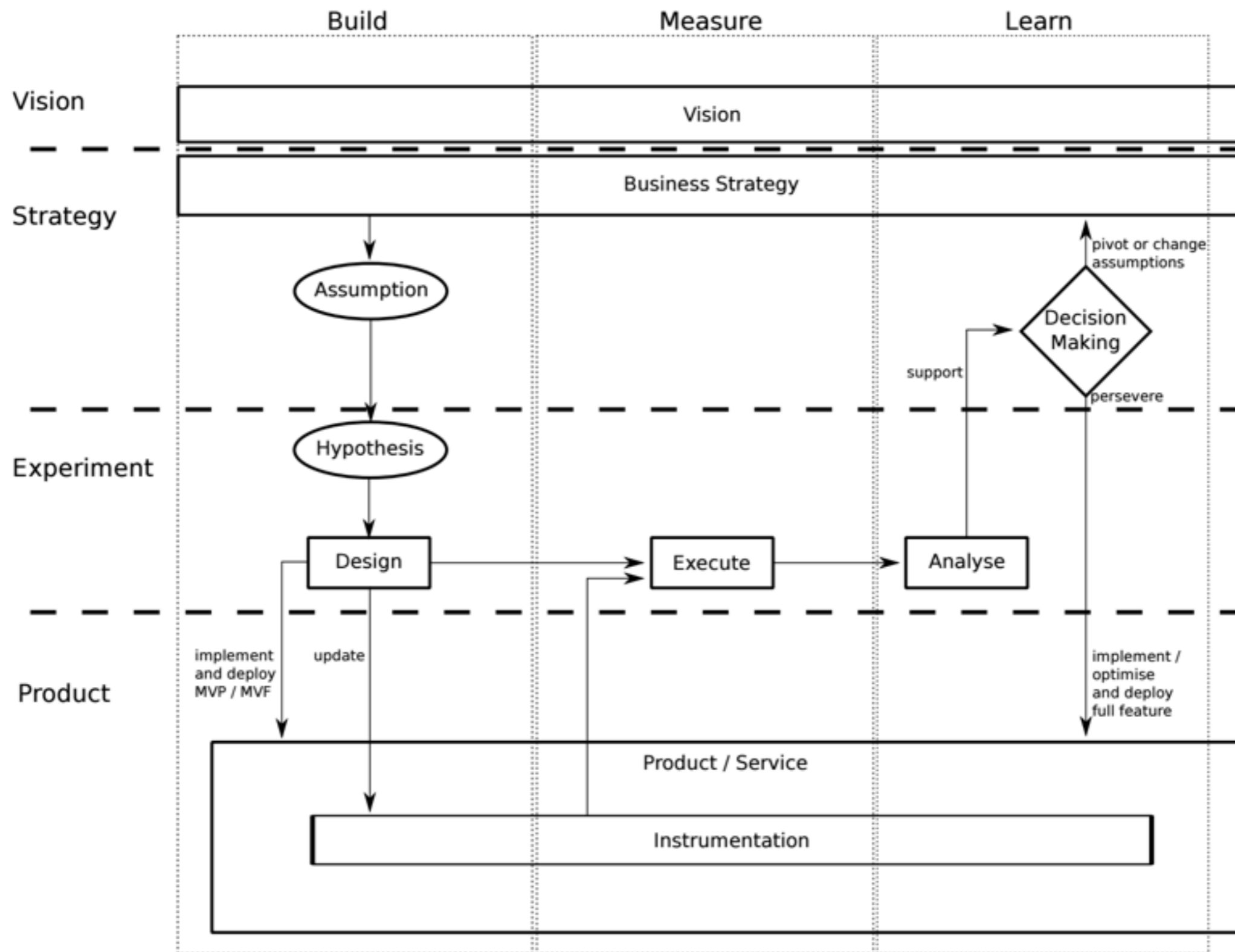
RQ2: How does Continuous Experimentation benefit the case company?



RQ3: How can Continuous Experimentation be systematically introduced in the B2B domain?

Required steps for continuous experimentation

- Finding a pro-active lead customer
- Implementing an infrastructure for experimentation
- Identifying metrics in the software products that increase the value for customer
- Investigating required legal agreements associated with data collection
- Educating employees to increase the competence in experimentation
- Allocating time and resources for product development



Fagerholm, F., Guinea, A. S., Mäenpää, H., & Münch, J. (2014, June). Building blocks for continuous experimentation. In Proceedings of the 1st International Workshop on Rapid Continuous Software Engineering (pp. 26-35). ACM.

Design -> Execute -> Analyse

DESIGN

- Form an assumption from the business strategy
- Form a hypothesis based on the assumption
- + Define the type of the experiment
- + If running a controlled experiment, define an Overall Evaluation Criteria that can be collected and used to provide an answer to the hypothesis
- Implement the MVF or MVP
- Implement the instrumentation to collect the metric

Design -> Execute -> Analyse

DESIGN

- Form an assumption from the business strategy
- Form a hypothesis based on the assumption
- + Define the type of the experiment
- + If running a controlled experiment, define an Overall Evaluation Criteria that can be collected and used to provide an answer to the hypothesis
- Implement the MVF or MVP
- Implement the instrumentation to collect the metric

EXECUTE

- + Deploy the version to user acceptance testing environment
- + Perform acceptance testing in the user acceptance testing environment if necessary, and negotiate the production deployment
- Deploy the version to production environment
- Run the version for a period of time, and collect the data into a database

Design -> Execute -> Analyse

DESIGN

- Form an assumption from the business strategy
- Form a hypothesis based on the assumption
- + Define the type of the experiment
- + If running a controlled experiment, define an Overall Evaluation Criteria that can be collected and used to provide an answer to the hypothesis
- Implement the MVF or MVP
- Implement the instrumentation to collect the metric

EXECUTE

- + Deploy the version to user acceptance testing environment
- + Perform acceptance testing in the user acceptance testing environment if necessary, and negotiate the production deployment
- Deploy the version to production environment
- Run the version for a period of time, and collect the data into a database

ANALYSE

- Upload the data from the database and analyze it through the infrastructure
- Draw conclusions from the data to validate the hypothesis. Based on the validity of the initial assumption, make a decision whether to develop the new feature or product further, keep it as it is, or to cease it and revert back to the unmodified version.

- Problem and research goals
- Approach
- Findings
- Conclusion
- Future research

Conclusion

- Technical challenges are only one part of the challenges a company faces in this transition.
- Customers businesses have unique properties - due to the customisable nature of the products, experiments that provide value for a single customer might not provide as much value for another customer.
- The speed by which experiments with customers can be conducted is relative to the speed by which production deployments can be made.
- Moving towards continuous experimentation requires an organizational culture shift towards an experimental mindset.

- Problem and research goals
- Approach
- Findings
- Conclusion
- Future research

Future research

- How to build an effective back-end infrastructure for experimentation.
- Identify to what extent the core findings of this study can be generalised to other companies working in the B2B domain with different software products.

Reference of the article

Continuous Experimentation in the B2B Domain: A Case Study

Olli Rissanen, Jürgen Münch

<http://www.sserg.org/publications/uploads/2c5388fe73be6af84375b196c8d5b5d097464396.pdf>