Development of Design Guidelines for the IT Support of the Entrepreneurial Process

Master Thesis – Pascal Stegmann – Final Presentation

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Agenda

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1. Motivation
2. Research Question & Approach
3. Theory
4. Empirical Findings of Survey
5. Design Guidelines
6. Conclusion & Future Work

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Motivation

Everyone is chasing innovation

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Brutkasten für Bahnthemen

DB Lab: Deutsche Bahn plant ein Innovationslabor

Wie Siemens seine Mitarbeiter zu Gründern machen will

Caspar Tobias Schlenk am 30. November 2015 | 4 Kommentare

Empfehlen 243 Tweet Share 6 Share 34 G+1 6

Newsartikel. Mit einer „Firma in der Firma" will Siemens seine Mitarbeiter zu Gründern machen. Die Innovation soll abseits der verkrusteten Konzernstrukturen gedeihen.

Siemens-Chef Joe Kaeser will seinen Konzern mithilfe von Startups erneuern.

Innovation Labs

Deutsche Bank will jährlich 500 Startup-Ideen testen

Christina Kyriasoglou am 5. Juni 2015 | 5 Kommentare

Empfehlen 167 Tweet Share 3 Share 18 G+1 3

Newsartikel. Die Deutsche Bank plant, sich mit neuen Technologien weiter zu entwickeln. Wie? Das sollen nun drei neue Innovationszentren gemeinsam mit Startups erarbeiten.

Artikel vor/zurück

Allianz Digital Accelerator geht an den Start – Versicherung sucht neue Geschäftsmodelle

Wie bereits gestern in unserem experimentellen Startup-Ticker berichtet, gibt es einen weiteren Accelerator im Lande. Der neue Accelerator-Mitstreiter hört auf den Namen Digital Accelerator – und gehört zur Allianz. Bereits Ende Juli startete [...]

ds deutsche startups

Alle Startups | Investoren | Events | Jobbörse | Echtzeit

Suche nach Artikeln, Jobs, Events

STARTUPS PEOPLE DEALS KNOW HOW SZENE SOFTWARE & IT GALERIEN VIDEOS

Artikel vor/zurück

Brutkasten-Übersicht

25 Accelerator-Programme, die jeder kennen sollte

Es gibt immer mehr Accelerator-Programm. Für Gründerinnen und Gründer ist diese Entwicklung begrüßenswert, denn nie gab es mehr Auswahl, nie gab es mehr spannende Unternehmen und Initiativen, die ihre Türen für Start-ups geöffnet haben.

Source: deutsche-startups.de, gruenderszene.de

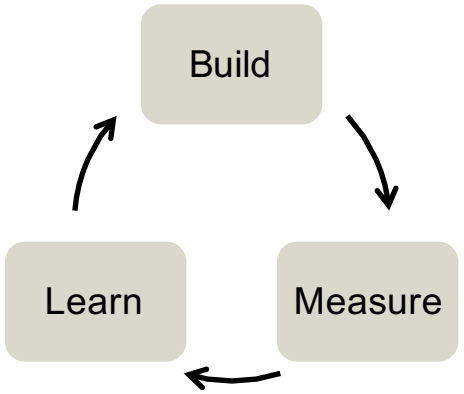
Starting Point

Everything you begin with is a set of assumptions!

Experimentation & Early involvement of customer to generate **Validated Learning**

Basic LS Process (Build-Measure-Learn Cycle)

0. Develop initial set of hypotheses about business/product
1. Build **Minimal Viable Product** (MVP)
2. Measure progress (**Innovation accounting**)
3. Learn from results > **Pivot**, persevere or perish



Goal of LS Approach

Answer the following questions:

Am I going in the right direction? Do I make progress? Should I stop?

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Research question

Motivation

LS promises a structured and replicable approach
to the entrepreneurial process

> Could serve as a starting point for IT support

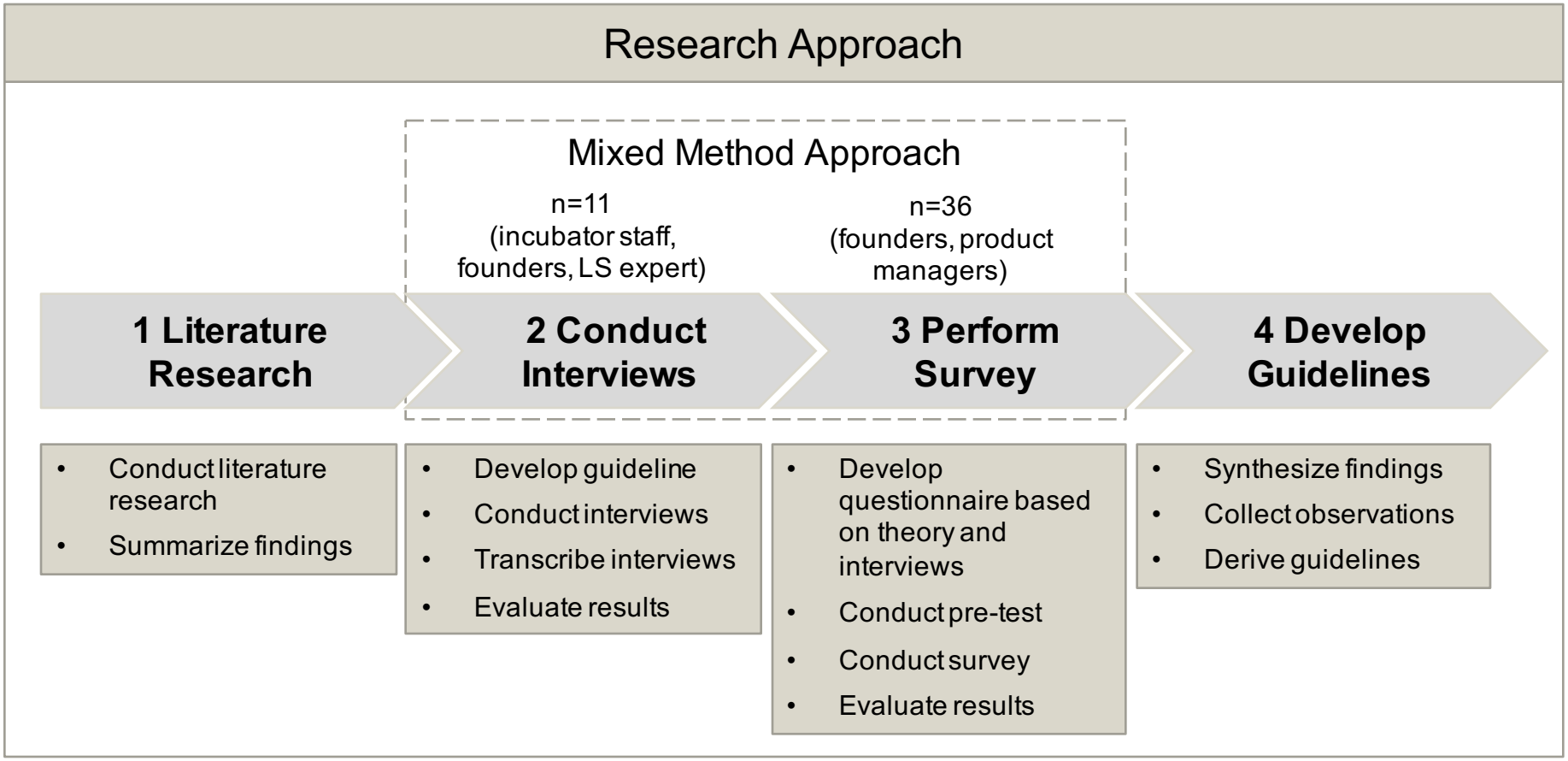
Research Questions

1) What is the state of research on the experimental approach of LS?

2) Practical view on LS
   2.1) What is the LS practitioners' understanding of the LS approach?
   2.2) How do founders implement aspects relevant to the LS approach?

3) What are implications and recommendations for the IT support of the entrepreneurial process?

Research approach



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Theory

State of Research & Planning vs. Learning

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State of Research

- Little published research on evaluating the validity of the LS approach
- Ladd (2016) still unpublished
  - could confirm testing/experimentation works
  - but no linear relationship between testing and success
  - too little but also too much testing is counterproductive

Planning

- Planning is beneficial, though **more relevant for established firms** (Brinckmann et al., 2010)
- Further **lower return** on planning **for small firms** due to more unstructured approach (Brinckmann et al., 2010)
- In **highly dynamic environment**, **spend less** or more focused **time** on planning (Gruber, 2007)

Experimentation/Learning

- Given lack of market or potential customer, **prematurely planning limits flexibility** necessary to succeed (Midler and Silberzahn, 2008)
- Focus on **exploration/experimentation**, incremental learning and adapt to uncertain environment

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Understanding
Popularity and Success

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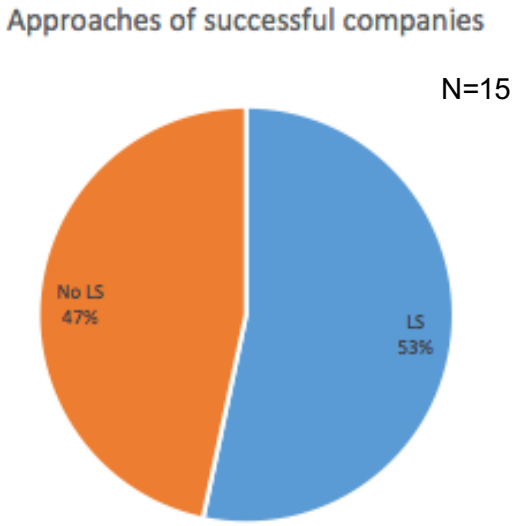
Popularity

Out of surveyed people

- 74% are familiar
- 66% try to apply it
- 100% of those applying it would recommend it to others

Success



Success being defined by

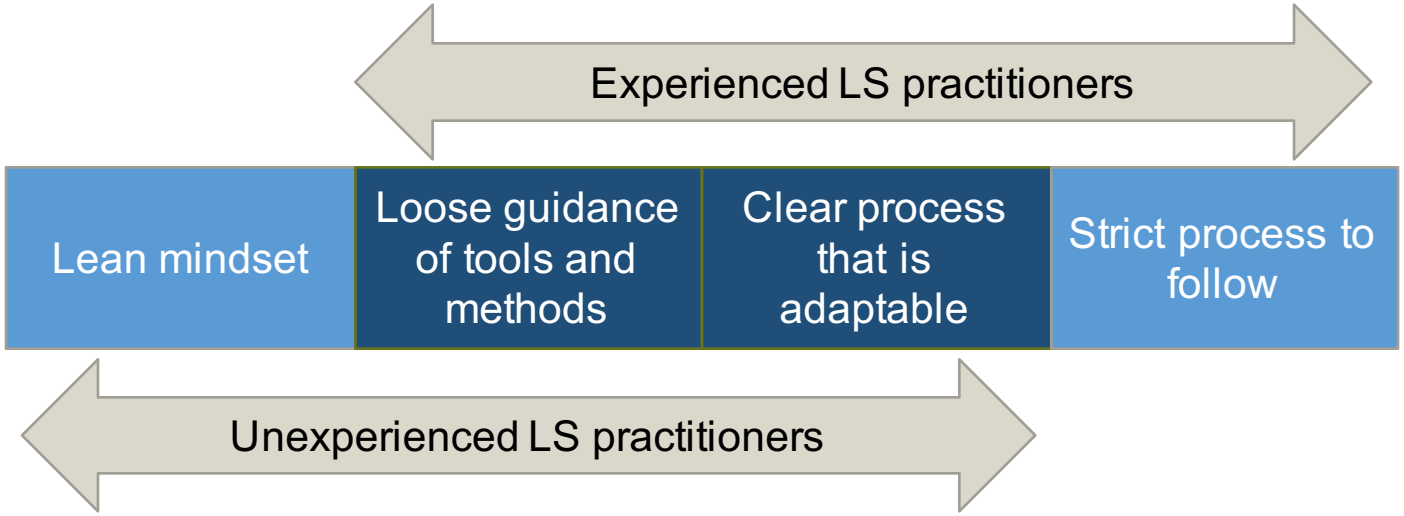
- Receiving institutional investments
- Being post product/market fit

> No clear indication that successful startups rely more on LS (50% used it)

Understanding

Ambiguity about definition of LS

No clear and common understanding of what LS actually is

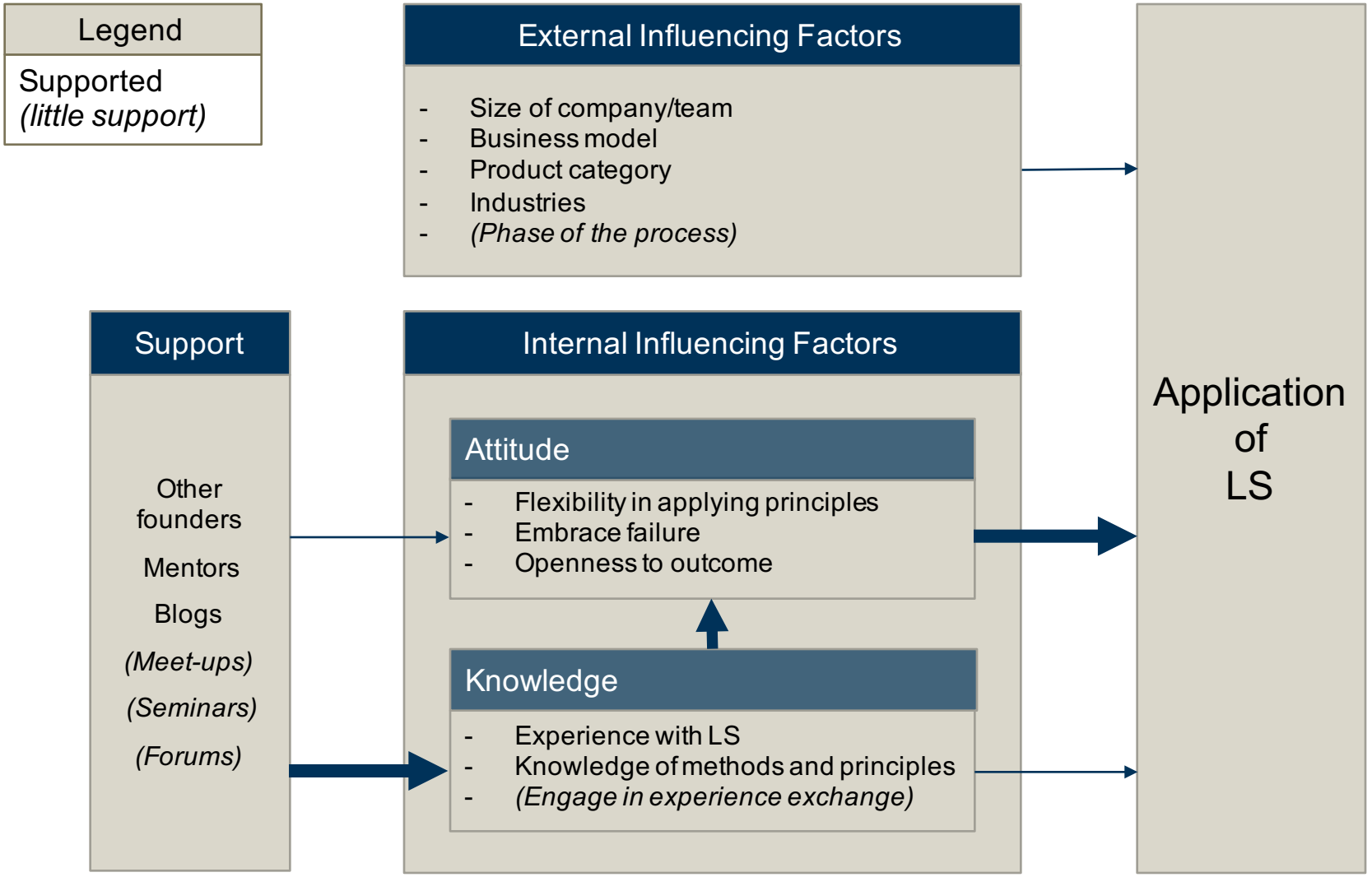


Source: Own illustration

- Majority of respondents in line with moderate interpretation
- Continuum between mere mindset and strict process implies different expectations of possible support > Flexibility required

Understanding

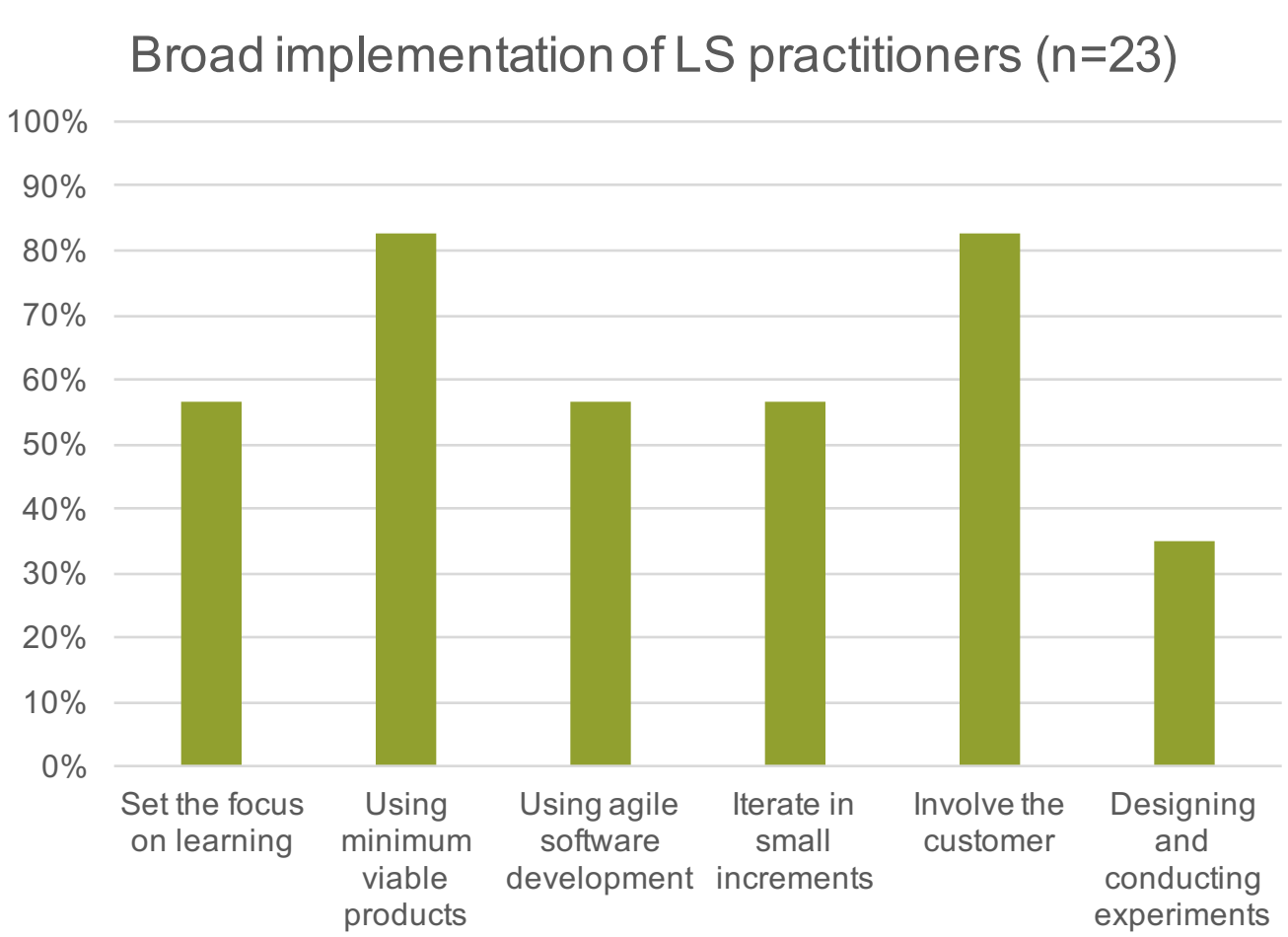
Influencing factors on the application of LS



Source: Own illustration

Implementation

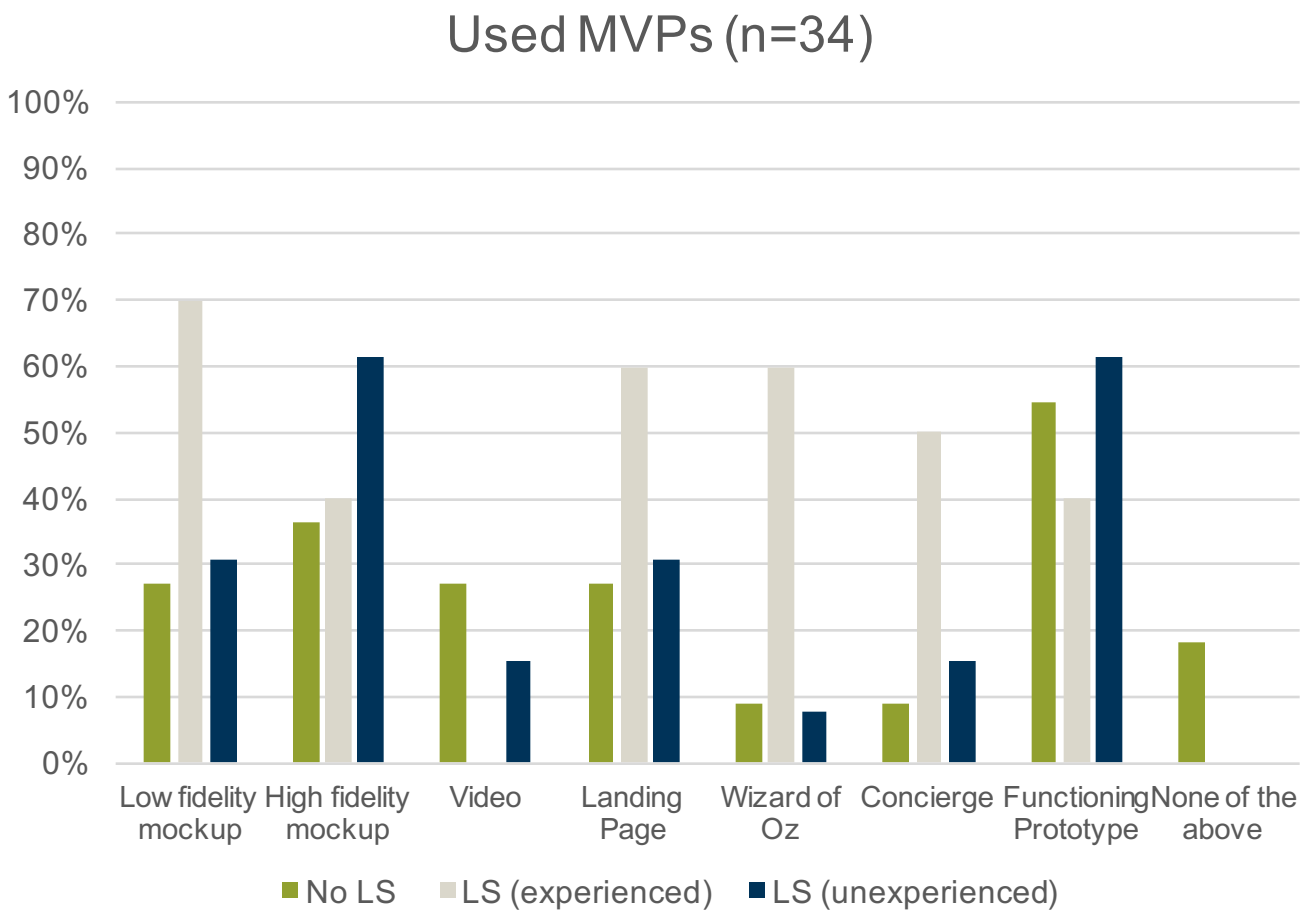
Broad implementation focuses on MVP and Customer Involvement



- Considered easy principles ("Using MVPs" and "Involving the customer") are mostly implemented
- Differentiating factor of running experiments has little support

Implementation

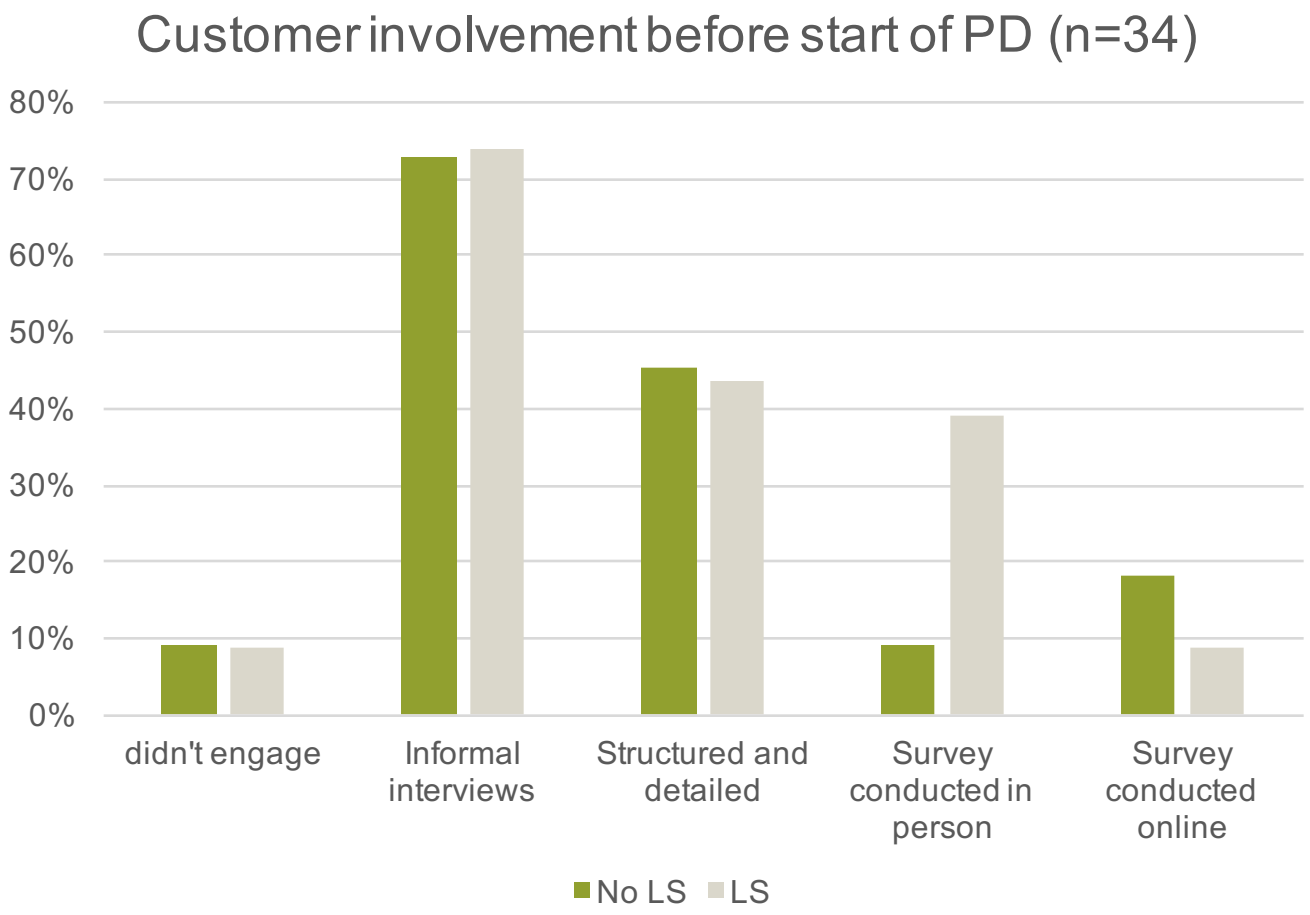
The use of MVPs generally is not a differentiating factor



- No LS (73%) and LS (91%) majority tries to implement the MVP concept
- Differentiation becomes more clear on a deeper level of analysis
- LS experienced apply a broader spectrum of MVPs and engage earlier

Implementation

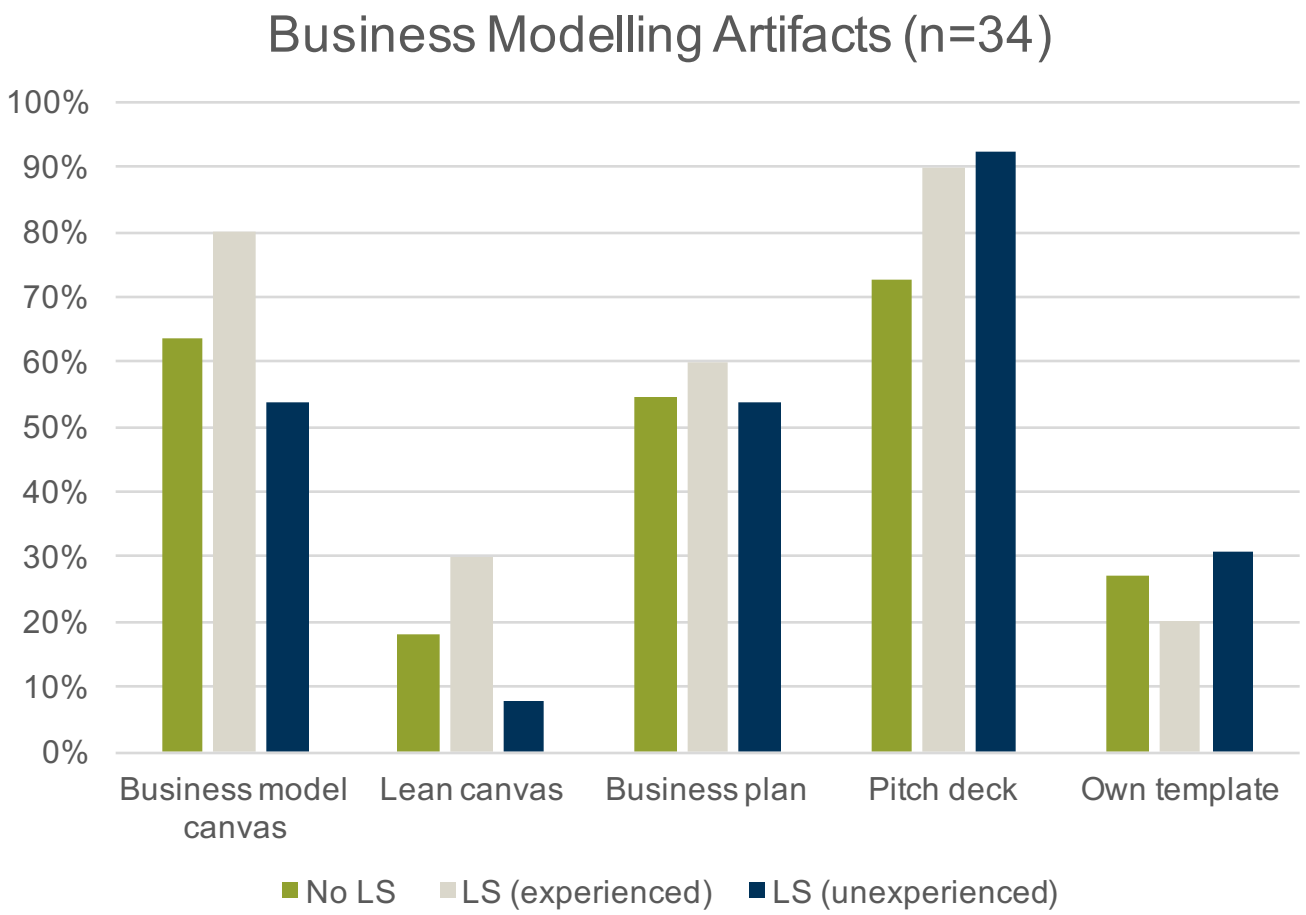
Customer Involvement generally not a differentiating factor



- Involvement before and after start of product development (PD) done by almost all participants > Not differentiating
- Overall focus on informal interviews
- LS use more structured approaches

Implementation

Artifacts – Example for Business Modelling



- Multiple Artifacts used for different purposes
- Pitch deck is important and considered most useful
- BMC not differentiating for LS
- LS specific artifact found little support

Summary
Understanding and Implementation

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Understanding

High popularity

LS is popular but not necessarily responsible for success

Positive Outcome

Applying LS creates a positively perceived outcome despite ambiguous understanding

Ambiguous understanding

Lack of common understanding results in diverse implementations

> LS seems not as instructive and clear in terms of how to implement it

Implementation

Little differentiation

On a high level of analysis little differentiation with regards to implementation, differentiation possible on a more detailed level

MVP | Cust. Inv. | Artifacts | Tools

Lacking experience

Challenges most often refer to problems based on lack of experience and guidance

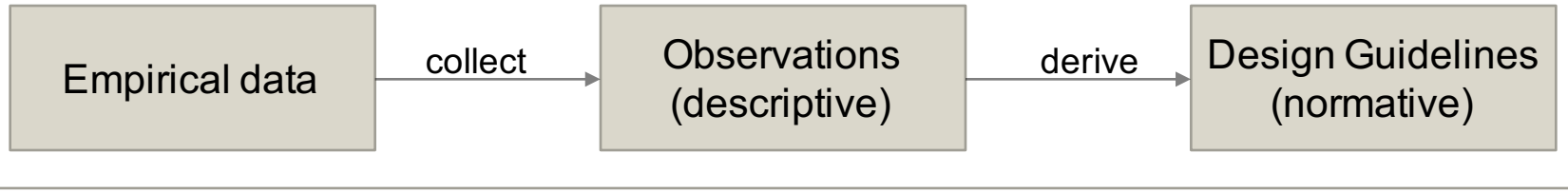
> How do you approach certain aspects is differentiating not what you do

Overall result and further approach

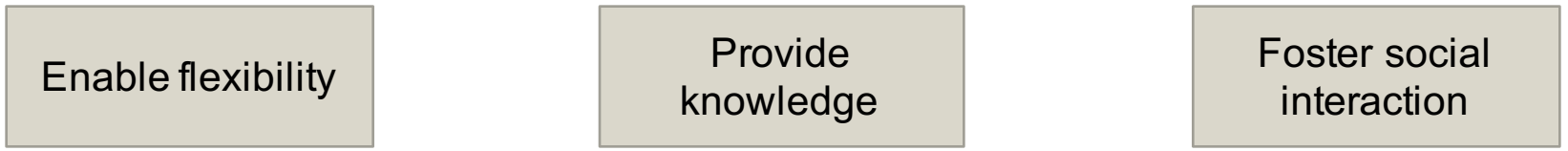
No LS specific support needed
due to lack of common understanding and high-level of analysis

Broaden scope to entrepreneurial process in general

Approach



Broad Areas of Design Guidelines



> More detailed design guidelines derived from collected observations (see next slides)

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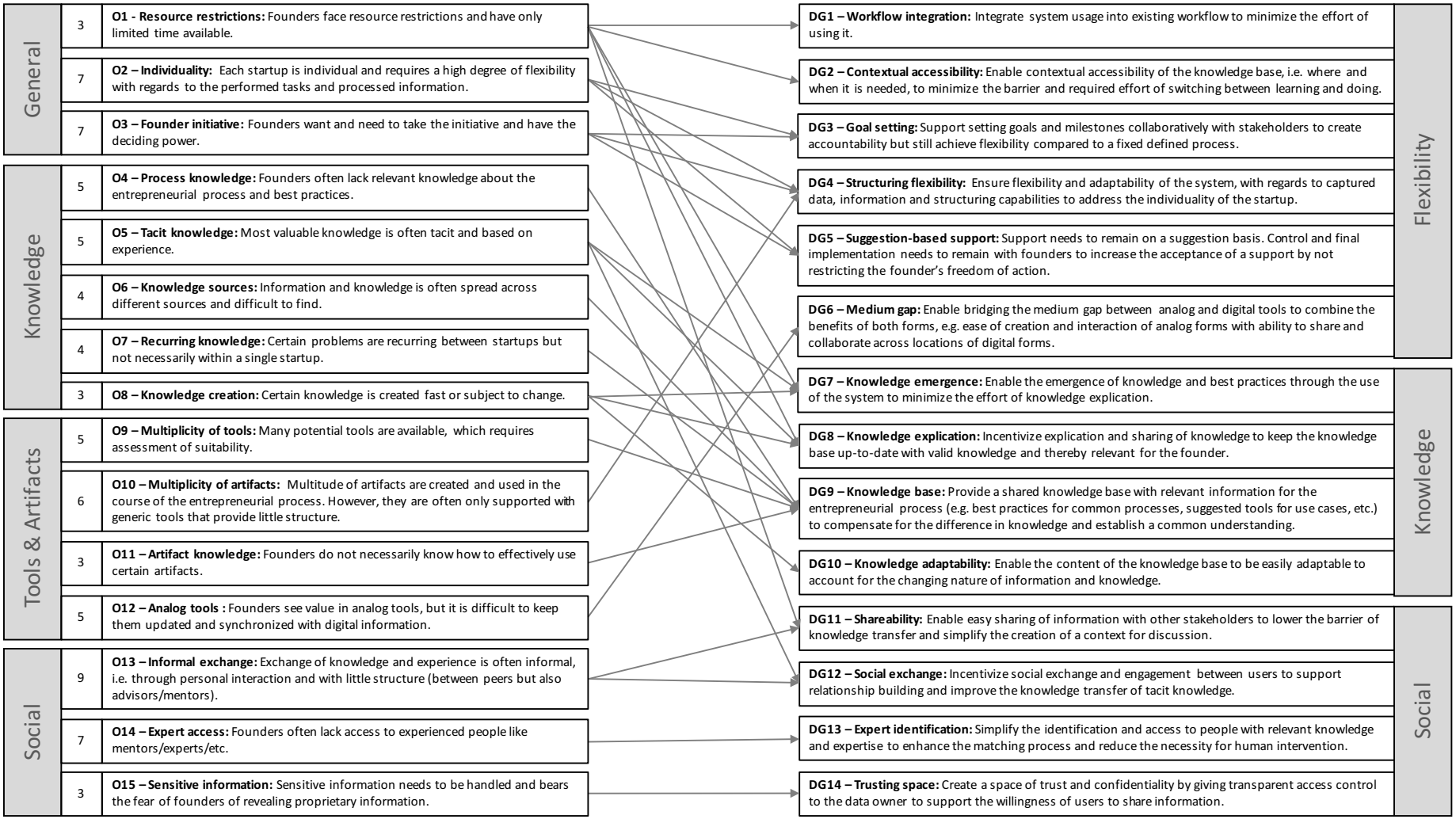
Mapping of observations to design guidelines



Example Design Guidelines

Example Design Guidelines

O2 – Individuality:
Each startup is individual and requires high degree of flexibility with regards to the performed tasks and processed information.

O3 – Founder initiative:
Founders want and need to take the initiative and have the deciding power

DG5 – Suggestion-based support:
Support needs to remain on a suggestion basis. Control and final implementation needs to remain with founders to increase the acceptance of a support by not restricting the founder's freedom of action.

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Conclusion & Future Work

Conclusion

- LS makes sense, but difficult to support
- Potential for support of the entrepreneurial process
- Enable flexibility
- Provide knowledge
- Connect people

Future work

- Account for limitations of research
- Research incentive mechanisms
- Identify stakeholders benefitting the most
- Research technical solutions to proposed guidelines
- Build and evaluate solution

Thank you! Questions?

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Appendix

Motivation

How to find a working business model?

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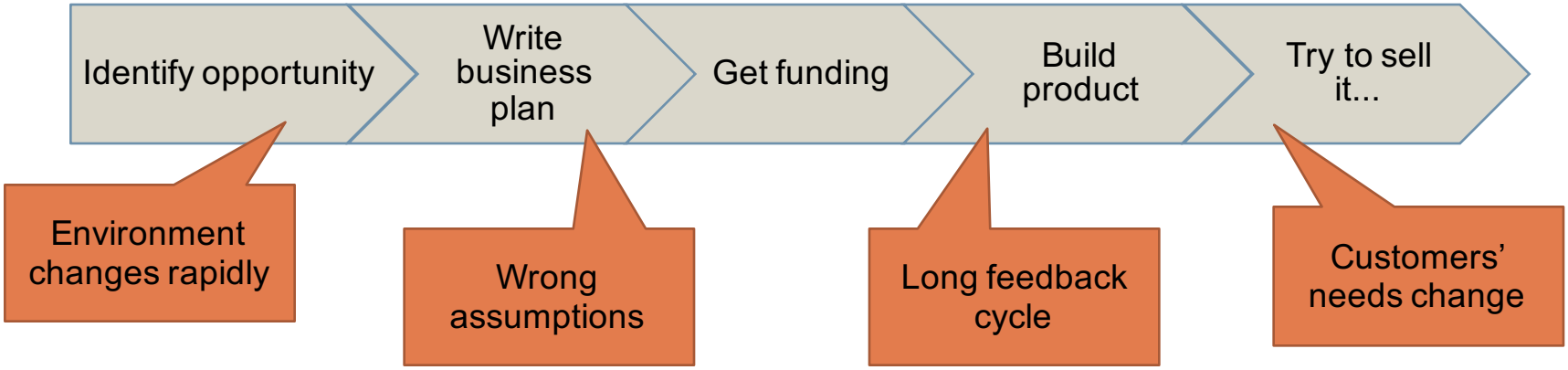
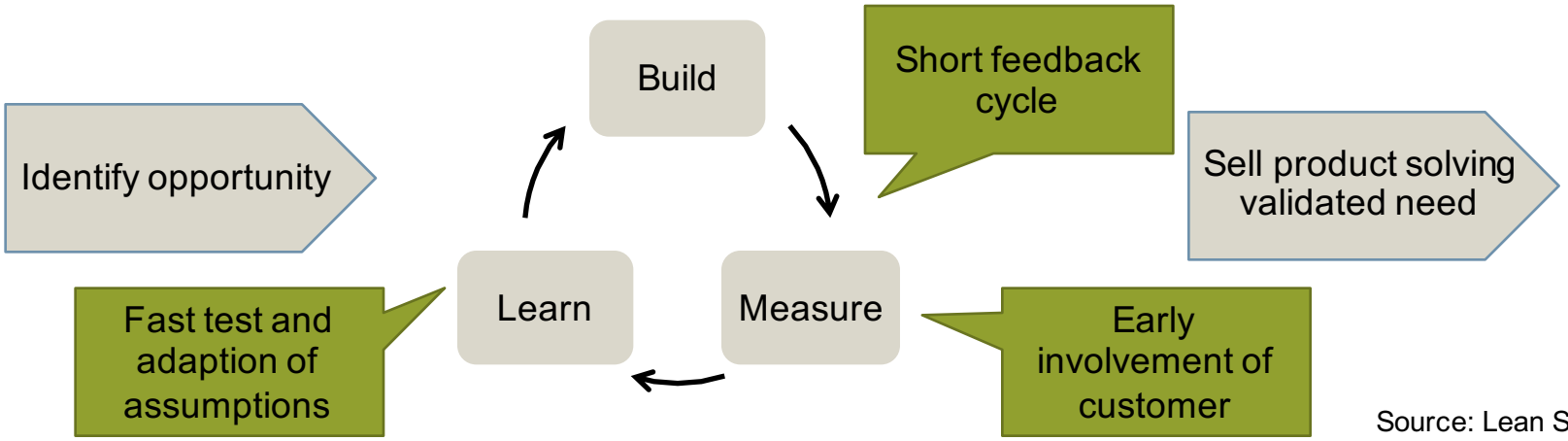
Past



Today



Source: Lean Startup

State of Research

- Little published research on evaluating the validity of the LS approach
- Ladd (2016) still unpublished
  - could confirm testing/experimentation works
  - but no linear relationship between testing and success
  - too little but also too much testing is counterproductive

Foundational Concepts (based on Knight, 1921 and Sarasvathy, 2001)

Risk Outcomes are enumerable and occur with a certain probability	vs.	**Uncertainty** Outcomes are not knowable
Causation Set a goal and plan the necessary steps and means to get there	vs.	**Effectuation** Assess available means and combine them to a valuable product

Theory
Planning vs. Learning

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Planning

- Planning is beneficial, though **more relevant for established firms** (Brinckmann et al., 2010)
- Further **lower return** on planning **for small firms** due to more unstructured approach (Brinckmann et al., 2010)
- In **highly dynamic environment**, **spend less** or more focused **time** on planning (Gruber, 2007)
- Assumption that prediction is to a certain degree possible

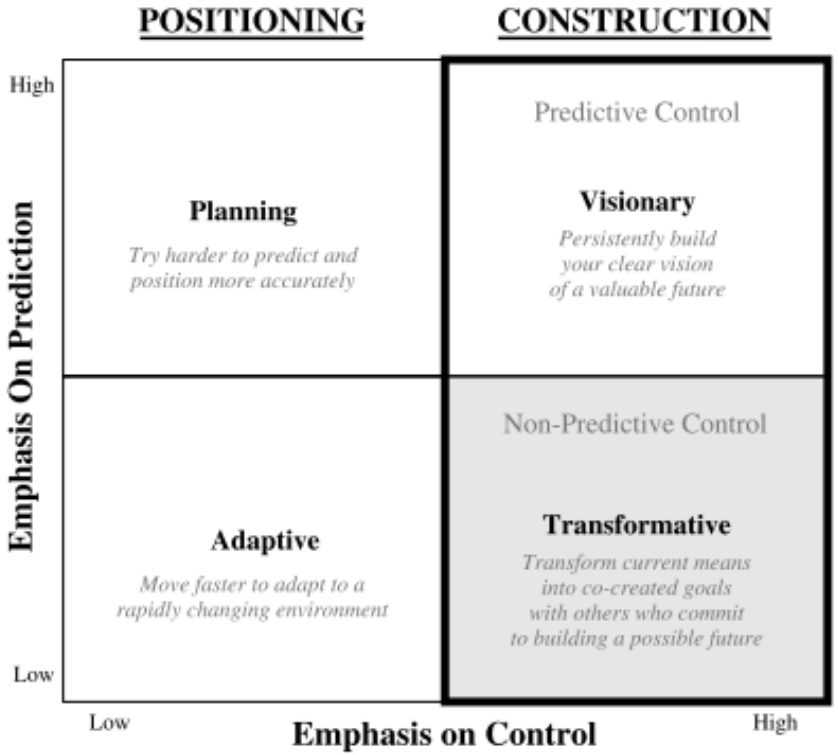
Learning

- Given lack of market or potential customer, **prematurely planning limits flexibility** necessary to succeed (Midler and Silberzahn, 2008)
- Focus on exploration/experimentation, incremental learning and adapt to uncertain environment

> Both ideas follow a **positioning approach**, i.e. taking the environment as given

Framework for strategies to deal with uncertainty (Wiltbank et al., 2006)

- **Positioning**: "to the degree that I can predict the future, I can control it"
- **Construction**: Prediction and control are independent
  - Visionary approach
  - Transformative approach (effectuation)



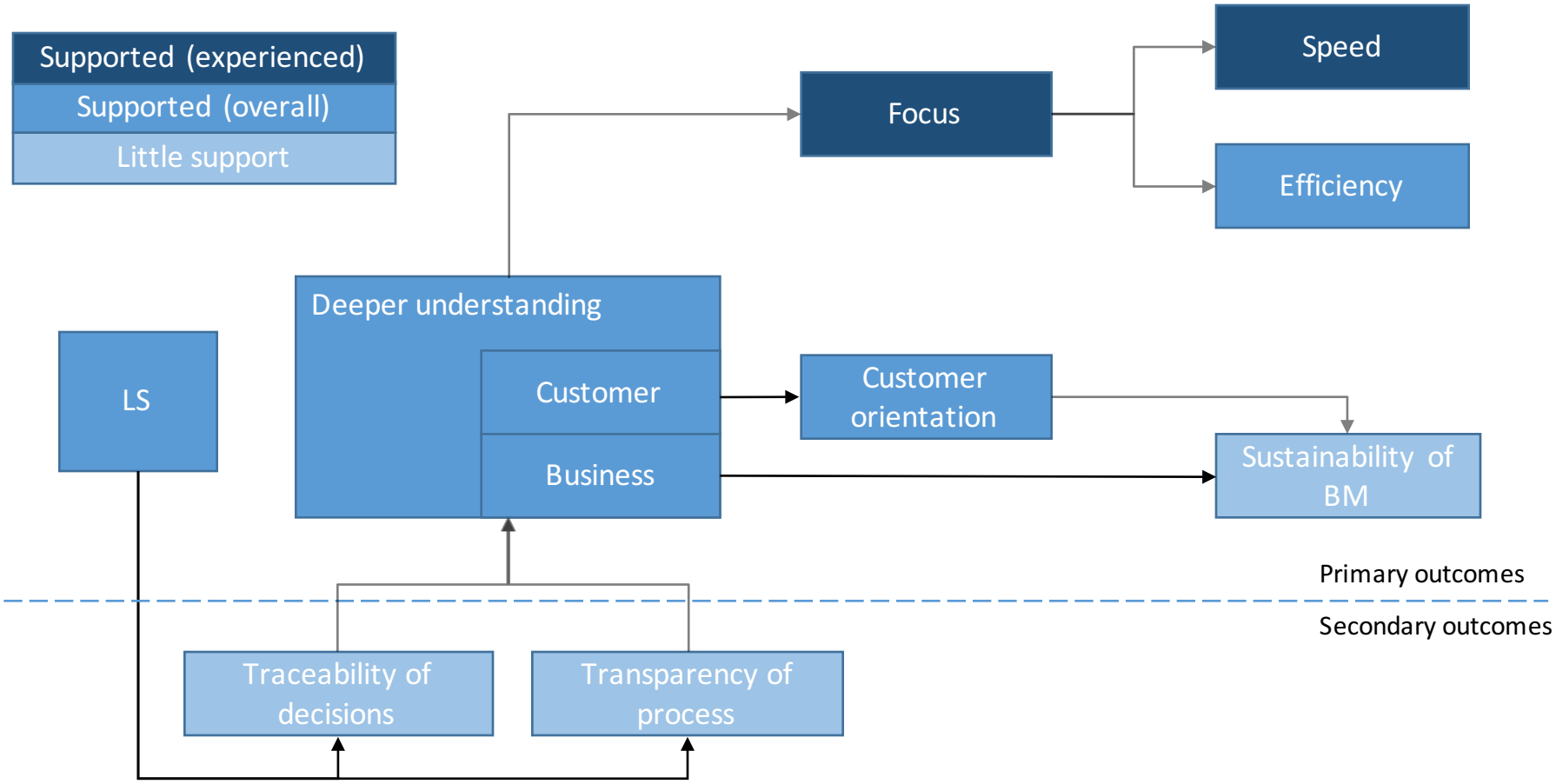
Source: Wiltbank et al. (2006)

> Iterative, experimental approach of LS is supported by research
> Considering concept of effectuation, the notion of LS could put more emphasis on mindset than on adapting/reacting

Understanding

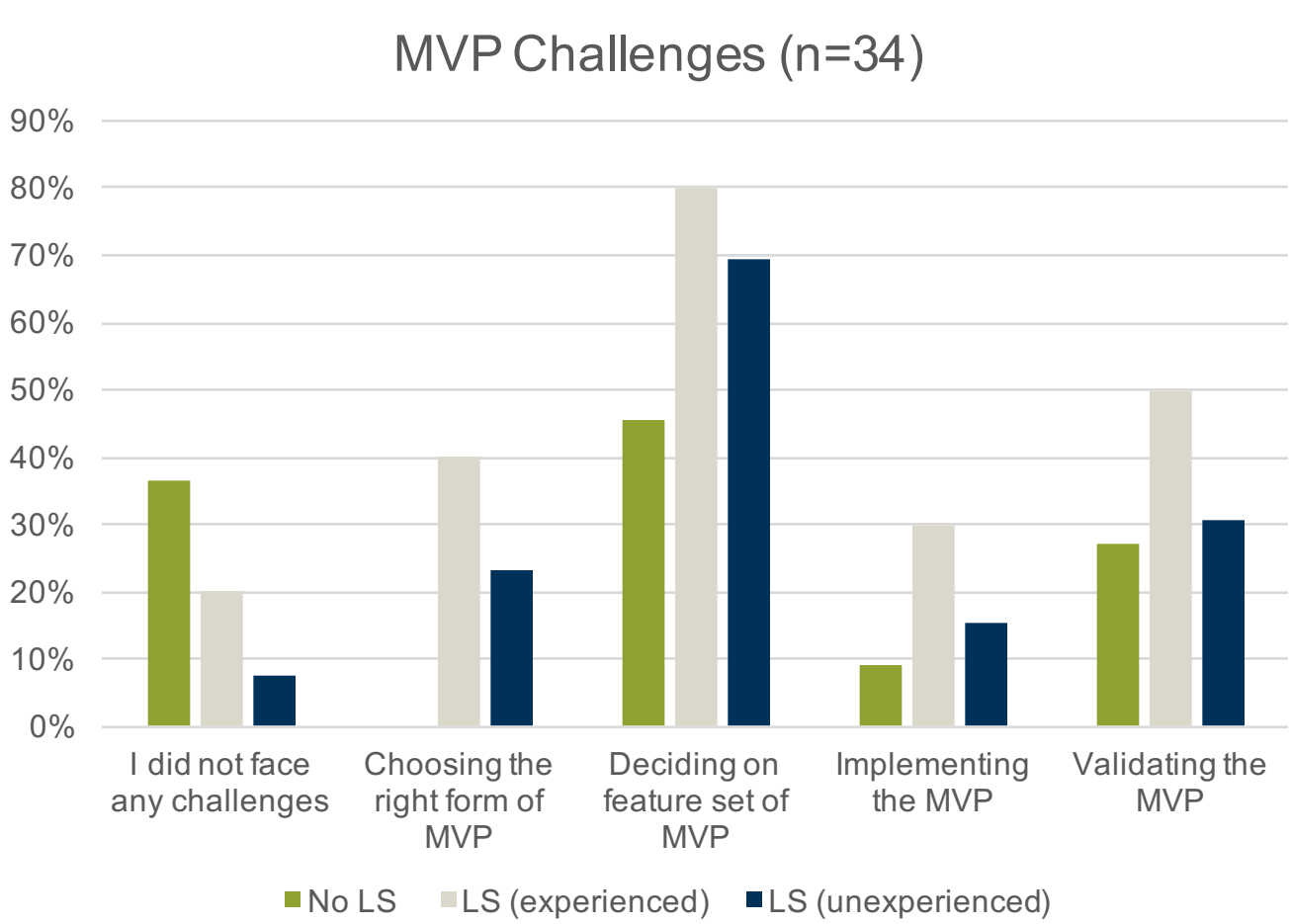
Perceived outcome of applying the LS approach

LS not necessarily responsible for the ultimate success but perceived and achieved outcomes of applying LS support its usefulness



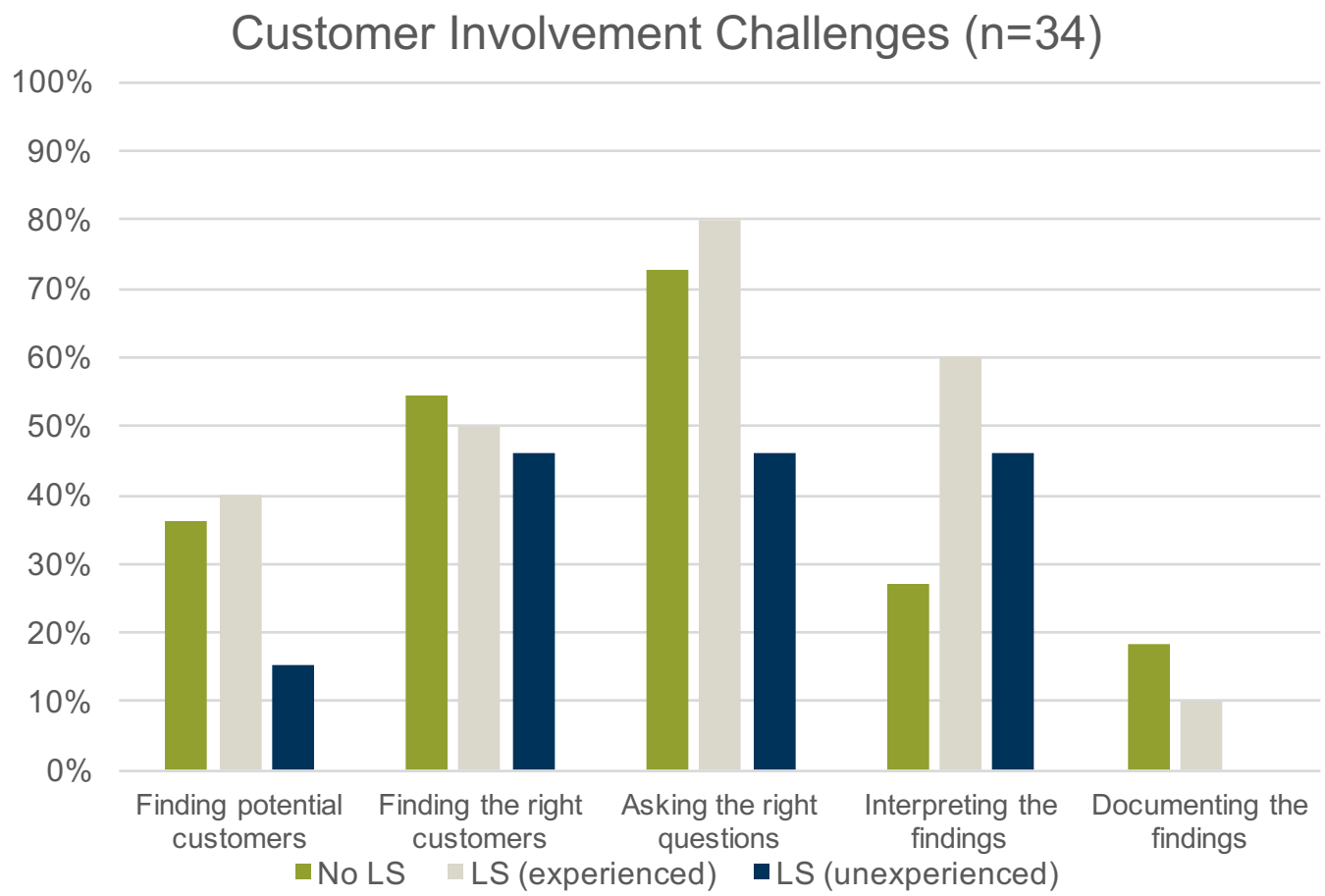
Source: Own illustration

Implementation
MVP Challenges



- Challenge with deciding on feature set and validating esp. voiced by experienced practitioners shows importance and awareness of possible impact
- In contrast, choosing the right form not recognized by No LS practitioners

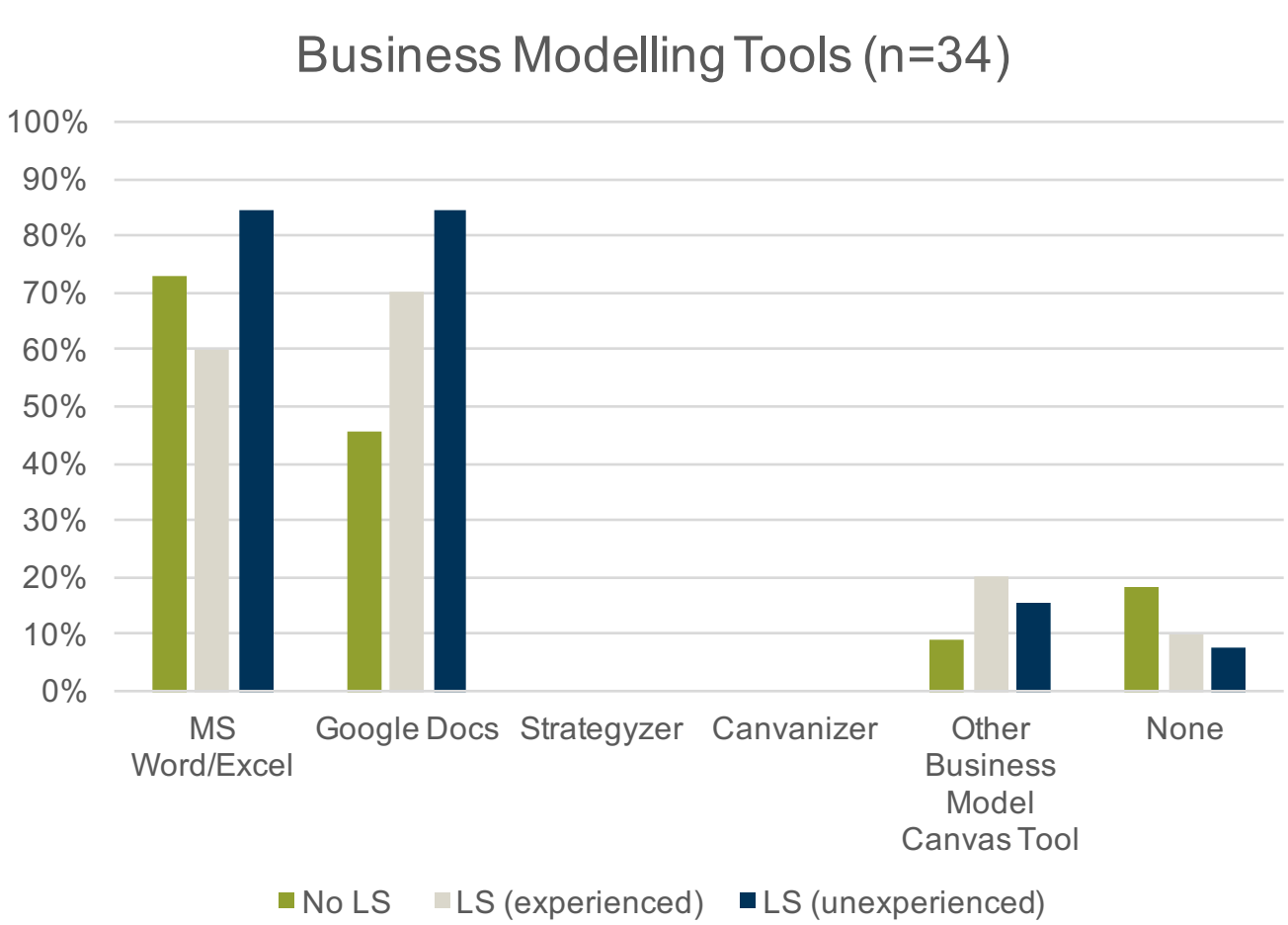
Implementation
Customer Involvement Challenges



- Challenges are overall similar between groups
- Focusing on elicitation of the right information (asking and interpreting)
- Differences interpreted as lack of awareness of potential impact
- Further challenge of lacking accessibility to the right customers

Implementation

Tools – Example for Business Modelling



- Business modelling done in a very generic way with general purpose tools, like MS Word/Excel or Google Docs
- Prominent BMC tools not used at all
- Importance of analog tools, i.e. posters and print-out versions of artifacts