

# Lean UX: An Iterative Process Between Quantitative and Qualitative User-experience Research



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If UX research is to become the driving and defining force in the product development cycle and it should not be sporadic. Particularly in the case of innovative product development, it has to go beyond the traditional insights and issues of focussed selective UX testing towards an iterative process of validating market needs and defining business goals from which customer value propositions can be derived and product features developed.

While many companies rely heavily on (web) metrics to reveal quantified tendencies, metrics do not give insights into why users use products or services in a specific way. By combining both quantitative and qualitative methods, applying Lean UX becomes a strategic advantage: by radically translating qualitative user insights into measurable units, companies have the means to evaluate proposed solutions and designs along the KPIs most viable for their specific business model and product phase.

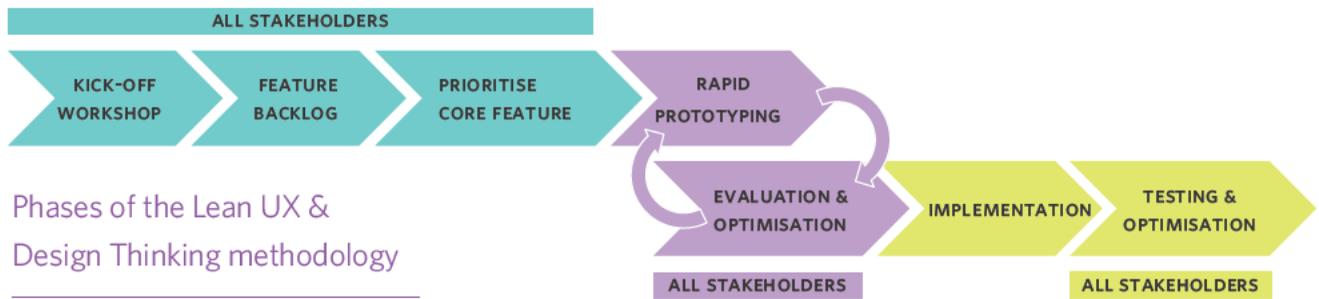
This paper will introduce a practical Lean UX approach that combines qualitative and quantitative research and utilises Design Thinking methods for fast paced, user-centred product and service development. After giving a definition of Lean UX and Design Thinking to establish a common understanding, the

key features of a Lean UX process will be introduced and exemplified by a real-life scenario. Finally, the interplay between qualitative and quantitative research will be highlighted.

## LEAN UX AND DESIGN THINKING

In the context of this paper, Lean UX and Design Thinking are understood as iterative, solution-focussed approaches to user-centred design and product development. They embody the philosophy of question first, then build, measure, and learn<sup>1</sup>.

Therefore, they advocate testing ideas at an early stage so that adjustments can be made promptly, with minimal effort and at little cost. Lean UX (testing) focuses on a limited, well-defined set of research questions throughout the product development cycle and is only defined by this scope, not the research methods applied.



While Lean UX (testing) seeks to answer the questions posed and generates user insights, Design Thinking methods are used to make insights accessible to all stakeholders, to foster an active collaboration, and to support a creative and solution-oriented product or service design.

#### PHASES OF LEAN UX

##### *The Kick-Off Workshop*

As depicted in the figure above, each Lean UX project starts with a kick-off workshop, which is crucial to understanding a company's current situation and needs. In the case of a company providing a car-sharing service, product owners, technicians, designers and other relevant stakeholders would participate in the workshop. Together with all stakeholders, the product or offered service is analysed and put into an internal (business) and external (competitors) context. This is an important step to fully understand its facets, especially the Key Performance Indicators (KPIs) that the product is evaluated on.

##### *The Feature Backlog*

In the feature backlog, already existing hypotheses and assumptions regarding user needs and possible causes for problems are collected. Additionally, a list of features that are considered for implementation are added to the log and are then translated into research questions and hypotheses.

##### *Prioritise Core Feature*

From the feature backlog, the feature, hypothesis and research question with the highest priority is selected.

- Example Feature: RFID sticker on a driving licence to replace separate access cards.
- Example Hypothesis: a certain number of users will not always want to carry a separate ID card with them to gain access to the car sharing service and will therefore not have it to hand when they decide to use a car on the spur of the moment.
- Example Research Questions: When do users use car sharing services? Do users plan trips ahead or use car sharing on the spur of the moment? What do users think about ID or access cards?

##### *Rapid Prototyping & Evaluation and Optimisation*

Depending on the core feature, hypothesis and research question, a suitable prototype and evaluation method will be designed that will deliver the necessary insights. Methods with a qualitative emphasis, such as interviews, behavioural observations

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and diary studies are good choices for enabling an understanding of potential users, how they interact with certain technologies or services, presumptions, prior relevant experiences, mental models, and so forth. Depending on the insights gained, the prototype is adjusted and evaluated again.

Once the best possible prototypical solution is found, all relevant insights gained are presented in a workshop. By applying Design Thinking methods, these insights and the prototypical solution are presented to the product team in a way that makes them as accessible and transferable into an implementation as possible. Active collaboration is a core element of a successful workshop, through which recommendations can be formulated and solutions can be conceived.

As a general principle, at a minimum those stakeholders who later have to work with the research results ought to participate in these phases as observers. Integrating the product team’s feedback into the prototyping and evaluation cycle makes the research itself iterative, as it can be tailored to cater to the company’s needs. The product team’s participation during this

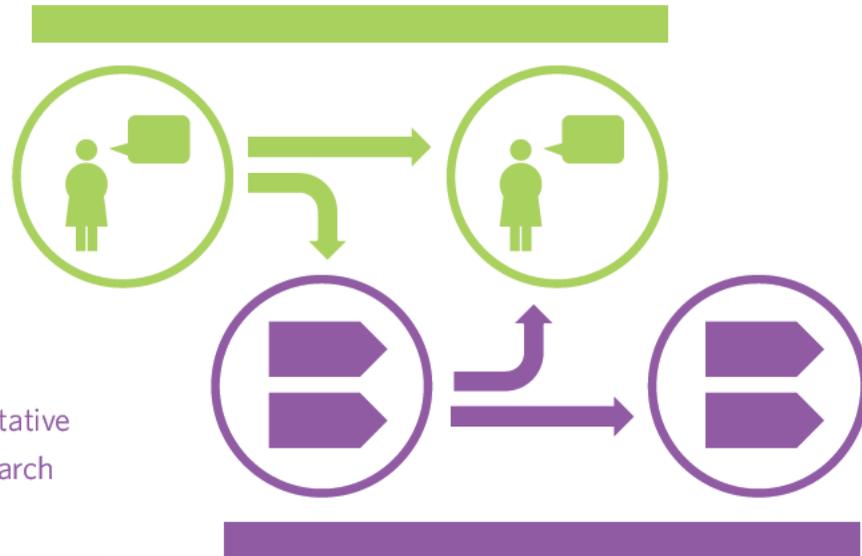
phase is an important step in building more empathy for potential users and to gain an understanding of users’ needs, which, in turn, enables the product team to successfully create user-centred products.

#### ***Implementation***

The prototypical solution is then implemented based on the recommendations given by the product team.

#### ***Testing & Optimisation***

The implementation and the proposed solution are then tested and evaluated. This can either be by means of a quantitative performance measurement, for example in form of A/B testing (where A = solution in place and B = intended improvement). Or it can be, depending on the core feature and associated research questions, another quantitative study focussed on evaluating the hypothesis. If, for example, the research team finds a strong influence of gender or income or some other aspect on the usage of car sharing services, a questionnaire based evaluation with a sufficiently high sample number might be the right choice to demonstrate a statistically relevant effect and its size.



## The interplay of qualitative and quantitative research methods in Lean UX

### QUALITATIVE AND QUANTITATIVE RESEARCH IN LEAN UX

The figure above visualises the interconnection of qualitative and quantitative research in a Lean UX project. Given that the Lean UX approach accompanies a product or service throughout its lifecycle, data or insights generated by one method feed into the other. While qualitative research seeks to generate an understanding of users, their motives and needs, quantitative research validates hypotheses formed on the basis of qualitative research.

As all hypotheses aim at improving elements that impact KPIs, a post-hoc evaluation of each iteration in the Lean UX cycle is a business imperative in user-centred design. On the other hand, user behaviour, revealed by quantitative data analysis, ought to be explained by qualitative research. This, too, is a necessity, as an exclusively number-based optimisation precludes solutions and innovations that are based on a deeper understanding of the user.

Thereby, Lean UX evolves into a process that generates results that fit the pace set by a client. It complements short deadlines that demand a very focussed, yet sound research design that delivers

actionable and verifiable results. Lean UX is based on four requirements:

- Knowledge about internal and external stakeholders has to be shared;
- Directly related stakeholders, such as the product team, need to be involved;
- Performance measurements based on the company's KPIs need to be conducted to evaluate the success of recommendations and solutions and;
- All insights and data need to be made as accessible and understandable as possible to stakeholders by applying Design Thinking methods

Hence, by strategically combining rapid prototyping and quantitative and qualitative research into a format facilitated through Design Thinking, it is possible to fulfil two main requirements stipulated by companies: to enable an agile and iterative context that adapts to the company's development pace and to ensure validated decisions that will have a positive impact on the company's business goals. ●

#### *References*

- <sup>1</sup>Ries, Eric (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Publishing.