SBB Lab

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SBB Research Fund: Research Topics 2021

The research topics for 2021 have been updated in terms of content and have been sharpened due to the current situation around COVID-19. The focus is on four new subject areas. The specific research questions serve as inspiration. We look forward to your project proposal in the form of an expression of interest.

Deadline for the submission of expressions of interest: <u>23.03.2021</u>

1) **Pricing System**
    - How can complexity of the price systems in public transport be reduced - given the institutional (regulatory, industry structure, political) environment?

    - How to win new customers for public transport? Focus should lie on persons who actually rarely use public transport.

    - What is the influence/role of the high convenience of "easy-ride" Ticket Apps on the acceptance of public transport travel passes?

2) **Railway production**
    - Potentials and how to use them for the increase of productivity (especially regarding train stations and train drivers)?

    - How to increase the use of railway network (especially train stations are bottle necks)?

    - Development of a benchmarking concept for the different elements of the public transport value chain.

    - How can we ensure good human-technology interaction with increasing digitalization and automation in railway operations? How can we prevent the ironies of automation by using techniques of design thinking and work design?

    - How can artificial intelligence, virtual and augmented reality be used as enablers to people in their work tasks? How can human and artificial intelligence be optimally combined and used for smart work processes?

    - How should co-workers/employees be managed based do the expected trends and changes in society in order to achieve the punctuality, quality and safety goals?

    - How should the scarcest resource in a transport hub (space/train path ("trasse")) be allocated? How can it be optimally used during different times (night/day)?

3) Customer information

- What type of information and what content do customers expect from SBB?

- Where do customers get relevant information?

- What role do the different channels (e.g. social media) play?

- Which actor of the mobility system do customers perceive as the "face"/single point of contact to them (is it the focal company or another actor)? What do they expect from the "face" to the customer?

4) Sustainability

- Railway 2050: How will mobility develop? What role will electric mobility play? Will it come to disruptive changes?

- What can be the SBB's contribution to the Federal Energy Strategy 2050? E.g.: How could a significant shift towards more public transport be achieved?

- Which existing circular business models (CBMs) from other resource-intense industries can be applied to the challenges at SBB?

- Which alternative design options/implementation strategies exist for a selected Circular Business Models? Under which condition does one implementation strategy produce better performance implications than another one?

For some research topics existing SBB data might be used. For a first impression on available data please check following documents:
- *Facts and figures including time series you find here.*
- *Available raw datasets are categorized by SBB as follow:*
  - *Open data is available for download here.*
  - *Restricted data can be obtained for specific projects under consideration of certain restrictions.*
  - *Closed data is not available for research.*
  - *An overview on raw datasets is available here.*

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