

ERS Stakeholder concerns inspiration

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Summary

An electric road system (ERS) is a solution that provides electricity for fully electric vehicles while the vehicles are in motion. This solution could overcome the range anxiety problems that fully electric vehicles have encountered. The large-scale ERS implementations rely on both technical maturity challenges and social acceptance challenges. These challenges limited technology diffusion and leaved many open problems. ERS is a complex technology innovation system that needs a system engineering method to align relations, problems, and solutions that multiple stakeholders can participate. In this study, we conduct desk research and interviews with key ERS stakeholders for an actor network analysis. This study helps to uncover the stakeholders' concerns and potential conflicts existed in the complex electric road system.

1 Research Questions

The research questions discussed in this study are:

1. What are different stakeholder concerns about ERS implementation in transportation systems?
2. What are the relations among stakeholders' concerns?
3. What are the inspirations for future ERS implementation from stakeholders' concerns?

2 Methodology

In this study, we first conduct the literature reviews in system engineering domain and decide to apply actor network analysis methods to uncover the stakeholders' concerns and influences in ERS. As shown in figure 1 below, desk research is then conducted to collect and summarise ERS structures and characteristics as the preparation of ERS stakeholders' interview. Then interviews are conducted to collect stakeholders' concerns and perception diagrams. Stakeholder's requirement takes a crucial part during the implementation stage. There have been developed many different methods to collect stakeholder related data, such as survey (Whitmarsh & Palmieri, 2009), workshop (Herzog et al., 2005), and face-to-face interview (Boyce & Neale, 2006). Stakeholder engagement is often perceived as a way of reinforcing the interdisciplinary nature of research projects. Stakeholder engagement can help to involve stakeholders' concerns and values in the transportation decision-making process (Cascetta & Pagliara, 2013). In order to involve more stakeholders in ERS discussion, the authors will present the result of this study with an interactive presentation.

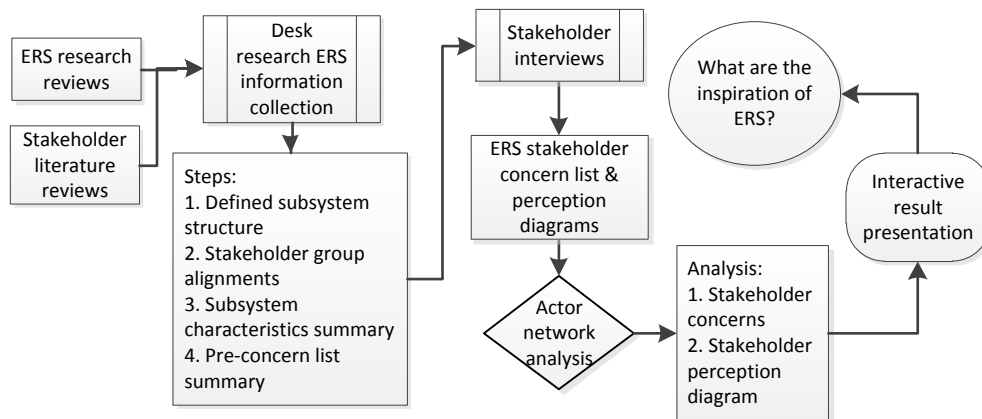


Figure 1: Methodology

3 Results

The results for this study are in two parts: the first part is from the ERS stakeholder interviews and the second part is from the interactive presentation. The first part of the result shows the trend of stakeholders' concerns about ERS. The stakeholder perception diagrams show the relations among their concerns. The second part of the result combined with the interactive presentation will involve audiences in the ERS conference to bring up more discussions about how ERS will evolve in the future.

Although ERS is still in its early stage, this study helps align the ERS characteristic from a generic and holistic level. One of the challenges is: the stakeholder composition is changing during ERS implemented. Currently, stakeholders involved in ERS cases are still in an early stage with a different level of interest, power, and knowledge. This study will help to find the alignment and bring more discussions among ERS stakeholders.

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