

## **Standardization process of Standard Setting Organizations [Working Title]**

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Date: As of now

Type: Bachelor's Thesis, Master's Thesis

Language: English

### **Motivation:**

Technological standards are essential to the proper work of the digital economy. Internet protocols ensure that the network, consisting of billions of interconnected devices with varying architectures, can work effectively and smoothly. Safety and quality standards ensure consumers can expect a minimal quality level from products purchased online, while well-established payment providers ensure an easy and safe way to pay for those products. Whereas some standards arise informally in the natural market process, most of them are a result of an agreement between different stakeholders, meeting within the structures of so-called Standard Setting Organizations and/or Standard Developing Organizations. Therefore, to understand internet standards and their impact on the digital economy, it is crucial to understand the standardization process.

### **Goal:**

The students could approach this topic on both macro and micro level. On the micro level, the goal would be to analyze the standardization process of one or more relevant standard-setting or standard-developing organizations. This is to understand how different features of the process might impact the economic consequences of the standards. On the macro level, the student would analyse the organizational structure of one or more standard-setting organizations and its impact on the economic outcomes. In both cases the thesis can be developed using different tools depending on the preferences of the student, for example, data analysis of existing or self-collected data, literature review, analysis of formal documents of standard setting organizations or qualitative methods.

### **References and Related Literature:**

Baron, J., & Gupta, K. (2018). Unpacking 3GPP standards. *Journal of Economics & Management Strategy*, 27(3), 433–461. <https://doi.org/10.1111/jems.12258>

Baron, J., & Pohlmann, T. (2018). Mapping standards to patents using declarations of standard-essential patents. *Journal of Economics & Management Strategy*, 27(3), 504–534. <https://doi.org/10.1111/jems.12255>

Baron, J., & Spulber, D. F. (2018). Technology Standards and Standard Setting Organizations: Introduction to the Searle Center Database. *Journal of Economics & Management Strategy*, 27(3), 462–503. <https://doi.org/10.1111/jems.12257>

Harcourt, A., Christou, G., & Simpson, S. (2020). Internal Governance of the IETF, W3C, OASIS, and IEEE: Structure, Decision-making, and Internationalization. In A. Harcourt, G. Christou, & S. Simpson (Eds.), *Global Standard Setting in Internet Governance* (pp. 34–61). Oxford University Press. <https://doi.org/10.1093/oso/9780198841524.003.0003>

E. Folmer & K. Jakobs. (2021). Standards Development for Smart Systems—A Potential Way Forward. *IEEE Transactions on Engineering Management*, 68(1), 75–86. <https://doi.org/10.1109/TEM.2020.2976640>

G. Chandra & A. Mukhopadhyay. (2021). Industry Standards and Standardization: An Expert Survey on Opportunities and Challenges. *2021 International Conference on Information Technology (ICIT)*, 284–289. <https://doi.org/10.1109/ICIT52682.2021.9491725>

McQuistin, S., Karan, M., Khare, P., Perkins, C., Tyson, G., Purver, M., Healey, P., Iqbal, W., Qadir, J., & Castro, I. (2021). Characterising the IETF through the lens of RFC deployment. *Proceedings of the 21st ACM Internet Measurement Conference*, 137–149. <https://doi.org/10.1145/3487552.3487821>