Forschungsgruppe
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» Research in Wildau - Innovative and Hands-on «

Facilitating Technology Transfer via a Technology Radar as an Open and Collaborative Tool

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Introduction and Challenges

Drivers of change such as demographics, societal values and digitalization significantly influence enterprises across the globe. But the strength of future densification in the face of increasingly rapid social, technical and cultural changes is seen most clearly in the world of **digital technology** (Pelton 2019, p. 64).

Facing reality, technology scouts, especially within small and medium-sized enterprises (SMEs) and public institutions, are often confronted with the fact that the systematic **exploration of new technologies**, the evaluation of their potential and the associated creation of a knowledge base as a basis for **technology transfer processes** can be an **enormous challenge** due to considerable personnel and financial expenditure. As a result, a **technology radar** for facilitating technology transfer was developed following the lean approach (Ries 2013, p. 73).

The **lean approach** implies the combination of customer development, methods, flexible software development and their lean implementation. It is about **the optimal use of scarce resources** in order to achieve the best insights about a potential product regarding the customer (in this case: the potential user) in the shortest possible time (Maurya 2013, p. XIX). The objectives of the lean approach match the ambition of the development of the technology radar to create **a collaborative digital tool that facilitates technology transfer**, which is eagerly used and further developed by its users. To achieve these objectives the **Build-Measure-Learn-Loop** (figure 1) has been followed.

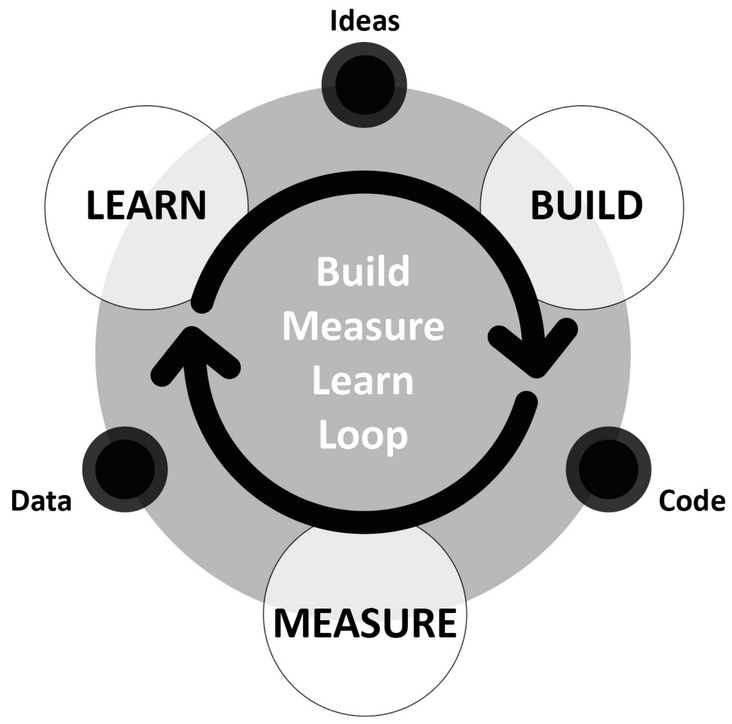

Figure 1: Adapted Build-Measure-Learn-Loop (Ries 2013, p. 73)

An Open and Collaborative Technology Radar

A technology radar is a **graphical visualization**, which contains a short summary including current developments, research status and economic potential of technologies. Often the eponymous radar, i.e. a subdivision of a circle into quadrants and circular distance lines (rings), serves as the basis for the visualization. Quadrants usually represent nominal attributes (e.g. a technological field), rings represent the metrics that were used to evaluate, for instance, achieving market maturity in one, two or three years. In practice, a large number of **specific visualizations exist for a wide variety of purposes** (Rohrbeck 2007, p. 7). After it was first used at Deutsche Telekom in 2004, the technology radar is now gradually finding its way into the business landscape (ibid. p. 6). Technologies are usually classified according to their relevance to the company's business model and the maturity of the technology (Golovatchev et al. 2008, p. 993).

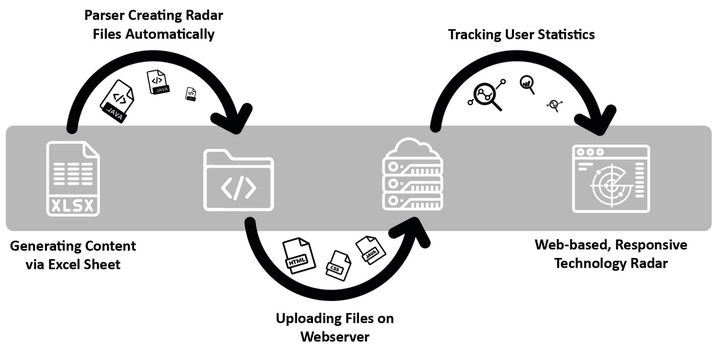

Figure 2: From Data to Visualization of the Technology Radar

An **open source code** has been significantly enhanced, especially in terms of scalability and usability. Furthermore, the graphical representation has been revised. An Excel-based data provision was added, so that **a multi-user system** with versioning can be implemented without problems. From this database, Java is used to automate the creation of detailed pages as well as to generate the overview visualization in the form of the actual radar. Figure (figure 2) summarizes **the process of data generation and visualization** in a brief way.

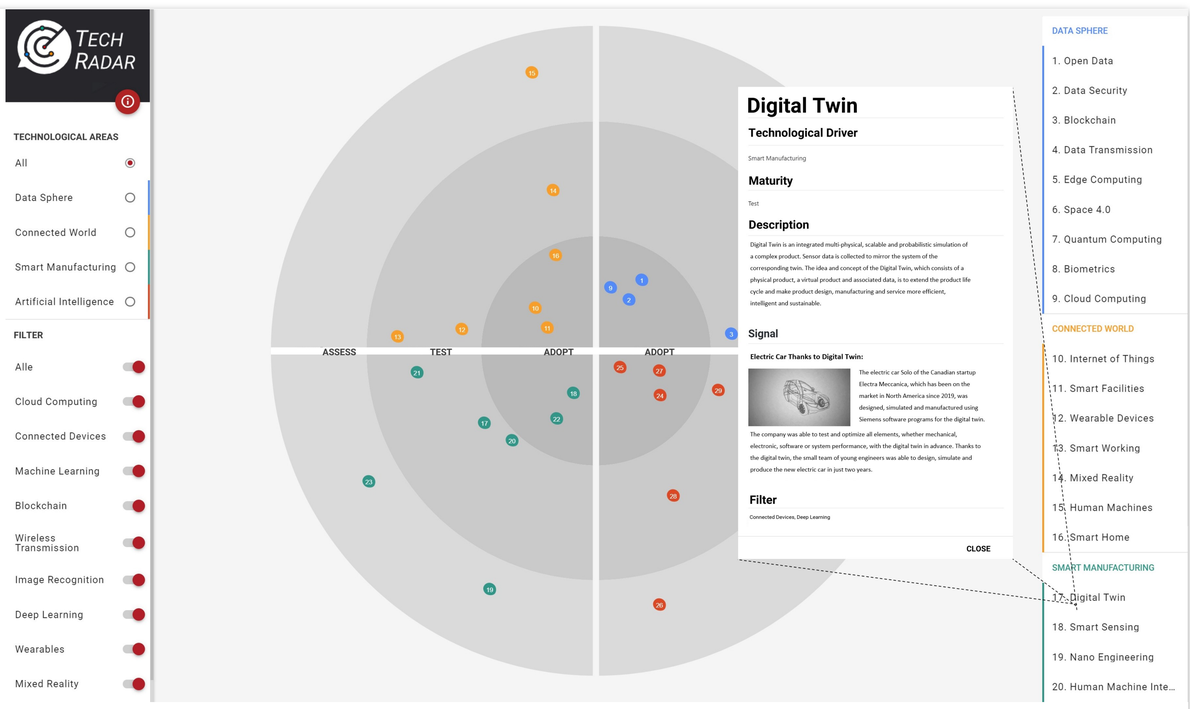

Figure 3: The Technology Radar

Further development based on expert feedback

An **interactive workshop** was held as part of **the innoX Futures Conference 2019** at the Technical University of Applied Sciences Wildau. The workshop was entitled "Tech Radar – Open and collaborative tool for dealing with technology trends" and was carried out with about **30 experts** in the field of knowledge and technology transfer. After a short introduction to the subject of the technology radar, six groups of five experts each had the opportunity to test the digital tool on several devices and to exchange their experiences and ideas within a short 30 minutes. A **Tech Radar Canvas**, reminiscent of the Business Model Canvas (Osterwalder et al. 2011, pp. 22), was used as a **discussion guide** and also for documenting the results for later adjustments.

Conclusion and Outlook

In order to achieve the objectives **of improving the tool**, so that it is eagerly used by actors of technology transfer, the technology radar will be **enhanced with more features**. The most promising improvement seems to be the implementation integration of the technology radar into a **content management system**, where **user profiles** can be created and thus, the way to a crowdsourcing platform is being paved. Further research possibilities include the transition to a **crowdsourcing paradigm** (maybe with incentives for potential participants), investigation of the quality of the results (in potentially different settings and user groups) and also the comparison with the situation and perception of technologies and corresponding applications in **different industries** as well as the design of **interfaces to different strategy processes**.

Endnotes

- Golovatchev, J., Budde, O. (2010). Technology and innovation radar - Effective instruments for the development of a sustainable innovation strategy. In 2010 IEEE International Conference on Management of Innovation & Technology, Singapore. (pp 760–764). doi:10.1109/ICMIT.2010.5492855.
- Maurya, A. (2013). Running Lean. Beijing: O'Reilly.
- Pelton, J.N. (2019). The Prime Drivers of Change. In Preparing for the Next Cyber Revolution. doi:10.1007/978-3-030-02137-5_3.
- Ries, E. (2013). Lean Startup. Schnell, risikolos und erfolgreich Unternehmen gründen. München: Red-line-Verlag.
- Rohrbeck, R. (2007). Technology Scouting – a case study on the Deutsche Telekom Laboratories. ISPIM-Asia 2007 Conference. New Delhi.
- Osterwalder, A., Pigneur, Y., Wegberg, J. T. A. (2011). Business Model Generation: Ein Handbuch für Visionäre, Spielveränderer und Herausforderer. Frankfurt am Main: Campus Verlag.

Test the Technology Radar:
radar.itwirtschaft.de