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## Digital transformation in the construction industry

Productivity growth in the construction industry in Switzerland has been stagnating for the last few decades. According to an analysis, McKinsey published a graph showing a positive correlation between productivity growth and the degree of digitization. As can be seen from the chart, the construction sector has not been able to keep pace with overall economic productivity growth (Barbosa, Mischke, & Parson, 2017).

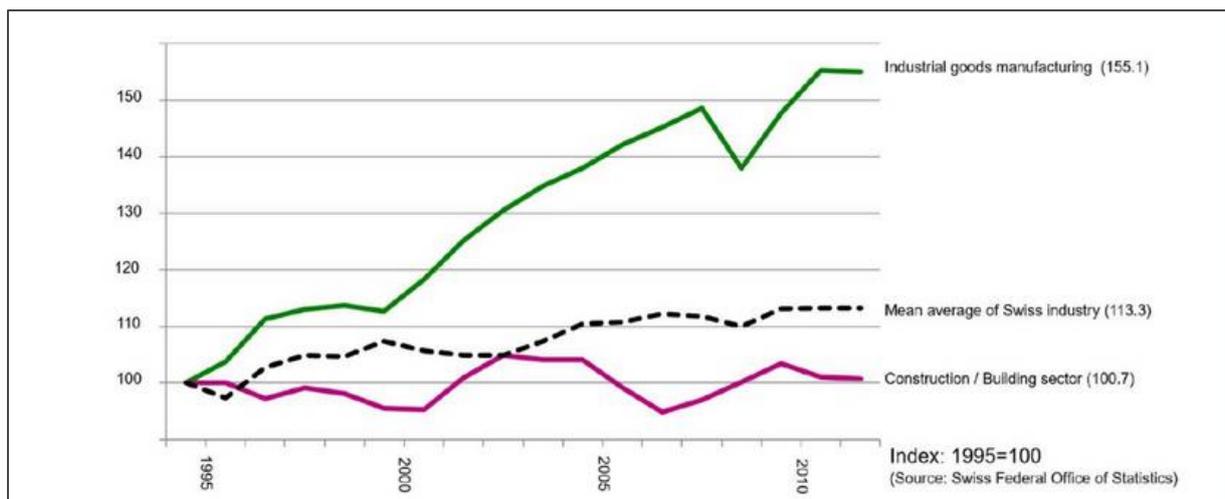


Figure 1: Productivity growth over the past 15 years, Swiss Federal of Statistics, 2019

Another study from 2019 looked at the impact of the digital transformation on the construction industry and found that awareness of new processes and opportunities associated with digitization is low. This lack of knowledge about the process-oriented and organizational changes makes it difficult to create a working environment within and between companies that supports digital development. The results of this study show that it is necessary to improve the **cooperation** between the customer and the project participants already in the early stages of the design process. In line with this view, the need arose for the owner and/or user to be more involved and active in the definition and exchange of project requirements with the parties involved from the very beginning of the process phase. Furthermore, the relationships, roles and responsibilities within and between organizations must be clearly defined in order to create a working environment conducive to digital development and aimed at fostering a dynamic network of teams (Talamo & Bonanomi, 2019).



The second result addresses **integration**. It shows the need to facilitate and strengthen integration between project participants in order to improve information exchange and performance simulation according to different parameters (Talamo & Bonanomi, 2019).

DE BORD INTERNATIONAL sees the need for construction companies to review their business processes and invest in digital transformation to improve productivity growth in the construction industry. However, there are some obstacles and challenges. To improve both collaboration and integration, we need specific leadership and management skills. We interviewed our expert for the construction industry, Axel Riester.

**Axel, from a leadership perspective - which leadership qualities are absolutely necessary in the process of digital transformation?**

*I think that it is primarily a matter of wanting to get involved in digitalization. In concrete terms, this is indicative of consciously abandoning tried and tested mechanisms and turning to more open systems of leadership, to more participatory, collaborative models. This can be interpreted as a seemingly reduction of control or diminished control ratio within the organization, which can lead to uncertainty on the managers end. In terms of leadership qualities, it becomes important - and at the same time challenging - to learn to give the team room to explore; at the same time to consistently pursue concrete, short-term milestones and to allow the latest findings to be incorporated more quickly into decision making. Mastering this contrasting program, flexible on one hand and resilient on the other, is a requirement that fluctuates between mentor and implementer. And in terms of leadership quality: that of the empowering, driving and authentically inspiring boss.*

**From a management perspective - what do we need to create strategies and measures to build a digital workforce, sustainable cooperations and alliances?**

*From my point of view, above all the will to persevere and leading by example are needed. Getting the workforce excited about digitization itself is rather simple at first: there are exciting tools, technologies and methods available and cooperation between trades and with partners from all disciplines opens up new opportunities. So far so good. The resistance that will arise due to external obstacles, mistakes and errors that will happen and moments uncertainty tempt us to fall back into the "old ways" of doing. This must be prevented at all costs. Continuous and consistent upkeep of the alignment of the mindset and approach to the methods of digitally based forms of collaboration, communication and development must be the central action. From a strategic point of view, it is essential to "go digital". But not because it just is en vogue. But because the question of the added value of this digitization for customers and the company itself must be answered in a crystal-clear way; why and with what goal / purpose do we as a company want to digitize and to what extent do we want to do so?*



**What do you think needs to change in order to increase productivity levels in the construction industry? Where do you see the biggest challenge?**

*This is a very challenging question and I can only speculate: Abandon even more technological pressure instead of more end-to-end communication and more reliable data. In other words, to seek the answer in ever more powerful technology does not seem to be a good idea to me. Either way, the technology will come, and that is a good thing. We are lagging behind in dialogue and, above all, in the quality of its content. If the project succeeds in communicating across disciplines and throughout the project from the very beginning, the speed increases, the error rate decreases, costs decrease and satisfaction increases. And this improves productivity; also because the various "comfort buffers" are no longer need to be built in by the parties involved.*

*I see the greatest challenge in the nature of things. Digitalization, specifically the digital twin that is being built, leads to greater transparency throughout the project, in a very early phase and across many, if not all, disciplines throughout the reale estates' entire life cycle. That is reasonable and very economical. But it breaks an approach that has been established in the industry over the years: because the price pressure was so high and the margins so low, offers were made at low prices and finally money was earned via additional cost / expense positions. The digital twin is changing this structure and, as a side effect, is forcing the industry to adopt new models of cost structures/distribution. This might also have an impact on portfolio management and it may also affect the valuation process of real estate as a whole. This adjustment process is demanding and requires a great deal of mutual understanding at all levels.*

**Where do we start? Do you have recommendations for companies to increase their productivity levels and to go a step forward?**

*The debate about what digitalization should bring in terms of productivity needs to be answered in very concrete terms. It seems to me that at the moment the urge to "do something" is more important than the question "why should we really do it". This digital activism leads - in my opinion - to cosmetic adjustments and superficial changes. I therefore consider it of primary importance to first deal with what is currently being done how, which processes run as they do, and why. Often processes have grown and established themselves organically for good reasons. These reasons may no longer exist, may have become obsolete or are even counterproductive. To develop an understanding and to consciously deal with it, to understand the very analogous questioning of the circumstances by us humans, as a valuable part of the corporate culture, seems to me to be a very suitable starting point for a start into digitally driven productivity increases.*

To conclude, we would like to refer you to an exciting project from England: The group "p13" ([www.p13.org.uk](http://www.p13.org.uk)) has been working hard on this topic in the field of infrastructure, looking at three focus topics: organization, governance and integration. The key message is that the current model for implementing large infrastructure projects and programs is not integrated to the extend needed It prevents efficient implementation, hinders innovation and therefore does not provide the powerful



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infrastructure networks that businesses and the public need. A new model is required (Institution of Civil Engineers, 2018).

We thank Axel Riester for the exciting inputs and we are looking forward to your comments!

Your team DE BORD INTERNATIONAL

Would you like to learn more about Axel Riester? Please read here: <https://debord.ch/en/team/>

### Sources:

Barbosa, F., Mischke, J., & Parson, M. (July 2017). Improving construction productivity. Institution of Civil Engineers. (2018). *p13*. Retrieved from Project 13: <http://www.p13.org.uk/>

Talamo, C., & Bonanomi, M. (31. December 2019). *SpringerLink*. Retrieved from The Impact of Digitalization on Processes and Organizational Structures of Architecture and Engineering Firms: [https://link.springer.com/chapter/10.1007/978-3-030-33570-0\\_16](https://link.springer.com/chapter/10.1007/978-3-030-33570-0_16)