

EXECUTIVE SUMMARY

This report is focused on the barriers identified in task T4.1 of the same name. The Introduction states the three questions that the report is supposed to address: (1) what is the state of ICT penetration to the construction sector, (2) is this too low, and (3) what are the barriers that are preventing higher penetration.

In Section 2 we present a generic model of technology transfer that makes a distinction between technology push and technology pull. It identifies three mechanisms of technology “push”: (a) educated people, (b) software and services, and (c) standards and regulations. It identifies four “pull” mechanisms: competition pressure, client pressure, government pressure, and propaganda. It then follows the PESTEL model to distinguish among political, economic, social, technological, environmental and legal barriers to ICT adoption.

As a starting point to barrier analysis, the state of the art of several general as well as specific reports were gathered and are summarized in Section 3. It was found out that construction lags in ICT adoption as well as in the productivity gains of other industries. We then present some earlier studies as to why this gap between ICT opportunity and ICT reality exists – reports cite peculiarities of construction industry such as unique products and processes, temporary value chains, low culture of learning of core competencies, relatively weak market signals, etc. However, as we are finding that privately construction workers of all levels of education are using state-of-the-art IT, we assume there must be something wrong with the technology delivery mechanism to which we return in conclusions. We are also presenting a summary of academic research that was addressing the technology barriers in construction. The discussion is also based on a discussion in a context of the meeting with Slovenian construction industry.

Section 4 presents the relevant finding of a survey that was conducted in the context of WP3 but has some information on the barriers. It also presents the design of a custom survey designed in WP4.

In Section 5, Discussion and Conclusion, we are examining the findings that can be summarized as follow: Construction Industry is very rational in the use of resources including the ICT technologies. It would be unfair to say that it is simply backward or not acquainted with technology. There is a gap, however, in the perceived value of technology by the research, academia and the software industry and the construction industry. Barriers identified so far include high costs of technology, lack of knowledge by the employees, and unclear legal as well procedural frameworks for the use of technology. The results of the programmed survey in WP4 is expected to confirm this.

The barriers could be significantly lowered by delivering users-friendly, “on-demand pay as you go”-services that would be offered in the context of a project collaboration environment. DigiPlace project will be working towards specification of such platforms for the European construction industry.