Methodology for reducing waste in IT projects

IT projects, due to their level of complexity, are subject to many errors during their implementation. As a result, time or budget may be exceeded, and the scope may be missed. It also happens that projects are never completed. IT technologies are becoming ubiquitous, and hence projects related to both their development and implementation. One of the problems associated with IT projects is waste. The purpose of the dissertation is to identify, based on analysis of foundational data and direct research, ways to reduce waste in IT projects.

The author conducted an analysis of key management concepts and the tools and techniques included in them, which can be applied in the optimization of IT project management. An analogous study was made of selected project management methodologies, and a set of methods, techniques and tools within them that serve to reduce waste in projects was identified.

As part of the face-to-face research, a survey was conducted using an online interview questionnaire of 80 IT experts involved in the implementation of software development projects, as well as a survey of 384 companies in the Podkarpackie region that were implementing projects to implement IT solutions related to Industry 4.0 technologies.

Subsequently, an analysis of empirical survey data was carried out with the aim of finding and indicating the types of waste in the implementation of software development projects and implementations of IT-based Industry 4.0 technology solutions in the context of the causes and consequences of their occurrence. The analysis of survey data also aimed to verify hypotheses to answer the research questions, using statistical methods, i.e. cross-tabulations.

On the basis of the analysis of found data and empirical research, the author's diagnostic and forecasting methodology DAP/KWO - D-diagnose, A-analyze, P-plan, K-create, W-implement, O-evaluate - was proposed. Among other things, the methodology includes a standard list of solutions for each type of waste, using solutions proposed in the literature, as well as those identified by experts in research. In addition, the methodology proposes proprietary tools such as the MxN heuristic technique and a diagnostic survey questionnaire.