

Project description for the general public

ICT diffusion trajectories - determinants and implications for economic development. New theoretical approach and empirical analysis results.

The major objective of the project '**ICT diffusion trajectories - determinants and implications for economic development. New theoretical approach and empirical analysis results**', is to provide extensive knowledge on the process of diffusion of information and communication technologies and its determinants and economic effects, across 81 developed countries (according to the World Bank country classification 2015), over the period 1980-2016. It is also designed to demonstrate the emergence of the 'critical mass' and technological takeoff intervals which are strictly associated with the process of ICT diffusion.

To ensure the flow of research we define 5 major goals:

- [1] Development of a novel methodological approach to quantify the 'critical mass' and isolate the technological takeoff interval along country-specific ICT diffusion trajectories;
- [2] Identification of country-specific ICT diffusing patterns, including forecasts;
- [3] Quantification of the 'critical mass' and isolation of the technological takeoff intervals along respective ICT diffusion patterns;
- [4] Identification of country-specific economic and non-economic determinants of ICT diffusion process;
- [5] Examination of the impact of ICT deployment on the level of economic development across selected countries.

Our project is motivated mainly by, observed worldwide, dynamic diffusion of information and communication technologies, which is broadly recognized phenomenon regarding its unprecedented speed and geographic coverage. Importantly to underline that process of ICT diffusion is not only limited to the high-income and well-developed economies, but it is also reported even in the most economically backward countries (Hanna 2003, 2010). Above all, ICT are claimed to be the *General Purpose Technologies (GPTs)* (Bersnahan and Trajtenberg 1995), meaning their impact on society and economy is pervasive and enforces structural and qualitative changes. Broad access to and use of ICT, allows for fast growth of social networks (Castells et al. 2009, Shapiro and Varian 2013), which generates economies of scale (Katz and Shapiro 1985). Moreover, Cairncross (2001) writes about the 'death of distance' indicating that due to ICT broad assimilation, the geographic distance is no longer a barrier for various economic activities. Perez and Soete (1988), argue that ICT facilitate elimination of multiple barriers that disable entering the pattern of stable economic development, and thus are claimed of special importance to their enhancement. Bearing in mind the latter, we claim that unveiling the unique features of ICT diffusion process and examination of its critical economic and non-economic determinants, yields special attention. Providing this in-depth insight allows for knowledge deepening with this respect and broader understanding of this long-term process of ICT diffusion.

The major aims and scopes as the well as the research conducted under the project entitled 'project '**ICT diffusion trajectories - determinants and implications for economic development. New theoretical approach and empirical analysis results**', strictly refers to fundamental research on the field of economic sciences. The main goal of the project is to understand fundamental regimes regarding the process of ICT diffusion, including identification of economic and non-economic determinants of this process. The latter may be claimed of crucial importance for further empirical research in the area of research of development economics, contributing to the present state of the art regarding theoretical and empirical knowledge.