

Dynamic industrial change by the popularization of the front-end ICT.

Topic: Structural change and dynamics

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(i) What is the scientific question to be answered by your paper?

Focusing on the diffusion process of technological knowledge and skill, this paper attempts to analyze the popularization process of the front-end ICT, such as individual informatics and wireless technologies, from 1980 to 2005 in Japan.

(ii) What is the method used?

Various hypotheses are formulated on this subject in social science and economics; the Diffusion of Innovations by Everett M. Rogers (1962), the populist technology theory provided by Susan J. Douglas (1987), the Endogenous Technological Change theory by Paul Romer (1990), the social role of amateurs by Patrice Flichy (2010) and the social role theory of unofficial sector for achieving science and technology literacy by Yuzo Takahashi (2011).

Time-series I-O data were extracted from Employment Matrix Tables (101 x 269) in the Linked Input-Output Tables (1980-1985-1990, 1985-1990-1995, 1990-1995-2000 and 1995-2000-2005; 514 x 412). These data were analyzed for our empirical research on the above mentioned hypotheses.

(iii) What is, or will be, the result of the study?

A part of our results show us a drastic employment-occupation structure change in several production activities, such as (1) an institutional decrease of telegraphists in water and land transport activities in 1980s, despite the increase of wireless operators and technicians, (2) the inverse U-curve change in the number of system engineers (SEs) employed in commerce, finance and insurance activities in last quarter of 20th century, despite the linear progress of the SEs in information service or research activities, (3) the rise of self-employed workers or amateurs in information service or multimedia contents service activities.

The cause and the results of this type of dynamic I-O structural change will be the focus of our presentation. One of the causes would be interpreted as an emergence of informal collective knowledge and skills in advanced ICT society.