Knowledge and Information: The diffusion of ICT in the Argentinean manufacturing industry

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The objective of this article is to contribute to the discussion about information and knowledge in the economy and society of Latin America focusing on the use and the diffusion of information and communication technologies (ICT) in the Argentinean manufacturing industry. The article relates the use and diffusion of ICT to the performance of the firms (their capacity to innovate, to organize creatively and to compete).

The paper has three central aims: (i) to present an empirical map of the use and the diffusion of these technologies in the manufacturing industry, (ii) to link that diffusion with improvements of the endogenous capacities of the firms and (iii) to make a contribution to the theoretical discussion about the links between the information and the knowledge economies. The central argument of the paper is that the incorporation and use of these technologies should be analyzed not in isolation but rather in the context of the capacities previously reached by the firms. The paper is based on a field survey of 246 manufacturing firms, undertaken between July and September, 2002. The firms surveyed are located in the Northern portion of Metropolitan Buenos Aires (206), in Córdoba (25), and in Rafaela (15).

The paper concludes with some inferences regarding the way in which Argentinean companies use ICT, not only to improve what they are already doing, but also to generate new knowledge and capabilities.

The relevance of the topic can be appreciated as follows. Firstly, because the paper sketches a descriptive map which was unavailable until now in Argentina. That is, the paper is based on a field survey which sheds light on a topic for which there was very little

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empirical information. The survey measures the effective diffusion of these technologies in the Argentinean manufacturing industry. Secondly, because the paper departs from the argument that the degree of diffusion and use of these technologies is a function of capacities acquired by firms in other areas through a long evolutionary path. Lastly, the paper lays the ground for a discussion about the role of ICT in firm learning.

The paper has four sections. The first section discusses the relationship between information and knowledge and links that discussion to the diffusion of ICT and to the development of firm capacities. The second section presents the analytical dimensions and indicators used to measure both ICT diffusion and firms’ capacities. The third one describes general characteristics of the firms surveyed and the degree of ICT diffusion among them. The fourth section presents a cluster analysis. In it firms are grouped according to their similarities in terms of the variables chosen along the two dimensions of analysis (ICT diffusion and firms’ capacities).

The analysis undertaken in the paper leads us to the following conclusions. (i) That diffusion is greater in administrative rather than in production areas. (ii) That diffusion is strongly related to firm size but, at the same time, that the previous evolutionary path (measured in terms of capacities reached) matters. (iii) That in most cases the full potential of these technologies has not yet been exploited (for example with regards to internal learning processes).

The paper also presents some reflections with regards to policy.

(i) If ICT diffusion is not independent of internal firm capacities then policies should aim at a broad spectrum of issues and not treat ICT diffusion in isolation.

(ii) Despite large differences among firms with regards to ICT diffusion, they converge in a limited number of clusters which could now be characterized as stadiums in a continuum of situations.

(iii) That ICT diffusion is a complex and long process which requires a number of different policies if we are to increase it across the manufacturing spectrum.

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