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Information Economics and Policy 17 (2005) 199–215

**INFORMATION  
ECONOMICS  
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# Technological cooperation and product substitution in UK retail banking: the case of customer services

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Received 4 November 2003; received in revised form 11 April 2004; accepted 15 April 2004

Available online 20 July 2004

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## Abstract

The pervasive implementation of information technologies in retail banking has paved the way to significant transformations including organizational changes as well as a wider product range. The central theme that is discussed in this paper is the degree to which the unfolding of a technological trajectory has provided incentives to mutual adaptations in the supply and demand of retail services. Accordingly, the paper will focus on the emergence of a network structure in the UK retail banking system and on the process of product substitution that emerged on the demand side.

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*JEL classification:* O31; G21

*Keywords:* Technological change; Banking activity; Cooperation; Product substitution

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## 1. Introduction

The central aim of this paper is to review some aspects of the process of structural change that occurred retail banking in the United Kingdom (UK). Technical

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progress and, in particular, the development of Information technology (IT) played a pervasive role in redefining the boundaries of this activity. Commercial banking has experienced significant changes with respect to two dimensions: internally, the emergence of a network structure as a viable solution to the bottlenecks that could hinder capacity expansion; externally, the increased variety of retail services stimulated by the interaction with customers. This paper will focus on the intertwined effects of the implementation of general purpose technologies (GPTs) and the subsequent cascade of complementary changes that elicited the definition of new procedures underpinning the design and the supply of retail services.

In the analysis proposed here the fact that economic agents learn from accumulated experience yields that they try to react creatively to confront the stimuli of a changing competitive environment by building on the consolidated patterns of their activity. The historical assessment of technological change in UK banking confirms the conjecture that the emergence of coordination embeds technical and organizational choices opening the way to further innovation in an open-ended process. This pattern of intertemporal choices drives the diachronic adaptation among members of a financial institution through the implementation of rules and procedures; among firms through the effects of competition; and among suppliers and consumers through the demand-supply dynamics. Hence, technical change is a process which becomes distributed across all agents who contribute to foster it.

Some aspects of the process of transformation of UK retail banking have been left out of the paper to maintain focus and clarity: in particular, whilst deserving a separate digression, the development of capital markets and regulation are simply outlined. The paper is structured as follows. Section one will set out the conceptual framework by reviewing the technological events occurred in UK retail banking through a long-term longitudinal analysis. The next two sections will focus on the sources and the effects of technological cooperation and demand adjustments as guiding forces of a dynamically adaptive process.

## **2. UK retail banking services: growth and coordination**

The activity of retail banking has gone through significant changes in UK as well as in several other countries. The unfolding of technical progress within a changing competitive framework has paved the way to remarkable process and product innovation. As a result British financial institutions have long since been engaged with the systematic development of specific procedures to coordinate the progressively improved processing capacity with the organizational structure in place. Technical change in UK retail banking emerges as an incremental, adaptive process of coordination unfolding at several, complementary levels in which a twofold set of causal relations can be individuated. The first concerns the impulse provided by the implementation of GPT, the other involves the embedment of such technologies by means of the procedural changes that characterized the microdynamics of the system. The theoretical forerunner for this discussion is Hughes (1983) who illustrated the development of large technical systems in three phases: invention, technical

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