ABSTRACT

Banks worldwide are putting a big effort into de-materializing their processes, in order to streamline the processes and thus reducing overall costs. In this chapter, the authors describe how the de-materialization can be a big opportunity for banks, describing the European context. Furthermore, the de-materialization of check handling is taken as example, proposing a review of existing technologies and describing the advantages that a real framework can give to the users and to the bank systems.
INTRODUCTION

In the last few years, banks have done a big effort to improve services they supply to customers, reducing costs at the same time. As a part of this effort, a trend is emerging towards progressive de-materialization of banking processes and artifacts. For instance, the term certificates dematerialization refers to investors converting into digital form the physical certificates of shares they have given in custody to a financial institution acting as a depository. In Europe, investors can dematerialize any certificate provided that (i) is registered in their name and (ii) belongs to the list of securities admitted for dematerialization by regulatory authorities like the European Central Bank. De-materialization of banking processes has started to affect loan and investment procedures that traditionally involved face-to-face meetings with customers at bank branches, and can now be carried out online via sophisticated Web portals. In turn, dematerialization has led to downsizing, allowing banks to reduce personnel and other operational costs.

More recently, banks started de-materializing physical artifacts, like receipts, that can now be sent as email and not directly delivered to users, and checks. Processes involving checks are potentially very profitable for banks, as check clearing is carried out within the banking system, without the need of sharing profits with intermediaries. However, two big issues of checks management have hindered their diffusion in the last years:

- From the bank side, checks involve high management costs with respect to other payment methods (UK Payments Administration, 2008);
- From the customer side, checks are considered vulnerable to frauds.

Nevertheless, Vines et al. (2012) have shown how checks are perceived by many customers as an attractive payment method. Continued customer interest in checks as a handy payment instrument motivates the development of de-materialization technologies targeted to reducing check management costs and prevent known frauds.

In this chapter, the authors propose a novel framework based on secure traditional encryption algorithms, digital signatures, and online verification systems, to be applied to checks in substitution of obsolete solutions like magnetic ink, ultra-violet verifiers, and watermarks.
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