
Preface

At the core of this book is the interplay between technological and business innovation and social practice. Although the benefits of 50 years of rapid advances in digital telecommunications and computing technology have not benefited everyone equally, they have nevertheless transformed almost every aspect of the way we live. One area where technology has had a clear impact is in the way we conduct business. The rate of change that brings about modernity has been considerably strengthened by technological advances applied to product manufacturing, distribution, financing, and management, which arguably form the substrate for globalization and consumerism.

It is thus no surprise that businesses closely monitor advances in technology and invest considerable resources in exploring possible new applications and market opportunities. Yet, consumers' acceptance of new ways of buying and selling depends as much on business and technology as on our society's culture and the culture of the material environment that defines our values, sensibilities, and thus our commitments.

Moreover, the rate of technological innovation is such that to the consumer, technology implementation is fully opaque. Nonetheless, opportunities to carry out commerce in novel ways also introduce risk to established social structures, conventions, and institutions. In modernity, risk management is one of the core functions of society and to be successful in this, societies depend on their trust of experts. Experts take risks on behalf of society and are responsible for evaluating the full extent of a particular set of hazards including those associated with a particular technology.

With the deployment of ubiquitous and pervasive computing for business, technology becomes indistinguishable from everyday objects and thus disappears from public view, so that even its mere existence is not immediately obvious. Unlike previous technology generations, its operation is silent and its inner workings less accessible than at any other time in the past.

But technology and business do not always combine seamlessly either. Often, technologists have limited interest in the business implications of technology which they view as being dominant over all other aspects of commercial

activity. This was illustrated in the 1990s during the boom of electronic commerce when business startups expected to dominate the market often on the basis of a single technical innovation, frequently without a viable business case.

This was also the period in which the concept of ubiquitous commerce was born: Throughout 1999, Anatole Gershman and his team at Accenture Labs were looking at mobile telephony as a channel for commerce. Most of the ideas they initially considered they rejected because of their narrow focus on the technical capability of the mobile phone and their limited appeal to consumers. In August of that year, while waiting a flight out of O'Hare Airport at Chicago, they observed different people using their telephones and it became clear to them that what is truly different with mobile phones is that they offer ubiquitous opportunities for negotiation and transactions, thus for ubiquitous commerce.

While this interpretation of ubiquitous commerce became a core theme for the work carried out at Accenture Labs, others also arrived at a similar concept starting from a technological perspective. Indeed, by the late 1990s computing research was turning its attention to a concept that first emerged earlier in the decade and while referred to by different names it was increasingly known as ubiquitous computing. Many asked what would be the applications when this technology could be used for commerce.

Another development that contributed in making ubiquitous commerce the focus of different research programmes in the early 2000s, has been the increased interest in Radio Frequency Identification. This technology allows for the augmentation of artifacts with computational and limited wireless communications capability at very low cost, thus providing a viable solution to one of the core concerns of ubiquitous computing. Recently, RFID has been used in a variety of practical deployments with businesses increasingly interested in implementing ubiquitous commerce at a large scale.

These different views came together in October 2003 at the first ubiquitous commerce workshop organized in conjunction with Ubicomp 2003 in Seattle, WA, USA. During this workshop different aspects of ubiquitous commerce were discussed and the tensions highlighted above surfaced. This book is the extension of the discourse that started with that workshop, enriched with contributions from several more authors. I hope it provides useful insights into the technological, business, and societal aspects of ubiquitous and pervasive commerce.

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