

Foreword

Pervasive computing, ubiquitous computing and ambient intelligence. These are just three phrases which describe a rapidly growing area of research and, especially in recent times, the phrases also describe numerous innovative applications of computing. Novel combinations of hardware and software are required to realize applications embedded in our daily life and work. A key aspect of pervasive computing involves embedding sensing, networking and computation into everyday objects and everyday life processes. To do this is non-trivial and involves innovations that will continue many years from now. Innovations include new concept systems that previously are not feasible but now feasible due to fundamental advances in hardware and networking.

This book provides an exciting overview of developments in pervasive computing technology, security concerns in pervasive computing and innovative applications and strategic trends. While in recent years, numerous authored and edited books have emerged in the area of pervasive computing, this book provides an important “brick” towards building the pervasive computing “high tower”, with diverse perspectives. I trust you will enjoy the range and diversity of, not only technology, but also applications this book offers, while capturing the spirit of making computing ubiquitous and pervasive.

The pervasive computing vision has reached across the globe so that work on the area is being carried out in numerous groups worldwide, in developed and developing economies and nations. Recent conferences in pervasive computing suggest extensive work done in different continents, and this book includes contributions from India, USA, Australia and Taiwan.

Pervasive computing is multifaceted; it is not only technological issues of software development or hardware design that are concerns, but also user acceptance and adoption of the technologies, touching on policy and management issues, be it company-wide or city-wide, as also noted in this book. Since pervasive computing applications affects daily life and influences aspects of our life, including health care and simply interacting with computers, specific applications in healthcare or general human-computer interaction are also considered in this book.

Indeed strategic applications of pervasive computing to maximise benefit and acceptance is still fairly unexplored ground even as new technologies continue to emerge without necessarily immediate uptake. For example, if I could track the locations of employees, as a manager, should I do so, and what benefits would there be in doing so? If a hospital could track where its equipment goes, how would that be helpful versus the cost and maintenance required – would that help in resource allocation? If I could interact by voice with a system or with the machines in the office, is that beneficial? If I could add wireless access to materials for the company or restaurant, is that beneficial? How would mobile services and location-based systems impact on healthcare and the environment? How could sensor networks be used in healthcare, business process, manufacturing or environment monitoring effectively? The question of

strategically applying such technology for business or individuals, or for a city or nation, remains an interesting one, and this book is aptly titled.

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