

# Pervasive Computing for Business:

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## Section 1

### **Pervasive Computing Applications in Intelligent Decision Making, Advertising and Emotions Expression**

#### Chapter 1

Pervasive Business Intelligence: Opportunities and Challenges.....	
<i>Snjoy Pal, IIM, Ahmedabad, India</i>	
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The main focus of this chapter is Pervasive Business Intelligence. This chapter begins with the concept of pervasive computing, pervasive devices in general, and its technological factors and then examines the impact of pervasive computing on decision making. It gives detailed description of Business Intelligence, real-time Business Intelligence and pervasive business intelligence. It signifies that in Pervasive business intelligence various devices will not only capture and transmit data, but would also analyze and take actions up to certain extent. It further proposes various applications of Pervasive Business intelligence and discusses Pervasive BI Pertinent Issues.

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<i>Jarmo Kuusma, Helsinki School of Economics HSE, Finland</i>	
<i>Jaana Simola, Helsinki School of Economics HSE, Finland</i>	
<i>Anssi Oorni, Helsinki School of Economics HSE, Finland</i>	

This chapter identifies attention as one of the most limited mental resources and discusses the impact of decreasing size of Pervasive devices and increasing rich media on the capacity of our visual attention. This chapter describes the impact of repetition and attention on recognition for four types of online ads: horizontal and vertical ads appearing in both animated and static forms. It proposes that repetition enhances recognition of ads, and that animated ads were generally better recognized while the effect of ad format was less significant.

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*Jagadish S Kallimani, MS Ramaiah Institute of Technology, India*

*V K Ananthashayana, M S Ramaiah Institute of Technology, India*

*Debjani Goswami, IBM Technologies, India*

This chapter discusses the development of a Text to Speech Synthesis System for an Indian regional language. Beginning with the history of speech synthesis it explains the composition of Text-to-speech synthesis system which is a complex combination of language processing, signal processing and computer science. Then it covers various stages of the synthesis of text to speech such as Text normalization, Homograph disambiguation, Word to phoneme conversion, Prosody and Waveform synthesis. It gives detailed example of Bengali Text to Speech Synthesis system including its specific complexities, and various methods which may be used for speech synthesis. This chapter also discusses application of variations in the prosody of the speech that yields the emotional aspects (anger, happy, normal) in Text to Speech Synthesis System.

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*Deepak Tripathi, Ministry of Railways, India*

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*Vasdev Malhotra, Y.M.C.A. Institute of Engineering, India*

*Tilak Raj, Y.M.C.A. Institute of Engineering, India*

*Ashok Kumar, Y.M.C.A. Institute of Engineering, India*

This chapter addresses the implications of markets with more and more customized products, with shorter life cycles that have in turn shifted mass production techniques in manufacturing systems to flexible automation techniques. For next generation, this chapter proposes increasing need of incorporating highly flexible and intelligent reconfigurable manufacturing systems. It discusses the concept of intelligent manufacturing systems that can maintain effective and efficient manufacturing operations with minimum downtime under conditions of uncertainty. This chapter presents some research issues

related to the development of reconfigurable manufacturing systems with pervasive computing such as Structural design of reconfigurable machines, Manufacturing process and simulation Machines, Micro electro-mechanical devices for sensors, etc.

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<i>Ainitava Mitra, Auburn University, USA</i>	

Chapter 6 discusses various applications of Pervasive computing in the Enterprise Context, such as in Automobile manufacturing. Due to increasing competition for products and services, and various suppliers of different raw materials and parts that becomes part of final products, quality assurance has become very crucial. To support the quality of final product the chapter proposes an adaptive quality assurance system that can be developed and implemented to integrate information from the various entities to facilitate decision making in a timely manner. This quality assurance system is responsive to the existing quality environment at the various sources that contribute to the manufacture of the product or delivery of the service. The chapter prepares a foundation for accomplishing such quality management objectives and proposes an approach to integrate decision making in the context of the entire supply chain.

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<i>Mohamed Hegazy American University in Cairo, Egypt</i>	
<i>Rasha Hamdy, Principal Bank of Development and Agricultural Credit, Egypt</i>	

Chapter 7 explains the Egyptian auditing scenario including the International Trage Agreement (ITA) and foreign auditing firms that has resulted in pressure to enhance audit effectiveness and quality of Egyptian auditing firm's performance. It looks at how Computer mediated communication (CMC) modes enhance the audit quality and effectiveness of FTF meetings. It identifies the most effective CMC mode and describes the effect of those communication modes on the participant's satisfaction. This chapter discusses how Computer-Mediated Communication (CMC) can enhance the auditor performance in auditing firms.

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<i>Leyla Ozer, Hacettepe University, Turkey</i>	
<i>Muhammet Mustafa Cerit, Banking Regulation and Supervision Agency, Turkey</i>	

This chapter evaluates the web-based service quality and identifies six web-based service quality dimensions; information quality, responsiveness, web assistance, tangibles, empathy, and call-back. It is

based on an on-line survey conducted by the authors on services offered by a Turkish Finn to relationships between the different dimensions of web-based service quality, overall service quality, and the relationship between overall service quality and satisfaction. One of the interesting findings was that different dimensions of web-based service qualities do not predict overall service quality, indicating that respondents independently evaluate each dimension and the overall service quality.

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	<i>Fotis Vouzas, University of Macedonia, Greece</i>	

This chapter examines the implications of ISO 9000:2000 and EQA on HR issues in the context of Greek industrial organizations while improving quality. It discusses the literature related to quality improvement and human resource, the excellence movement, etc specifically in context of Greek industry. The study reveals that the organizations approach to quality is of great influence to effective human resource utilization. It further concludes that there is a tendency to avoid the involvement of HR department on either certification or the EQA and that the status of HR department and its role is still very traditional.

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	<i>Lovorka Galetic, University of Zagreb, Croatia</i>	
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Chapter 10 discusses the importance of planned organisational change as the speed of technology adaptation is increasing. It conceptualises Organizational change as changes in technology, organizational structure, organizational culture, strategy, changes in employees' structure and changes in products and services. It considers three forms of organizational control: (1) control by one dominant shareholder; (2) control by coalition of several large blockholders and (3) managerial control and explains the influence of ownership concentration on the performance of a company that is theoretically very complex and questionable. Backed by a research study on Croatian companies this chapter further describes how to manage organizational changes in computing environment and relationship between ownership concentration and various factors such as corporate control, pattern of organisation change, etc.

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	<i>PC. Bahuguna, University of Petroleum &amp; Energy Studies, India</i>	
	<i>P. Kumari, Kanya Guntkul Mahavidyalaya, India</i>	

This chapter highlights the importance of strategic human resource management and its effect on organisational performance. It discusses the changes occurring in the business environment and its implications for human resource functionaries and the changing role of human resource management. It gives historical background of strategic human resource management and emerging future trends which might become key issues for high performance in the organization of new era. It draws conclusion on what needs to be done on the part of the HR functionaries and the organization itself to enhance the strategic fit between the various HR practices and the overall organizational strategic plan.

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<i>Sayel Ramadhan, Ahlia University, Kingdom of Bahrain</i>	

Based on a study on manufacturing companies operating in Bahrain, this chapter provides evidence on the contextual features of firms adopting Activity-Based Costing (ABC) compared to those not adopting ABC. It looks at organisational and business environment variables which appear to have influenced the adoption of ABC including computing usage. The study hypothesised that firm size, the amount of overhead costs, the level of product variety, production complexity, the degree of competition, and the degree of computer usage are factors which encourage firms to adopt ABC. Significant relationships were found between the adoption of ABC and the variables selected for the study except production complexity and the degree of computer usage.

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<i>Demetres N. Subeniotis, University of Macedonia, Greece</i>	
<i>Ioannis A. Tampakoudis, University of Macedonia, Greece</i>	

This chapter reviews one of the fundamental concerns financial institutions have, that is risk management. It discusses various financial innovations that triggered new ways in which financial institutions and Corporate cope with credit risk since the advent of credit derivatives. Financial institutions have many financial instruments, often complex products that offer significant advantages to market participants and its key players and in particular financial institutions. The chapter further explains how advanced computerization is by large the most important factor for the wide use of credit derivatives and its benefits to banks, such as more efficient loans portfolio management, further business expansion and confidentiality, etc. This chapter also describes various non financial firms benefit from credit derivatives such as financial systems' stability through increased liquidity, risk reallocation and credit risk pricing.

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*Enayatallah Najibzadehr, University of Mysore, India*

This chapter identifies the shift in the inflows of FDI to pervasive computing area in India. It explains the direct relationship between the flow of FDI and economic development and analyses the existence and nature of causalities, between FDI and economic growth in India since 1990, where growth of economic activities and FDI has been one of the most pronounced. Based on the research this chapter indicates that there is a strong correlation between FDI inflows and GDP in India and there is also unidirectional causal relation between FDI and GDP. Finally it suggests that there is no long run relationship between FDI and economic growth in India.

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*Behrooz Shahmoradi, University of Mysore, India*

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