In contemporary business paradigm, organisations compete for political power, institutional legitimacy, and social and economic fitness. These organisations mature through their interactions with various forces in their operating environment, the rules and norms imposed on them, the behaviours of their internal systems, and the cognitive patterns of the organisation, as well as the organisational members. An organisation as an institution evolves through the mutual interactions of various organisational sub-institutions. Information technologies work as the binding factor that integrates these sub-institutions and give the organisations technical, social, cultural, and organisational legitimacy. This form and legitimacy, in turn, defines how organisations evolve technically, financially, structurally, and culturally. This book focuses on research that explains the reciprocal relationship between technology and organisations and the intended and unintended impacts that this relationships creates.

Technology implementation is the organizational effort to diffuse and appropriate technology within the user community. This user community has some aspirations attached to the use of technology, which characterise the values and interests of various social, political, and organizational agents. Effectiveness of technology implementation and adoption, therefore, is subjective to prevailing operating environment and the social and cultural context of the organisation. However, technology implementation is not a one-off incident of its endorsement within the organisational environment; in fact, it is a continuing process of learning aimed at the evolving use of technology shaped and reshaped by the interaction of technology with the changing operating environment. Contemporary business organisations, however, are more concerned about the physical implementation of technology rather than the factors and the causes and effects that help shape the use of technology in the organisation. As a result, technology implementation is seen as a non-strategic activity aimed at providing a quick-fix solution to information management and exploitation and process automation issues of the organisation. Business technologies in general and information systems in particular, however, are social systems and play an integral role in the organisational effort towards evolution of its structures, culture, and operations. Technology implementers should, therefore, not aim at “adaptive” fixing of the organisation’s information and automation issues; instead, they should aim at the institutionalisation of technology within the operating environment to maintain legitimacy, power, and social and economic fitness of the business on an ongoing basis.

The way technology is implemented and adopted provides the foundations for technology institutionalisation in the organisation. Technology implementation and adoption, however, is governed by two quite opposing views. In a technology-driven view, humans are considered passive entities, whose behaviour is determined by technology. It is argued that technology development follows a casual logic between humans and technology and therefore is independent of its designers and users. This mechanistic view assumes that human behaviour can be predicted, and therefore, technology can be developed and
produced perfectly with an intended purpose. This view may hold true for objective systems, such as microcontrollers, which have a determined behaviour, but for information systems this view is limiting due to its disregard of human and contextual elements. A corollary to this objective view is the managerial assumption that information systems implementation always increases productivity and profitability. This view is based on the notion that social and organisational transformation is measurable and therefore can be predicted. Consequently, management decisions are governed by the expectations from technology rather than the means that enable technology to deliver the expectations. The opposing stance to the traditional technical view is liberating and takes a critical scrutiny of the deterministic technological and managerial views of the relationship of technology with human, organisational, and social dimensions of an organisation. This view illustrates that technology has an active relationship with humans, who are the constructors and shapers of technology use in the organisation. Technology users, therefore, are active rather than passive entities, and their social behaviour, mutual interaction, and technology use continuously influences the overall context of the organisation. Organisational evolution through this influence is not a linear process and represents intertwined multifaceted relations between technology and sub-organisational institutions, which makes organisational behaviour highly unpredictable. As a result, there is growing recognition among contemporary business organisations that technology implementation in general and information systems implementation in particular, strategic translation through accomplishment of social action, and technological maturity in an organisation is being viewed as an outcome of strategic choices and social action.

Technology implementation and adoption theories can be classified into three broad categories (i.e. technology determinism [such as information processing, task technology fit, and agency theory], socio-technical interactions [such as actor network theory, socio-technical theory, and contingency theory], and organisational imperatives [such as strategic competitiveness, resource-based view theory, and dynamic capabilities theory]). Technology deterministic theories adopt a mechanistic view of organisations where technology is applied to bring about desired results. Technology determinists believe that technology is the prime enabler of change and, therefore, is the fundamental condition that is essential to shape the structure or pattern of an organization. Technology determinism argues that social and cultural shaping of an organisation is characterised by technology and has minimum or no influence from human and social aspects. Karl Marx is often cited as one of the earlier determinists, with his statements like “windmill gives society with the feudal lord: the steam-mill, with the industrial capitalist.” Technology determinism, however, embodies two different principles. The first principle states that technology development follows a progressive path, one in which older technology is replaced with new technology, and denying this progression is to intervene in the natural order. The second view argues that technologies act on social interactions in a predictable way. Having its origin in research focusing on rationality of technology, technological determinism therefore calls for implementation of technology to bring about foreseeable changes.

Organisational imperative theories focus on the relationships between the environment that the business operates in, business strategies and strategic orientation, and the technology management strategies to achieve desired objectives. The fundamental postulation of this perspective is that strategic planning is the key to organisational effectiveness and efficiency. It argues that management has unrestricted control over choice of technology and can, therefore, control the impacts of its application in the organisation. A business organization can thus be viewed as a brain that induces fragmentation, routinization, and binding of decision-making practices, which make it a manageable system. These theories follow a top-down approach and generally represent activities such as formulation of an information policy aligned with
the business strategy, followed by the information architecture that is designed to cater to the business needs. This architecture becomes the foundation of technology strategy, thereby providing a roadmap of technology development and implementation. In summary, consideration given to technology planning in organisational imperative theories outclasses technology implementation.

Socio-technical theories are focused on the interaction of technology with the social context of the organisation and aim at fashioning these interactions to produce desired objectives. These theories stress the importance of social choices in implementation of technology within a particular context by employing participative techniques. Socio-technical theorists regard business technologies as social systems, where their use is shaped by the people with varying interests. These theorists, thus, argue that human, organisational, and social factors have a direct relationship with technology. These views focus on the change that takes place in response to technology implementation, through the interaction of various actors within the organizational context that shape and reshape technology use. The underlying assumption of this approach dictates that success of technology implementation cannot be predetermined or predefined; it depends upon the way different social and human variables react to technology adoption within the context of the organization. The socio-technical approaches focus on the way technology-enabled processes are managed at the local level, which requires line managers to be aware of the organisational capabilities and constraints, so as to fashion the use of technology within these conditions. Nevertheless, even though the relationships between technology and the context may be well established and tested in organisational and socio-economic settings, the emergent and unpredictable nature of human action may change the development, requisition, and institutionalisation of technology.

Regardless of the approach, technology implementation is a continuous process aimed at organisational learning through alignment between the organization’s strategy and diffusion and application of technology within the organisation, guided by the value profile that stakeholders attach to implementation and is shaped by the organizational context and actors. The degree of technology absorption or assimilation within the organisational context is influenced by the technological, organisational, and environmental context, such as organisation structure and size, culture, degree of specialization, centralization, and formalization, and users’ attitudes towards technology. Technology appropriation and assimilation, thus, depends on how effectively it becomes a part of the organisational routines and is embedded with the job descriptions of employees. Technology institutionalisation is characterized by its continuous interfacing with organisational, technical, social, cultural, environmental, political, and other institutional factors. Institutionalisation is achieved when technology becomes deeply ingrained in the organisation’s operational and cultural environment, such that its use is taken for granted to ensure smooth functioning of the business. This leads to acceptance of technology use as an order of settled behaviours or norms approved by all members of the organisation. Use of technology, thus, evolves continuously and helps the various sub-institutions of the organisation grow and mature in sync with each other.

This book brings together theories, practices, developments, and challenges in adoption, diffusion, assimilation, and institutionalisation of business technologies. It is a significant representation of high-quality theoretical and empirical research aimed at advancing our understanding of contemporary business technologies. This book addresses a wide audience. It is particularly useful for business managers and practitioners and researchers interested in the field of technology implementation, assimilation, and institutionalisation. It provides comprehensive coverage of issues, theories, and discussions on the subject for researchers investigating the role of technology in organisational evolution and maturity; and researchers and coursework students specializing in technology diffusion and adoption, social shaping of technology, business-enabling technologies, and organisational information systems.
This book is a peer-reviewed publication, where each chapter has been blind reviewed by at least two reviewers. It has 15 chapters and is divided into three sections. The first section includes three chapters and discusses conceptual foundations of adoption, assimilation, and institutionalisation of technologies in business organisations. The second section comprises five chapters and offers a selection of seminal issues and challenges that contemporary organisations are facing in emergent business paradigm with regards to adoption and assimilation of enabling technologies. The third section has seven chapters and presents case studies that cover various aspects of adoption, assimilation, and institutionalisation of business technologies.

SECTION 1: CONCEPTUAL FOUNDATIONS

This section has three chapters, which provide insights into theories relating to adoption, assimilation, and institutionalisation of business technologies. The first chapter of this section is titled, “Power Relations in Information Systems Implementation: The Potential Contribution of Turner’s Three-Process Theory of Power.” It discusses power relations in technology implementation projects in the light of previous research carried out by Foucault, Giddens, Clegg, Lukes, and Latour. It argues the importance of these relations and asserts that technology implementation projects redistribute information and power in organizations and are thus implicated in both project progress and ultimately project success. This chapter calls for consideration of a new theory of power and social influence from social psychology for information systems implementation research.

In the next chapter, “Antecedents to Individual Adoption of Cloud Computing,” factors that influence individual adoption of cloud computing, measured by the intentions to use cloud computing for personal needs are examined. Drawing upon the cloud computing and online service literature, it recognizes 11 antecedents to individual intentions to use cloud computing. The study expands the view on cloud computing adoption among individual users with a multiplicity of factors and an integrative framework and highlights the tradeoffs between benefits and risks in adoption decisions.

The third chapter in this section, “Technology Institutionalisation through Technological, Organisational, and Environmental Isomorphism,” posits that implementation and assimilation of information systems need to be culturally, organisationally, and technologically composed, such that their use becomes routinized and institutionalised and embedded with the business’s work processes and routines. It argues that institutionalisation of technology occurs through conformance with environmental, organisational, and technological institutional mechanisms, whereby organisations seek legitimacy, efficiency, performance, and success within their operating environment.

SECTION 2: ISSUES AND CHALLENGES

This section features five chapters highlighting various issues and challenges of adoption, assimilation, and institutionalisation of business technologies in contemporary organisations. The first chapter in this section is titled “Telework: Not Business as Usual.” examines the technology, human resource management, and service quality issues that inhibit and/or support managers and employees in adopting sustainable telework programs using data from two Australian case studies. The Telework Conceptual Framework developed in this chapter provides guidance for government policymakers and managers in organisations on the choice of technology, human resource management considerations, and service quality issues relating to the sustainable adoption of telework.
The next chapter, “Cloud Adoption in Enterprises: Security Issues and Strategies,” proposes a security and migration framework with business strategic implementation guidelines for successfully adopting cloud services in contemporary organisations. It also discusses the importance of considering the security, privacy, and governance issues related to cloud implementations, along with the possible benefits of adopting cloud services in businesses.

In the third chapter in this section, “Skillset to Assimilate Information Technologies in Accounting SMEs,” a case for competencies in operating information technologies is discussed. This study proposes a model of competencies required to assimilate information technologies among accountants in small- to medium-sized enterprises. It explains how the four dimensions, namely technical skills, organisational skills, people skills, and conceptual skills are interlinked and influence each other.

The fourth chapter in Section 2 is titled, “Legal and Organisational Issues in Courtroom Technology Implementation and Institutionalization.” It discusses the legal and organisational issues that influence implementation and institutionalisation of technologies in courts. This chapter discusses different perspectives in technology institutionalisation through a five-step technology implementation process.

The last chapter in this section, “Implementing Business Intelligence in Contemporary Organizations,” explains various dimensions of Business Intelligence (BI) implementation. In doing so, it uncovers business value of BI, trends in implementing BI, and practical guidelines for implementing BI. It argues the importance of implementing BI systems to enable useful transformation of information into valuable knowledge to increase organisational performance.

SECTION 3: CASE STUDIES

This section presents seven chapters, each discussing a case study relating to different aspects of technology adoption, assimilation, and institutionalisation of business technologies. The first chapter in this section is titled, “The Diffusion and Adoption of a Cloud-Based Enterprise System in Danish Municipalities.” It addresses how Opus (a modified SAP solution delivered as a cloud solution) is interpreted, diffused, and adopted by Danish municipalities. It is based on a theoretical framework using the organizing vision and diffusion of innovation theories. The study concludes that diffusion is strongly influenced by regulative, normative, and cultural-cognitive pressures. Institutional processes play an essential part in the early and late diffusion of information systems innovations and in the creation and evolution of an organizing vision such as Opus for Danish municipalities.

The second chapter in this section, “Exploring Physicians’ Resistance to Using Mobile Devices: A Hospital Case Study,” explores factors that influence resistance to using mobile devices, thereby hindering the potential benefits that these technologies can bring to healthcare. It presents the results of an empirical study conducted at a Canadian hospital where two mobile technologies were examined.

The next chapter is titled, “Why are Filipino Consumers Strong Adopters of Mobile Applications?” It studies factors such as ease of use and personal innovativeness in order to understand the consumer adoption of mobile technologies in the Philippines. The findings of this study show a significant amount of variance explained for behavioral intention to use mobile applications. This chapter concludes that personal innovation had a strong statistical impact on both attitude toward using and behavioral intention to use.

The fourth chapter, “Citizen’s Voice and Adoption of Pakistani E-Government Services,” explains the success of e-government initiatives in Pakistan. It discusses the factors influencing citizens’ e-government
service adoption using unified theory of acceptance and use of technology model. The findings indicate that, in addition to the lack of awareness and data privacy, all of the factors specified by the model have an effect on the adoption of these services in Pakistan.

In the fifth chapter, “E-Government Adoption and Implementation in Oman: A Government Perspective,” an analysis of the factors that influenced the process of adoption and implementation of the e-Government initiative in Oman are presented. It provides an explanation of why government organisations in Oman developed and then adopted e-Government projects and how that affected their success.


The last chapter in this section, “IT Governance Institutionalisation: A Case of Thai Hospital,” argues that information technology governance practices need to be institutionalised in the social, cultural, technical, and structural environment to produce the desired organisational behaviour of responsibility and accountability. It presents a case study and highlights the key success factors that have led to successful assimilation of these practices with business processes, job functions, and workflows in the case organization.

Researchers in this book have developed important theoretical and empirical insights about impacts of technologies in and around contemporary business organisations. Research presented in this book explains organisational processes and structures, individual actions and organisational behaviours, and technology features that affect creation, use, and implications of business-enabling technologies. It is a comprehensive resource, which combines theoretical knowledge with applied case studies on technology adoption, diffusion, assimilation, and institutionalisation. This book opens up new streams of research by providing empirical evidence and compelling theoretical arguments for the importance of issues and challenges in the fields of organisational theory, institutional theory, and technology adoption and assimilation. I hope that it will stimulate further intellectual efforts in adoption, assimilation, and institutionalisation of business technologies.

Abrar Haider
University of South Australia, Australia