Preface

The overall aim of this book is to examine the impact of new Information and Communication Technologies (ICTs), in particular the Internet and new media communications, upon Malaysian public service deliveries. Through multiple theories of ICT adoption, network, convergence, and ICT governance models, the writing addresses three important dimensions of the impact of the Internet and digital communications, namely the Asia experience and the theoretical underpinnings of the network theories within the context of the new technologies by providing the two lenses of the perspectives on the theoretical framework and empirical issues pertaining to the impact of ICT in government services delivery system. In brief, this book sets out to critically analyse the nature in which the policy-driven network practiced by Malaysia has constantly challenged the country’s new ICT agenda, thereby posing some kind of dilemma to its complex internal ICT governance processes. This book generally deals with the transformation of the digital convergence model as a form of ICT policy adoption and the impacts it creates on the overall ICT and information governance framework in Malaysia. It also looks at the human attitudinal reactions to the use of ICT for public service delivery by assessing various theories of ICT adoption and to expose other challenges that might be hidden in application of ICT for delivering public services to the people.

The target audience of this book includes policymakers, academicians, ICT designers, Internet researchers, and postgraduate students of higher learning institutions.

OVERVIEW OF THE BOOK

The book first captures the general application of ICT in public sectors of the Asia continent to set the platform for the case study of Malaysia, which is the main focus. In the Malaysian context, this book begins with the period prior to the formation of Communication and Multimedia Act (CMA) in 1998 to its subsequent phase of development and the present. This area of assessment is of primary importance, since major decisions implemented by the government through regulatory/authority agencies like Malaysian Communication and Multimedia Commission (MCMC) and the Information and Energy Ministry, as well as the subsequent development of a new regime thereafter has special historical link during the early phase. More specifically, the central focus of this book is the new policy, regulatory, and institutional issues brought by the increasingly intensified trend of digital convergence. This arises from the fact that the initial focus on regulating bodies, such as the MCMC and the Ministry of Science, Technology, and Innovation (MoSTI), the Energy Ministry, are managed by new agencies, such as Ministry of Communication and Multimedia Malaysia (MCMM) and MoSTI, as the sole and most important entity in providing information in the area where advocating for new mode of ICT governance
forms the most critical aspect of digital convergence in Malaysia. It illustrates the implications of these intersectional and fundamental issues surrounding the design, implementation, and policy processes as depicted from the development and subsequent implementation of convergence initiatives by the government to regulate digital information. In view of this, it is essential to point out several questions focusing on issues of self-regulatory, its mechanisms, and the actual strategic decisions and behaviour of various network actors in the pursuit of a balanced achievement of good ICT governance and information processes in Malaysia.

The book shows that the practice of policy networks portrayed by various stakeholders and ministries contributes to creating a new dimension of ICT governance for effective service delivery (i.e., network governance at the national level). However, despite ICTs at the centre of the government’s growth strategy to build a genuine knowledge-based economy and society through effective information dissemination, it is found that the link between the past series of ICT policy reforms and the present character of new regime or body, policy network initiatives, are constrained by complicated ICT governance issues of different stakeholders and service providers. The analysis of the new regime’s framework as addressed by the book (convergence model) considers whether Malaysia’s initiatives are compensating for the gap between the “ethos of network governance” and the existing capacity or reality to support the process of good ICT governance and effective information dissemination throughout the country. Given the above concern, this book finds that the most important ICT convergence measures are to be found in the impact it exerts on the development of ICT and the design of Information Society agenda, and in the way in which that proliferation of convergence affects policy participation and political discourse. In addition, as informed by first-hand empirical data about the evolving nature of digital convergence and its impact on new governance, this book looks at the perceptions and actions of network actors to examine whether they have indeed changed over the years and whether these practices were in fact related to the influence of convergence within a national policy context of Malaysia’s New Regulatory Regime (MNRR).

In nutshell, the first section of the book confines its scope to analysing the stakeholder agenda on ICT adoption for controlling information, regulations, and institutional reforms that together illustrate the systems of networks and mechanisms of the ICT in line with the digital convergence model for Malaysia, in all the three converging sectors: telecommunications, broadcasting, and the Internet in Malaysia. It is argued in the book that in all three sectors these components are undergoing fundamental changes, primarily through the application of digital technology, which has significant impact for convergence policy and regulation of ICT adoption for public sector in Malaysia.

Having given the policy frameworks and models of how information and ICT adoption in public sector are regulated and managed, the book addresses various theories of ICT application in the public sector with a focus on the acceptance of such technology by people in relation to the behaviour of the users towards the adoption as well as lessons or implications contained for the policymakers and ICT designers.

WHERE THIS BOOK FITS OR STANDS

This book stands at the core value of new public management of public organization via ICT adoption and implementation. Given that greater commitments are now being dispensed by both political and executive bodies of government to improve service delivery, administration of public enterprises is re-conceptualized and re-managed as business with special reference to service delivery by harnessing the opportunities brought by technology. The idea is to administer public organizations with quality,
efficiency, and adequate satisfaction of the citizens. Reforming public sector through the adoption of ICT is not only to satisfy or meet the ever-increasing demands of the masses but also to help establish trust between the government, civil servants, and the people they serve. Hence, political leaders and bureaucrats believe that they can benefit from improvement of service delivery to people.

This book is devoted to policy initiatives for reforming public service delivery system in this era of information technology. The book firstly focuses on how governance in the new ICT is working compared to the traditional forms in this contemporary era of services delivery in Malaysia. It delves into the relationship between policy network strategies and/or models being practised and the impact they bring in the new mode of governance regarding ICT in Malaysia for better services delivery. As an essential area of investigation, the book also includes the role that the government is playing in the transition from the traditional ICT regime towards the new convergence regime in Malaysia as seen in the context of policy and network governance theories. As an important feature of new ICT governance, the value of widening the political participation was gaining a strong momentum in each pillar of the debates on government’s achievement in the information age with special references to Malaysia context.

What and how policies are utilised to reconcile the underlying tension between regulatory as well as institutional discrepancies or challenges of governance impacted by agencies in Malaysia are equally addressed. To be more specific, the book covers the different features of convergence initiatives for the success of new ICT governance agenda for effective service delivery in the country. It is argued that although the initial strategic alliance and industrial collaboration could be traced back as early as in the 1980s when Privatisation Policy was first adopted by the government; yet it was not until the late 1990s that enactment of CMA has legally pushed forward the idea of multiple engagement and became a new emerging phenomenon for ICT network governance in Malaysia. This actually extends the concept of new model of ICT governance as envisaged in the National Information Technology Agenda (NITA) leading to the framework called model of convergence. Hence, what may be the motivating factors that pull together convergence actors into the term of political discourse is a fit that was addressed in this volume. In other words, the nature of collaboration between public and industrial sectors have been significantly changed by the new framework of legal and regulatory mechanisms were brought into discussions. In the discussion, the strategies, policies, and regulatory frameworks interface between what we termed “the old regimes and the laws concerning digital convergence” are thoroughly explained. To expantiate this perspective, the extent of the legal and regulatory framework influence, its complement, and/or even substitute for the new mode of collaboration and what brings about a different and more effective way of ICT governance model are covered. Furthermore, the book draws attention to human reactions or attitude, especially of the civil servants towards the technology provided along the line of theoretical frameworks of ICT in the literatures to investigate the reality in Malaysia. Thus, the book bridges the gap between theoretical assumptions and what is actually happening in practice with respect to technology adoption for service delivery in the Malaysian public sector.

ORGANISATION OF THE BOOK

Apart from the introduction, the book is organized into three sections with a total of 15 chapters. Section 1 is comprised of Chapters 1-5, while Section 2 is made up of Chapters 6 through 8. Section 3 of the book is comprised of Chapters 9 to 15, including conclusions and recommendations. A brief description of each chapter is as follows:
Chapter 1 of the book presents the general adoption and applications of ICT in public sector with special references to Asia experience. To set the scene, the chapter examines e-government application in public sector and how it provides interactive access of people to social services, employment assistance, tax and revenue services, corporate registration, licenses and permits or renewals, which are possible through a common entry point and shared portal services provided by government agencies around the world and Asia countries. Thus, the chapter explores interactive model several factors which are driving forces for the application of e-government in various government entities in Asia and anywhere else in the world. These include potential benefits, potential challenges particularly in the technology development, such as growing of computing power and telecommunications bandwidth, business investment in adoption of technology, and competitive pressures. However, the findings in the chapter also reveal that e-government application in public sector is associated with many issues, especially privacy and security of data information and many other related problems that can leave people reluctant to adopt or use the ICT system. It is therefore argued that e-government application in public sector should be value-driven and not technology-driven. Some future directions for coping with challenges in ICT applications in the public sector are also highlighted.

Chapter 2 discusses the wave of digital convergence on ICT adoption and application in Malaysia. The chapter examines how much Malaysian convergence policy has achieved, in response to global reform, since 1990s. The chapter discusses policy and regulatory implications as well as the nature of new mode of ICT governance with particular focus on digital convergence model. The analysis draws on the scope of collective action that has been compared with the widening of participation of different key players in ICT adoption in Malaysia. Thus, this chapter explores convergence model and how public policy, MNRR, and institutional reforms affect the continuous search for new mode of governing ICT, in consequence with the global march towards technology and knowledge society. The first section, in particular, gives general accounts of the early formation of convergence policy practices and its effect on the ICT governance processes, locating it at the centre of network model and policy network literatures. The second section gives special overview of the evolution of new private self-regulatory regime, which is of direct relevance to the new ICT governance model. Finally, a conceptual framework for the promotion of new mode of governance in ICT adoption is identified as a basis for evaluation as factor that unfold Malaysia’s digital convergence schemes.

Chapter 3 sets a focus on model of digital convergence of ICT adoption within the framework of network governance policy. This chapter considers the literatures relevant to a study of the impact of digital convergence upon ICT governance policy that impinges the overall manifestation of ICTs in the public sector today including Malaysia. The central theme of this chapter has highlighted the proliferation of ICT agenda, with particular reference to digital convergence, and eventually show that the mode of ICT governance model is affected by three important factors: first, policy network; second, new legal or regulatory environment; and third, institutional reforms which does not only addressed the rise of the policy network perspectives but also showed that the representation in digital age is about innovation and participation of key ICT players or actors that dominate government service delivery system. The chapter opines that emergence and development of digital convergence will enrich ICT governance policy beyond technological factors only. Thus, the chapter concludes that the digital convergence that is believed to influence ICT policy network and growth does not occur in a vacuum. The key actors must be regulated and managed with effective legislation to achieve the goals ICT adoption.

Chapter 4 examines new society and ICT adoption with references to investigation on the link between policy network and network management by the government. Thus, following the proliferation of the new
multimedia and ICTs, the chapter highlights a new emerged metaphor that impinged on modern societies: the network society. In this chapter, discussions about public actors and policy networks relationships are highlighted and it is asserted that network theory, by no means, presumes that governments are like other actors. The findings show that governments have access to considerable resources ranging from sizeable budgets and personnel, special powers, access to mass media, a monopoly on the use of force and democratic legitimisation, which bear impact on ICT adoption and management. However, these are not without limitations, especially when they enter the network games with other network actors. In explaining the theoretical framework as well as the practice of self-regulation, the concept of “power-dependence” is examined in the chapter in relation to the digital management. The chapter identified this as being instrumental in bringing some notable changes and achievements in numbers of areas such as policy orientation, market flexibility, industry initiatives, as well as the general attitudes and responses of the public or consumers at large and eventually to facilitate the formation of a networked society.

Chapter 5 of the book addresses models of political representation for ICT adoption in a networked society. This chapter is a complementary discussion to Chapter 4. It examines the role of parliament within contemporary democratic ICT governance by addressing discussion on political online communication from the perspective of four different models of political representation. The chapter concludes that online discussion is a symbol of a political representation in the networked society. In this context, the chapter finds technology as transformative agent such as the Internet that allow representations of different actors possible, whereas the Internet itself is seen as support to the existing relationships between parliamentarians and their constituents. The chapter concludes that online political representation should not be understood in a limited nature of political process such as electoral or referendum purposes but must be “outcome” based, for example, getting the “right” information into the space for discussions, promoting the Internet communication as the innovative conduit for quality participation towards sustained democracy.

Chapter 6 explains the Theory of Reasoned Action (TRA) and its relations to ICT adoption and application in public sector. The findings in the book have shown some generic issues related to human side of adopting technology system for accomplishing designated works in public sector. These include, according to theoretical underpinning of this framework: the attitude, subjective norms, and intention. It shows that sole intention to use the technology is a function of both attitude and influence of colleagues in the organizational environment. Actual use of such technology may not take place as expected if there is no strong intention and that strong intention can only happen when the bureaucrats or civil servants at large had developed a positive attitude towards its utilization for accomplishing tasks. However, the chapter highlighted some limitation of TRA, especially on the issues of its applicability to non-volitional behaviours for policymakers and technology designers.

Chapter 7 explained the Theory of Planned Behaviour (TPB) and its expansion in relations to ICT adoption and application. It is another fundamental theory that help explains human reaction to ICT adoption in public sector. The Theory of Planned Behaviour (TPB) was mainly developed to improve the predictive power of the earlier Theory of Reasoned Action (TRA). According to the findings in this chapter, the main message of TPB is the introduction of Perceived Behavioural Control (PBC) which is considered a critical aspect of technology acceptance among public workers. The chapter highlights that since PBC is the degree of difficulties in performing behaviour (i.e., response perceptual reaction to adopting ICT) would interactively predict a behavioural reaction of human being to technology whereby man’s intentions become stronger predictors of behaviour as PBC increased favourably. However, the chapter highlights some arguments where PBC is assumed to unilaterally influence a particular behav-
Chapter 8 discusses the Technology Acceptance Model (TAM) with its expansion in relation to ICT adoption and application in public sector. The chapter explained the trends and huge changes in technology environment and its wider applications, with special reference to TAM2, which expands the original TAM framework. The aim was to equip the original TAM with other eliciting belief variables, which are external to the perceived usefulness component of the TAM1. In order to further complement the practical significant use of original TAM in assessing acceptance of technology by users, the chapter discuses TAM3 with main focus of attention on the determinants of perceived ease of use that was not addressed in TAM2. The chapter addresses more pressing issues from technology acceptance to adoption with special reference to individual differences, system characteristics, social influence, and facilitating conditions as the determinants of both perceived usefulness and perceived ease of use. The findings in this chapter have shown that the utility aspect of technology is important in terms of outcomes of using a technology to accomplish tasks, yet the ease of using it in terms of perceived facility is equally crucial for the end users. Therefore, in the context of public sector adoption and acceptance of ICT, it means effect of some external variables, such as the features of the technology systems, its development process, and even training, are crucial to address for making the technology usage easy for people by designers.

Chapter 9 addresses the empirical Investigation of ICT usage in Malaysian public sector using Extension of Theory of Reasoned Action. Based on the call for extension of theories and models in the part II of this book, the original Theory of Reasoned Action (TRA) has been extended to fit the context of ICT usage in one of the chosen public organisations as a case study. A preliminary focus group interview was used to underpin and identify the most pertinent issues related to usage of ICT in a particular public organization. Based on the result, prior experience was introduced into the original theoretical framework of TRA as antecedent of attitude towards use of ICT in that public organization. As a new variable of interest added to extend the TRA, the causal link between prior experience and attitude was found to be statistically and positively significant. The chapter also sought a new finding of significant relationship between the link direct link of subjective norm and attitude variable as part of TRA extended model. These two findings provide a new dimension for academic investigations that does not addressed earlier. Based on such findings, the chapter concludes that the practical significant contribution to the public sector is that adoption of ICT is one thing but technical know-how and/or the experience of how to use ICT successfully to accomplish the goal of adoption is the most important. In other words, experience of how to use ICT and the presence of important individuals such as colleagues to give motivation and positive impression would make a user form positive attitude towards using ICT to do work.

Chapter 10 of the book conducted empirical investigation of ICT usage in Malaysian public sector using extension of theory of planned behaviour to bridge the gap between theory and practice using a problem-based approach of perceived usefulness of ICT among the subjects of the study at one of the government agencies in Malaysia. Thus, the study has extended the original TPB model by inclusion of perceived usefulness as antecedent of attitude of the respondents in this chapter. Statistically, the result obtained has reflected the relative importance of this newly construct added to the original model. In this context, perceived usefulness was found to have highest structural correlation with behavioural attitude. The chapter highlights the practical significant of this finding and formally confirmed the call to modify theory of planned behaviour, which was earlier discussed in the book. Based on the findings, the chapter concludes that perceived usefulness of technology can make users form a positive attitude towards intention to use the ICT system. In addition, the findings also show that perceived usefulness
would strengthen the positive attitude towards use of ICT or can help change negative perception of users to positively use technology system. Thus, the practical significance of such findings to both policymakers and industries is that technologies must be made useful in achieving the purpose of adopting them in any type of organisations.

Chapter 11 examines the empirical Investigation of ICT Usage in Malaysian public sector using extension of technology acceptance model using another extended variable that was based on a problem-based approach via the results of the focus group interview. The most important additional contribution of the chapter was the focus on the external variables to perceived usefulness and perceived ease of using i-class at university. The university has adopted e-learning using i-class system through which teaching and learning are facilitated as alternative method of delivering knowledge to students face-to-face. Since majority of targeted group of students learning through this mode are adults, perceived computer self-efficacy, perceived convenience, and subjective norm were confirmed during the interview section and used to extend the original model. The findings in this chapter show that the rate at which the targeted students are using the system was very poor. Only a minimal number per whole week devoted their time to access i-class system for their studies. The chapter concludes that poor participation could lead to failure of technology device in public sector. The findings show that ease of using the i-class is relatively different from one student to another and it all depends on individual level of technology savvy and computer self-efficacy.

Chapter 12 empirically investigates ICT usage in Malaysian public sector using extension of technology acceptance model with trust in technology system as moderator. The chapter examines the moderating effect of trust in technology system. The inclusion of pertinent variables such as system factors, self-efficacy, and trust make a different to original Technology Acceptance Model (TAM) in this chapter. Based on the new findings, this chapter concludes that system factor, self-efficacy in individual factors, word of mouth in social factor play important roles in the use of ICT by MPs to engage their electorate when these variables are moderated with trust in ICT adoption. The chapter concludes that provision of e-parliament system is not enough until the MPs are really trained for appropriate use of ICT; otherwise, they might be reluctant to use the system due to lack of skills and capability and issue of self-efficacy. In addition, there is a need to gain people’s trust towards ICT in terms of perceived usefulness and ease of using it to achieve the primary goals of technology devices.

Chapter 13 is devoted to empirically examine ICT usage in Malaysian public sector using a modified-extended model of Unified Theory of Acceptance and Use of Technology. The chapter uses the background information gathered from one of the Malaysian agencies to modify and extend the model in the context of local and organizational culture. Thus, the modified-extended model used in this chapter has statistically examined the relationships between predictors such as performance expectancy, effort expectancy, social influence, facilitating condition, and behavioural intention to use ICT with moderating effect of gender difference at the organization. In addition, it has also examined the relationship between facilitating condition and actual use behaviour as well as the moderating effect of gender difference on each predictor and behavioural intention. The findings confirmed a positive and significant relationship between three predictors and behavioural intention as well as actual use behaviour of ICT device among the staff. However, the finding shows a negative and insignificant relation between social influence and behavioural intention. The chapter concludes with another interesting finding that there is a significant impact of gender on the various predictors and predicted variable as clearly discussed.
Chapter 14 addresses the general prospects and contending issues among the actors and/or players that can affect impede on effective implementation of the Malaysian ICT policy adoption. The chapter reflects that since the middle 1990s there was a gradual but systematic public and private sector initiatives towards ICT agenda with the prominent role of the state. A remarkable launch of the National Information Technology Agenda (NITA) and the Multimedia Super Corridor (MSC), which sets forth the future agenda related to the Information Age, promises greater expansion of the ICT for the country’s mode of service delivery to meet the public demands. While the liberalization of telecommunication sector which paves ways for the proliferation of the new Communication and Multimedia (C&M) industries could be regarded as Malaysia’s response to deal with the ICT governance model in the innovation policies regarding ICT, the eventual development of MSC has not resolved the issue of digital divide, indigenous R&D, and employment opportunities. Although not financially, the state considers ICTs’ strategic contribution through the provision of consultancy and technical advisory services and the deployment of MSCs’ developmental and marketing programmers to realize the MSC Malaysia national rollout and MSC Malaysia agenda are highlighted. The chapter also highlights various issues associated with digital convergence and how they were affected by the three critical factors: the innovative policy, the regulatory, and the institutional reform, within the context of the Malaysian ICT agenda since the middle 1990s.

Chapter 15 summarises the overall findings and main results of the theoretical and empirical research. The analysis contains an assessment of the extent to which the Malaysian digital convergence have followed the practices of an ideal network governance to see if there are other practices or methods adopted in their efforts to manage conflicts. In addition, the chapter also incorporates some of the insights provided by other theories or approaches to explain the Malaysian contextual model. This is an overview of alternative approaches used by various scholars to analyse Malaysian network governance development as well as its responsiveness, which may give different interpretation of the Malaysian model of ICT convergence. It focuses on qualitative data description and analysis in order to assess alternative governance strategies for Malaysian eAgenda. Some policy implications and recommendations on how to improve the current governance policy and strategy are also included in this chapter.

Abdul Raufu Ambali  
Universiti Teknologi MARA, Malaysia & Kwara State University Malete, Nigeria

Ahmad Naqiyuddin Bakar  
Universiti Teknologi MARA, Malaysia

ENDNOTES

1. Network actors is used interchangeably with convergence actors to denote the parties involved in a policy discourse about ICT adoption.

2. The focus on policy, regulatory, and institutional politics of reform ICT points to the digital convergence discourse, so much so to highlight the sectoral domains of convergence in the C&M sector, albeit largely from telecommunications and broadcasting perspectives.