BOOK REVIEW

E-Health Care Information Systems: An Introduction for Students and Professionals

Ankur Bhatnagar, Wayne State University, USA
Rakesh Prabhu, Wayne State University, USA

_E-Health Care Information Systems: An Introduction for Students and Professionals_, a book by Dr. Joseph Tan, epitomizes a storehouse of innovative concepts, tested theories and practical know-hows about the past, the present and the future of E-Health Care Information Systems. The book uses a multi-theoretical and field-tested approach towards the application of e-health care ideas in existing, traditional business models. The author not only summarizes multiple perspectives but also reflects on the current challenges in the globally changing environment of e-health care applications due to the growing popularity of the Internet and fast-paced advancing computing and networking technologies. Through the use of relevant case studies, the author also helps shape some of the key ideas discussed and illustrates different aspects of e-health care issues and challenges faced in sustaining the e-business paradigm. Among the key e-health care factors addressed in the book is the purpose and benefits of e-health records, the importance of e-networking, the development of e-medicine in developed and developing countries and the emphasis of health care in home and tele-home care.

In general, the 16 chapters of the book may be roughly grouped into five parts, although each chapter stands out on its own. The first two chapters of Part I provide a detailed e-health overview by identifying the basic components of an e-health system and focus on specific alignment of e-health in today’s world. Chapter 1 introduces the history of computing in health care and recognizes how this process relates to the evolution of the e-health paradigm. This chapter lays out the underlying basic components of an e-health system and recognizes the pressures an e-health system faces due to changing demographics, changing governments, a changing e-technology marketplace, and changing health care environments. Chapter 2 moves to realize how the e-health paradigm shift has resulted in business models that differ from traditional health care. Overall, the emphasis is on identifying the primary goals and benefits of e-health systems by articulating the range of potential barriers and challenges to implementing e-health applications.

Part II, Chapters 3 through 6, focuses the discussion on e-health foundations. Chapter 3 offers an in-depth understanding of various e-health perspectives. This chapter allows the reader to take a closer look at the gradual breakdown of conventional thinking about organized
health care delivery systems. Chapter 4 leads into e-health’s conceptual foundations, including the significance of e-health records (EHRs) as the lifeblood of e-health. It attempts to explain the purpose of EHRs followed by their benefits and hurdles leading to future issues in EHRs. Chapter 5 introduces e-public health information systems as the most fundamental e-health applications. Chapter 6 attempts to explain the complexity of e-networking as the skeleton structure for framing e-health in the past, present, and future.

Part III, Chapters 7 through 11, begins by examining how various e-health domains and applications are interrelated. Chapter 7 highlights e-rehabilitation as part of e-medicine services and relates it to other e-health care services, providing an overview as well as a set of concepts that are explored in the other chapters of Part III. Chapter 8 reviews the history as well as the development and growth of e-medicine as a concept, a discipline, and a practice. Chapter 9 defines e-home care and discusses the significance of home health care in the context of the mainstream health care delivery system. Chapter 10 takes an in-depth look at the E-Diagnosis Support System (e-DSS) by attempting to understand the systems architecture, knowledge representation, and knowledge inference mechanisms for e-DSS design for lower back pain. Chapter 11 comprehends the issues and challenges in e-health data mining research. Part three basically focuses on e-medicine, e-home care, e-diagnosis support systems (especially for back pain) and e-health intelligence through data mining and clustering.

Part IV, Chapter 12 through 15, shows how the management of e-health affects the health care and health services industry. Chapter 12 provides a comprehensive review of e-health strategies and applies e-business models and e-marketing concepts to e-health services. Chapter 13 focuses on e-health care technology management, covering the benefits and challenges of e-surveying health administrators and executive team members in order to generate a management perspective and measure success factors in e-health care technology management. Chapter 14 reflects the concern that all e-health stakeholders share in regard to the privacy and security issues involved in e-health data integration and aggregation. Chapter 15 articulates the positive impacts of e-technologies in many areas of the health care and health services sector. Chapter 15 also discusses the stages of e-health evolution and the future of e-technologies in the health care industry.

Part V, the final part of this book, deals with the development of trends leading to the evolution of the e-health paradigm shift. Chapter 16 recognizes the emergence of virtual reality and mobile health care as a frontier of e-health systems and environments. This chapter also analyzes the concept of consumer-driven e-health systems and links this concept with the fundamentals of e-health that have been stressed throughout this book. Finally, the chapter attempts to chart the future of e-health technologies and what humans can make of these technologies.

While this text is thoroughly recommended, four suggestions are made although these in no way undermine the value of the book. An appendix of related resources, in particular those available on the Internet would be useful, as would a greater range of information for international readers. Also most of the chapters do not cover financial terms, figures and operational procedures per se, but simple solutions gained from personal observations as to how certain costs have to be accounted for and so forth. A detailed analysis of the financial aspect of e-health would have helped the business readers. Everyone interested in learning about a vision for e-health, its foundational perspectives, applications, and strategies in this time of e-health paradigm shift would definitely gain something out of this book.

Altogether, the book is an easy read in a single sitting, although a novice, unaware of e-business issues and challenges, might have problems trying to piece together the different parts of the work. The strengths of the various chapters, however, are the use of illustrative cases and supporting data to authenticate or
refute some of the hypothesized claims. This book by Dr. Joseph Tan delivers an interesting and practical discussion of current issues in e-health care applications. It is compacted with data, ideas, concepts, theories, and cases. Yet, the reader is able to read each chapter separately without needing previous readings. In this sense, there is enough material to educate both those who are novice and/or experts in this field. By and large, the editor has assembled a panel of scholarly writers to focus on a single topic that is of growing importance. In summary, we can say that it is a broad review of e-health care concepts, theories and practices especially for the e-health care novice and a reference source to the professionals.

Ankur Bhatnagar received his MBA from Wayne State University with concentration in management, healthcare informatics, and international business. He received his bachelor’s in computer science from Algonquin College in Ottawa, Canada. Prior to enrollment in the MBA program, he was a senior software engineer for Siemens AG in Canada in their Information and Communication Networks unit. He has also worked with Nortel and Alcatel in their engineering divisions. His research focuses in the area of healthcare informatics with concentration in healthcare information systems.

Rakesh Prabhu is a MBA student at Wayne State University with focus on healthcare management. He has a MS from Wayne State University. He is currently involved in research that focuses on reducing health disparities in senior adult populations by developing personalized computer based interface programs. He is the coordinator for the International Journal of Health Information Systems and Informatics.