DEBRECENY, R., C. FELDEN, B. OCHOCKI, M. PIECHOCKI, AND M. PIECHOCKI. *XBRL for Interactive Data: Engineering the Information Value Chain* (New York, NY: Springer Publishing Company, 2009, ISBN: 978–3-642–01436–9, 242 pages, $69.95)

XBRL for Interactive Data: Engineering the Information Value Chain provides a comprehensive analysis of the eXtensible Business Reporting Language (XBRL). XBRL is the XML-based language that underpins a range of business reporting scenarios in the U.S. and other countries. The book begins with an exposition on the value proposition for XBRL as a mechanism for the exchange of business reporting information through the culmination of information exchange via tagged instance documents. It goes on to cover all the major aspects of XBRL from a largely technical perspective. Key features of the book are the inclusion of code examples and end-of-chapter case analyses. While not explicitly designed as a textbook, the book can fill faculty needs for both teaching and research. For teaching, the book is most appropriate for an advanced undergraduate or graduate accounting information systems course to serve as the reading for a module on XBRL. For research, the book provides the knowledge base necessary to identify research issues within the technical structure of XBRL. I found it particularly helpful in understanding XBRL dimensions.

XBRL is important to practice and academia. XBRL has been in existence for more than a decade. The standard continues to gain momentum worldwide. In the United States, the Securities Exchange Commission Rule 33-9002, released on January 30, 2009, requires the phased-in use of XBRL for reporting by public companies and mutual funds. While mandated use may be the initial driver of XBRL adoption for external reporting, companies will likely achieve synergistic benefits from internal adoption.

XBRL for Interactive Data: Engineering the Information Value Chain includes nine chapters. A section of references and recommended readings completes the book. The book begins by stating the business case for XBRL and continues building the technical aspects of XBRL throughout the remaining chapters. In addition to making a case for XBRL, Chapter 1 describes the multitude of metadata that is contained in existing paper reports that inhibit information exchange. Chapter 2 introduces XML as a means for computers to exchange semantic information to enhance understanding. Included in this chapter is an explanation of the syntax and structure of XML that is relevant to the understanding of XBRL concepts such as namespaces[1] and links.[2]

The actual introduction to XBRL begins in Chapter 3. This chapter is quite meaty, encompassing not only an explanation of the history of XBRL, but also how the components of XBRL (the XML schema, taxonomies, and instances)[3] are related. The chapter points out subtleties that often are overlooked such as open (e.g., U.S. GAAP taxonomy) versus closed (e.g., tax reporting) taxonomies. The discussion of taxonomies continues in Chapter 4, including a discussion of the meaning of element attributes. Further, Chapter 4 introduces the XBRL Global Ledger (GL): the information standard for instantiating an organization's information needs, business rules, and references. As previously mentioned, taxonomies such as U.S. GAAP are open to extension. Taxonomy extensions are covered in Chapter 5. Chapter 6 takes a step back and examines the process underlying taxonomy development (i.e., taxonomy engineering). This chapter presents taxonomy engineering as the intersection

[1] Namespaces "link elements and attributes into groups" (p. 24).
[2] Links, as the name implies, allows linking either within a single XML document or between XML documents.
[3] "The XML schema defines syntactical rules and the structure of a class of XML documents" (p. 26), while a taxonomy defines the elements contained within. An instance is the instantiation of a particular set of facts to either a single taxonomy or multiple taxonomies.

of software engineering, knowledge engineering, and ontology engineering. The key takeaway is that taxonomy development should be a structured process.

Chapter 7 provides a discussion of multidimensionality, currently a source of confusion among users. Multidimensional data is often contained in the note disclosures that accompany annual reports. The chapter does an excellent job at defining the terms and conveying the underlying purpose of dimensional reporting. Chapter 8 continues the discussion of dimensions by focusing on the engineering of dimensional extensions. The last chapter provides a discussion of the most current items surrounding XBRL, which includes the Formula Linkbase, Taxonomy Versioning, and Instance Document rendering.

Accounting information systems textbooks devote little coverage to XBRL. To teach XBRL, faculty must supplement existing textbooks with the constantly changing collection of research and practical papers available on the Internet. However, these sources of information do not provide an in-depth comprehensive starting point for technical analysis of XBRL and its implications to the information value chain. This book provides a background for the business case for XBRL as it relates to business reporting. Given the June 2009 release, I have not yet classroom-tested this book.

The key benefits of the book are that it: (1) begins with a business proposition to which readers can relate, (2) provides a good mix of theoretical and technical explanation, and (3) is comprehensive enough to meet the needs of readers with varied backgrounds, such as industry professionals, policy makers, faculty, and students, while serving as a technical reference for other readers.

While not necessarily weaknesses of the book, I would recommend a couple of small changes needed to make the book more suitable for use as a textbook. For example, at the end of each chapter the authors include a list of terms you should know; however, the reader is left to search the book to refresh their memory of said terms. It would help to either redefine the terms at the end of the chapter or to offer an end-of-text glossary. Further, given the technical nature of the material it might be helpful to have a few questions and suggested answers at the end of each chapter that users could employ to evaluate depth of understanding.

It is critical that students are prepared for the global marketplace which they enter. In an effort to ensure that students are prepared, faculty must find a way to stay current with the cutting edge of the field. XBRL is likely to impact financial reporting for the foreseeable future. In its ten-year history XBRL has seen immense change, and information about those changes has been communicated in practitioner journal articles, blogs, and white papers. *XBRL for Interactive Data: Engineering the Information Value Chain* provides a comprehensive resource that can either stand alone or serve as a reference to the hands-on application of taxonomy development, mapping, and tagging skills.

In conclusion, *XBRL for Interactive Data: Engineering the Information Value Chain* offers comprehensive coverage of XBRL from both a theoretical and technical perspective that will allow faculty to integrate XBRL into the courses and research agendas. Specifically, the book can provide the basis for further technical work within XBRL taxonomies or hands-on activities such as mapping and tagging instance documents for both teaching and research purposes.

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