An Introduction to XBRL through the Use of Research and Technical Assignments

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ABSTRACT: This project is designed to facilitate an understanding of eXtensible Business Reporting Language (XBRL). The materials are structured so that each can be used independently of the other components. The materials consist of a reading, research assignments, and two technical assignments. The reading is written to provide a background on XBRL. After obtaining a basic understanding of XBRL, research and technical assignments are used to increase the student's skill-set. The research assignments look at the evolution of XBRL. The first technical assignment modifies and styles eXtensible Markup Language (XML) tagged data. In the second technical assignment an industry extension is developed to the promulgated Commercial and Industrial (C-I) taxonomy. The second technical assignment concludes with the creation of an instance document and viewing of the instance document with a style sheet. Through an understanding of XBRL, students will possess an important basic skill-set for a technology that will likely play a significant role in the future of accounting. In addition, they should have an appreciation for the purpose of XBRL, including the nature of the technology and the inherent challenges.

Keywords: XBRL; XML; extensible business reporting language; taxonomy.

Case Materials Availability: Case materials (PowerPoint" slides and solutions) are available on request from the author.

I. INTRODUCTION

Extensible business reporting language (XBRL) is rapidly becoming the standard method for the communication of financial data among a diverse set of information consumers in the business supply chain. More than 200 organizations are involved in the adoption and use of XBRL (BankTech 2003). Given this relatively new reporting language we, as academics, are left to quickly implement the technology in our curriculum lest our students be unprepared for the workplace. However, faculty, in a recent survey, indicated that lack of faculty preparedness was a significant problem in implementing XBRL in the classroom (Karim et al. 2003).

The Hall (2004) and Romney and Steinbart (2003) *Accounting Information Systems* texts briefly address XBRL from a theoretical perspective. However, experience indicates that a "hands-on" approach is perceived by students to enhance understanding of computer

applications (Pinsker 2004). Currently, there is not a convenient method or source of materials for implementing XBRL into the classroom. The faculty who participated in the Karim et al. (2003) survey indicated that case materials and tutorials were the preferred method for implementing XBRL. This case provides faculty with a resource for implementing XBRL in an introductory accounting course. In addition, the case reading can be used to facilitate discussion in financial accounting and auditing. The case provides an introduction to programming in XML and XBRL which Foote and Karan (2001, 3) point out "should be especially relevant to accounting students who will be working in the future to integrate information systems between supply chain partners via the Internet."

The objectives of the case materials can be achieved with relatively little involvement on the part of faculty. The required level of involvement is dependent on the students' technological abilities and precise attention to details. There are ten learning objectives in the case; the means in which those objectives are achieved are included in parentheses.

(1) Understand the history of XBRL. (Reading)
(2) Identify how financial information consumers may benefit from XBRL. (Reading)
(3) Understand the implications of XBRL to the accounting profession. (Reading, Research Assignment 4)
(4) Understand how XBRL is currently being used and its potential. (Reading, Research Assignment 4)
(5) Understand how XBRL components are related. (Reading, Technical Assignment 2)
(6) Understand the due process system for the development of promulgated taxonomies. (Reading, Research Assignment 1)
(7) Use the Internet to find companies who are currently providing XBRL financial statements. (Reading, Research Assignment 6)
(8) Obtain a basic understanding of XML by creating an XML document and creating several style sheets to render the XML document using Notepad". (Technical Assignment 1)
(9) Download the current Commercial and Industrial taxonomy and create extension taxonomy. (Technical Assignment 2)
(10) Create an instance document. (Technical Assignment 2)

II. IMPLEMENTATION GUIDANCE

While the case was designed for individuals to complete, parts of the case lend themselves to completion in small groups. For example, in the first Technical Assignment one member of the team could be responsible for creating the XML file and other group members could each develop a style sheet. Further, in Technical Assignment 2 a student could develop the extension taxonomy while another student uses the extension taxonomy to prepare the instance document. By separating the assignments between group members the students may be able to appreciate the interdependency between the taxonomy developer and the creation of an instance document.

The reading and the assignments can be used independently of each other, depending on individual preferences and the amount of time devoted to XBRL coverage. Another option is to assign the students to use particular XBRL software and have them write a short report on their experience.

The first seven learning objectives are covered in the case reading and enhanced by the research assignments. Depending on your own level of proficiency in XBRL and XML this

can be enhanced with a lecture. I keep a copy of the Hoffman and Strand (2001) text on reserve for students who wish to do additional reading.

The remaining learning objectives are covered in the technical assignments. In Learning Objective 8 you will have some students who wish to get creative. This is particularly true of students who have other programming experience in HTML. I tell the students that my proficiency is limited; but, I am willing to help try to find an answer. *SAMS Teach Yourself HTML and XHTML in 24 Hours* by Oliver and Morrison (2003), as well as, *XSLT Quickly* by DuCharme (2001) are helpful resources. Because of calculation algorithms the computer often displays the styled information with extended decimals. For example, when the inventory is rendered in the gross profit style sheet, the gross profit for the "nut" is "0.290000000000000003" while I am sure we would all agree it should be ".29." The students usually panic when this happens, it is not possible to provide an advanced warning for when it is going to happen because it happens on some items they try to add and not others. I let my students know that it may or may not happen, that is nothing that they did wrong, nor is it something that they can fix.

It is possible to make Technical Assignment 2 new each semester by providing the students with a new trial balance, instead of the trial balance for Little Rock, Inc. that is included in the case materials.

Technology

The technological skills of the students will affect how much involvement is necessary from the instructor. Since students will be completing the case under a variety of circumstance it is important to address the implications of these issues.

First, computer laboratories generally do not allow students to download software. Therefore, if the students will be completing the assignments in a computer laboratory a network administrator will need to download Java". The Fujitsu programs do not present problems because they are batch files as opposed to executable files that require administrative privileges to install. Other XBRL software is available with a 30 day license; however, the software is usually an executable file. Because the download is an executable file, most university computer laboratories will not allow the students to complete the installation. This does not present a problem if the students are using their own computers. You should warn your students of this potential problem as they choose the software that they will use to complete Technical Assignments 2.

Second, if the students are completing the case using personal computers without a high-speed Internet connection the Java download is quite time consuming (around 6 hours if my memory serves me correctly). The Fujitsu programs do not take a significant amount of time to download.

Third, if the students do not download the software in the correct order the path will not be set. To fix the problem in Microsoft XP" go to "Control Panel," "System," "Advanced," "Environmental Variables," under "System Variables" highlight "Path," choose "Edit," use the arrow keys to scroll to the far right and copy the path to the bin directory for Java.

The fourth issue is relevant if the students will use the Fujitsu tools. The Fujitsu license is for a calendar month as opposed to a 30 day trial. Fujitsu updates around the first of the month; therefore, it is necessary to do an Internet search to find the appropriate location for the current download at the beginning of each month.

Lastly, XML is case sensitive and students often make careless typographic errors. While Internet Explorer" indicates where the error is, students often come to faculty for help with de-bugging.

The students are able to research current XBRL tools to use in the taxonomy and instance document assignments. Appendix B provides detailed instructions for the Fujitsu software; however, the case is not dependent on the availability of the Fujitsu software. I have a personal preference for the Fujitsu software because it is free, relatively user-friendly, and the students can download the batch file in all of the computers laboratories that I have worked with. If the Fujitsu software becomes no longer available as a free download there are alternative programs available for purchase. For example, UBMatrix and Datamation currently have products available. In addition, XMLSpy has a 30 day free download and can be used to create and edit XBRL tagged information. Rivet Software's Dragon Tag® product offers a convenient means to tag financial information contained in a Word® or Excel® format. As XBRL continues to gain momentum it is likely that additional software vendors will provide additional products to facilitate usability.

If you use accounting software in your course, you should determine whether the product supports the export of an instance document, many do. For example, Microsoft Dynamics GP has an additional add-on that faculty can acquire to support the export of an instance document.[1] If the product you use supports an export you should have the students export the instance document. This additional assignment takes almost no time, but generates an interesting class discussion.

Student Reactions

Students, who have never had to transcribe voluminous quantities of data, often report that initially the project seemed like a lot of busy work. Students whose work experience has involved data transcription are usually the first to understand the benefits and implications of XBRL. Therefore, if your students fit the former background it is important to re-iterate that XBRL eliminates the busy work. I explain to the students that they need to understand the mechanics of the technology so that they can appreciate the tasks being performed.

Student Assessment

No formal pre-test/post-test analysis has been done on the learning outcomes. Participation in class discussion and exam performance indicates that an applied skill-set is achieved. Prior to assigning the materials most students cannot correctly identify what the acronym "XBRL" means. Exam performance as indicated by multiple choice and essay responses indicates that students understand (1) the strategic benefits of XBRL, (2) how the taxonomy, instance document, and style sheet work together, and (3) the current status of the evolution of XBRL.

A Tidbit

The information available on XBRL continues to grow in exponential proportions. It seems there is something new everyday. The constant change leaves faculty feeling as if they may have missed something. Therefore, I provide some type of incentive for the first student who brings me new or unique information that I otherwise may have missed.

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[1] At the time of this writing the add-on was available without charge to academic members of the Microsoft Dynamics Academic Alliance.

III. READING

History

Extensible business reporting language, XBRL, is a specification of XML designed for the communication of financial information. Charles Hoffman, a Tacoma, Washington CPA, first presented a prototype of XBRL, an XML-based industry specification for financial reporting, to the AICPA in 1998. The AICPA supported this new technology for information sharing. "Seeing this opportunity to streamline financial and business reporting processes, the worldwide accounting profession and business community rallied around XBRL as *THE* XML based way of sharing business reporting information" (Hoffman and Strand 2001, xi). Watson et al. (2000) believe XBRL to be an exciting and important technology that "sets the standard for excellence in financial reporting." XBRL holds the potential to increase the effectiveness and efficiency of sharing financial information. In addition, XBRL can increase the transparency of financial reporting.

Business Information Supply Chain

In the current business information supply chain, information that needs to be shared requires significant re-keying (see Figure 1, adapted from Hoffman and Strand [2001, 15]). Companies spend an enormous amount of resources, time, and money, providing financial information to others. For example, companies provide information to creditors, investors, analysts, regulators, the government, and trade associations on a regular basis. Each of these user groups requires the information in a specified format. Therefore, the company providing financial information must query their reporting systems, transcribe the information onto the prescribed forms, and submit it to the appropriate user group. The users must then transcribe the information into their computer systems. Data transcription may lead to erroneous information being input into the system.

XBRL eliminates the need for transcribing data from one application to another because the data is independent of the computer application with which it was created. The

FIGURE 1
The Business Process without XBRL (adapted from Hoffman and Strand [2001, 15])
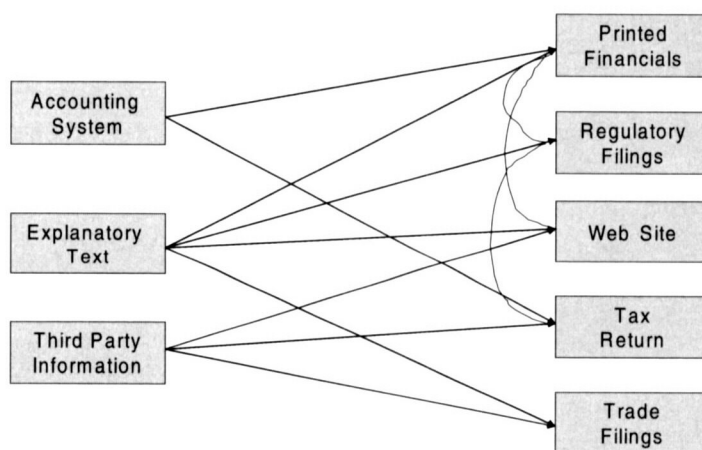
independence is maintained through tagging the individual data items.[2] The use of a common definition of the data item tags, a taxonomy, allows multiple users to be able to extract and reposition financial information. Therefore, when the XBRL tagged financial information is published to the Internet, financial information consumers can automatically retrieve the desired information and re-posit it into the desired format (see Figure 2, adapted from Hoffman and Strand [2001, 16]). In this manner all information consumers have immediate access to the information without the worry of transcription errors.

The Benefits of XBRL

Let us now turn attention to how financial information consumers could benefit from XBRL. Financial information consumers include banks, financial information aggregators, investment analysts, and stock exchanges, among others. Each of these consumers can achieve benefits through the use of XBRL tagged financial information.

"Moody's estimates that banks may extract more than 200 individual items from financial statements in assessing a commercial loan client" (Covaleski 2000). In the past, each of the required items would be reported on a loan application, prepared by the applicant. The bank would then re-key the information into the bank's underwriting program. The use of XBRL eliminates the need to re-key the data thus significantly reducing the

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FIGURE 2
The Business Process with XBRL (adapted from Hoffman and Strand [2001, 16])

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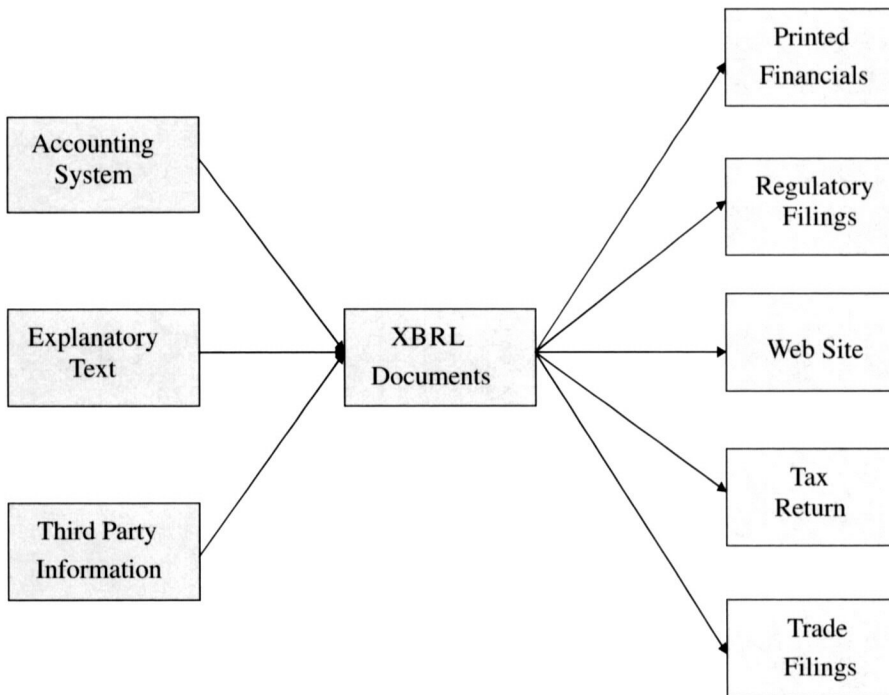
[2] XBRL can be described as a meta-language because the tags provide information, context, about the information contained within the tags.

costs necessary to evaluate a loan applicant and the time needed to make a loan decision. In addition, the bank can routinely track the current financial performance of outstanding debtors.

Data aggregators, such as Moody's, are another information consumer that may benefit from XBRL. The process of aggregating and analyzing information will be significantly affected. The aggregator will achieve reduced costs through automation. Currently data aggregators must employ individuals to determine how financial information should be mapped to common definitions used by the data aggregator. The use of data tags, which are defined by the taxonomy, will eliminate the guess work of determining whether "Cash and Cash Equivalents" as reported by Company A is the same as "Cash and Cash Equivalents" as reported by Company B. The aggregation process will be expedited by eliminating the need for data transcription. Value will be added through enhanced data analysis. The information will be provided to end-users faster and at a deeper level of analysis than currently available.

Other information consumers will benefit similarly to banks and data aggregators. Public companies are required to periodically report to the SEC. Given that less time will be required to capture information, the SEC will be able to focus on analysis. The analysis can be more comprehensive leading to increased transparency. Financial statement analysts will be able to add value by providing additional data analysis services. Due to time constraints many companies are not "followed," XBRL would allow for broader company coverage. Individual investors can analyze companies more efficiently and independently than has been possible in the past. Creditors can continuously evaluate outstanding loans for debt covenant violations and changes in loan risk. Government agencies, like the I.R.S., can also expect reduced data acquisition costs, increased accuracy, and the benefits of increased analysis of unexpected trends.

The next section explores how XBRL is currently being used to achieve tangible benefits to information consumers.

The Current Status of XBRL

The Federal Financial Institutions Examination Council (FFIEC) has implemented XBRL as the means of creating a repository for a bank's Consolidated Reports of Condition and Income (Call Report data). The FFIEC receives bank Call Reports quarterly from 82,000 U.S. banks. The Call Report is the banking industry equivalent of financial statements. The FFIEC budgeted 39 million dollars for the project which began accepting tagged files in October 2005, approximately one year after the initial target implementation date. The project is expected to save 26 million dollars over the next ten years. In addition, it is estimated that the 60–75 days it takes to currently receive, validate, and publish the filings will be reduced to less that two days. The two days is a conservative estimate, it most likely can be accomplished in two hours.

The Securities and Exchange Commission (SEC) recently started a Voluntary Filing Program to study the efficacy of XBRL tagged filings. At the time of this writing 12 XBRL-tagged filings had been received. The use of tagged financials will allow the SEC to examine company filings more often, as required by the Sarbanes-Oxley Act. In addition, XBRL will allow the SEC to perform additional analysis that is currently not possible due to time constraints and the volume of registrants. While several companies have filed under the program, the future is unknown.

XBRL is gaining world-wide momentum. The International Financial Reporting Standards Committee has embraced XBRL. Regulators such as the Dutch Water Board, the

U.K. Department of Inland Revenue, and the South African Pension Fund have all successfully used XBRL in pilot projects or for regular reporting; information about these projects and others can be found in "The Showcase" section at xbrl.org (Appendix A). Regulators can see the immediate savings from the use of XBRL. The savings result from less dependence on data transcription, and the related transcription errors, and more timely access to the information. The regulators can spend more time analyzing the data and less time correcting errors.

Assurance

An instance document contains tagged "facts" about an entity; this will be discussed more completely in the next section. While instance document assurance is not currently required either in the United States or internationally, many feel that independent assurance will be important for the wide-spread use of tagged financial statements. For regulatory reporting, such as the Federal Financial Institutions Examinations Council's Call Report project, assurance can be accomplished through computer programmed validations of the data at the bank level prior to being uploaded.

The American Institute of Certified Public Accountants (AICPA) is considering the implications of XBRL to the accounting profession. The AICPA (2003) issued an amendment to *Interpretation No. 5 of Chapter 1, "Attest Engagements,"* of Statements on Standards for Attestation Engagements No. 10: Attestation Standards: Revision and Recodification (AT section 101), to cover attestation work performed on XBRL documents. This pronouncement takes the view that instance document assurance will be used to verify that the data contained in the instance document is an accurate reflection of the information contained in the related financial statements. In addition, assurance may be needed on the mapping of the financial statement accounts to the taxonomy(ies).

Further, as XBRL changes the nature of financial reporting it is likely that it will change the frequency and specificity of assurance as well. Because the information can be exchanged in real-time it is possible, if not probable, that assurance will be needed more frequently that once per year after the annual financial statements are produced. Rather, assurance will be needed on a continuous basis. In addition, assurance currently focuses on the financial statements taken as a whole. However, instance document users may never "see" the entire set of financial statements; rather they may only extract a subset of the accounts to analyze. Therefore, it may be necessary to provide assurance at the data level, a situation that the accounting profession had vehemently resisted.

XBRL—A Technical Explanation of the Components

Our focus is on the most common components of XBRL. Tagged financial data (e.g., an instance document) is dependent on a taxonomy(ies).[3] To use the instance document it would be uploaded into another program for processing or viewing by applying an unlimited number of style sheets to the tagged data.

In addition to the taxonomy, instance document, and style sheet that you will likely see, it is important to understand how they are able to work together. The specification is the underlying technical definition of how XBRL works. The XBRL schema defines how XBRL documents and taxonomies are created. The specification and schema are not editable by the user. Therefore we will focus our attention on taxonomies, instance documents, and style sheets because you will likely be affected by them in your career.

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[3] The term taxonomy is commonly used to refer to the Discoverable Taxonomy Set (DTS). The entire set of taxonomy files must be available to an application using the instance document.

An XBRL taxonomy functions like a dictionary by providing a standard definition for business reporting information. The taxonomy contains both the schema and the linkbases. In addition, the taxonomy establishes the relationships between the financial statement accounts. For example, the U.S. GAAP Commercial and Industrial (C-I) taxonomy establishes how "Trading Securities" are related to other assets. The C-I taxonomy is an industry layer that adds presentation and calculation links to two separate files that it builds on. The two files that the C-I layer builds are the "Primary Terms Elements" (usfr-pte) and the "Primary Terms Relationships" (usfr-ptr). Because these two files are modular other industry layers may also build on them. A taxonomy also establishes the ordering of the elements within the taxonomy.[4] The ordering of the elements within the taxonomy does not determine how the elements are viewed by users; recall that the style sheet applied to the instance document will determine how the user sees the elements. Because XBRL is extensible, multiple taxonomies can be used together to support the diverse reporting methods across industries. Figure 3 shows how the components work together. Figure 4 provides the first few lines from the Commercial and Industrial (C-I) taxonomy.

XBRL International uses a due process system for taxonomy recognition. The due process system includes making the taxonomies available for public inspection and comment. Taxonomies have two levels of recognition: acknowledged and approved. The designation of a taxonomy as acknowledged means that it complies with the XBRL Specification. An approved taxonomy complies with both the Specification and the XBRL guidelines for the particular taxonomy type. Taxonomies that meet one of the two recognition levels (e.g., promulgated taxonomies) are made publicly available on the XBRL website.

FIGURE 3
The Relationship between the C-I Taxonomy, Extension Taxonomies, Instance Documents, and Style Sheets

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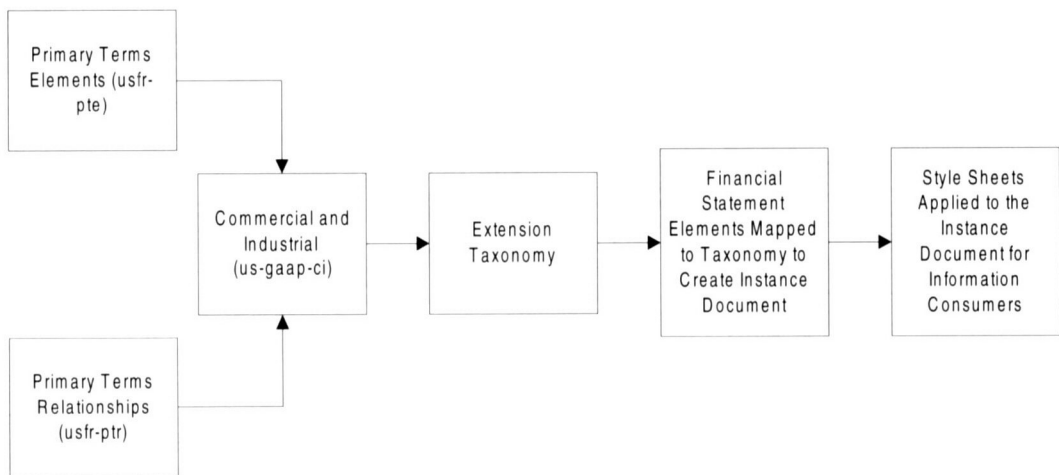
[4] An element is an account in the taxonomy. For example, "CashAndCashEquivalents" is an element in the C-I taxonomy. All element names are unique.

FIGURE 4
A Portion of the C-I Taxonomy

```
<?xml version="1.0" encoding="utf-8"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:xbrli="http://www.xbrl.org/2003/instance"
xmlns:link="http://www.xbrl.org/2003/linkbase"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:us-gaap-ci="http://www.xbrl.org/us/fr/gaap/ci/2005-02-28"
targetNamespace="http://www.xbrl.org/us/fr/gaap/ci/2005-02-28"
elementFormDefault="qualified" attributeFormDefault="unqualified">
  <annotation>
   <appinfo>
    <link:roleType roleURI="http://www.xbrl.org/us/fr/lr/role/IncomeStatement"
id="IncomeStatement">
      <link:definition>Income Statement</link:definition>
      <link:usedOn>link:presentationLink</link:usedOn>
      <link:usedOn>link:calculationLink</link:usedOn>
    </link:roleType>
    <link:roleType
roleURI="http://www.xbrl.org/us/fr/lr/role/StatementFinancialPosition"
id="StatementFinancialPosition">
      <link:definition>Statement of Financial Position</link:definition>
      <link:usedOn>link:presentationLink</link:usedOn>
      <link:usedOn>link:calculationLink</link:usedOn>
    </link:roleType>
```

If the primary taxonomy is not sufficient to meet a company's needs, the company may create an extension taxonomy. The extension taxonomy will also likely use elements from the primary taxonomy. The extension taxonomy can be used to over-ride the treatment of elements in the primary taxonomy.

An XBRL instance document maps the financial data of an organization to the XBRL elements contained in one or more taxonomies. Figure 5 provides a few lines from an instance document.[5] Each financial fact is maintained in a context. The context defines: the ID, Identifier, Scheme, Period, Date, and the unit the instance document facts use. The ID is the Context Identifier, for example, "QTR_4_2004." The Identifier is the Entity Identifier for the context, for example, the "Company Name." The Scheme is the Entity Scheme for the context, for example, "http://www.companyname.com." The Period is the Period type for the context, for example, an "instant" or for a "period." The Unit identifier is USD (other unit identifiers include "shares," "Yen," "Euros," etc.). A single instance document might contain several years' worth of financial data because the financial fact for each element (e.g., CashAndCashEquivalents) includes reference to a context (e.g., fiscal year

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[5] You can identify from the instance document which financial statement elements come from a primary taxonomy and which come from an extension taxonomy via the namespace prefixes. Notice that in the example the elements each have the prefix identifier "usfr-pte" indicating that the elements are mapped to the C-I taxonomy. The sixth line of the example indicates the specific location of the taxonomy.

FIGURE 5
An Instance Document Example

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!-- Generated by Fujitsu XWand 7.0.0025 (0018_w_27) -->
<xbrl xmlns="http://www.xbrl.org/2003/instance"
xmlns:link="http://www.xbrl.org/2003/linkbase"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:usfr-
pte="http://www.xbrl.org/us/fr/common/pte/2005-02-28" xmlns:usfr-
ptr="http://www.xbrl.org/us/fr/common/ptr/2005-02-28"
xmlns:iso4217="http://www.xbrl.org/2003/iso4217" xmlns:us-gaap-
ci="http://www.xbrl.org/us/fr/gaap/ci/2005-02-28">
<link:schemaRef xlink:type="simple"
xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"
xlink:href="us-gaap-ci-2005-02-28.xsd"/>
<usfr-pte:UnrestrictedCash decimals="0" contextRef="QTR_1_2003"
unitRef="USD">800</usfr-pte:UnrestrictedCash>
<usfr-pte:CashEquivalents decimals="0" contextRef="QTR_1_2003"
unitRef="USD">1250</usfr-pte:CashEquivalents>
<usfr-pte:CashCashEquivalents decimals="0" contextRef="QTR_1_2003"
unitRef="USD">2050</usfr-pte:CashCashEquivalents>
<usfr-pte:ShortTermInvestments decimals="0" contextRef="QTR_1_2003"
unitRef="USD">375</usfr-pte:ShortTermInvestments>
<context id="QTR_1_2003">
  <entity>
    <identifier
scheme="http://www.demonstrationcompany.com">Demonstration
Company</identifier>
</entity>
<period>
    <instant>2003-03-31</instant>
</period>
</context>
<unit id="USD">
    <measure>iso4217:USD</measure>
</unit>
</xbrl>
```

2002, 2003, or 2004). In addition, context allows a single instance document to contain the financial facts in multiple currencies.

Style sheets are used to make the raw XBRL data readable to humans. A style sheet is a program that provides instructions on how to display the data. Style sheets can be used to configure the data in the manner that best meets the decision-making needs of the recipient. The style sheet might transform the data into a PDF file, a WML (wireless markup language) file, a spreadsheet, or a text document. The style sheet can also be programmed to perform data analysis before formatting the results for viewing. Style sheets might be provided by the company supplying the XBRL data; however, they will most likely be

developed by the information users to satisfy their specific needs. For example, banks, analysts, and data aggregators will likely develop style sheets to read in "raw" XBRL financial information, process, and then display the information in a manner that facilitates their unique decision-making processes.

The components work together as follows. The instance document is mapped to a taxonomy, or to multiple taxonomies. Therefore, if an element is not contained in the taxonomy it cannot have a value in the instance document. The instance document may be available at the website of the company that created it or it may be available from a data repository, such as Edgar Online. The instance document can be downloaded for processing and analysis or to be displayed using a style sheet. A style sheet is developed independent of the instance document or taxonomy. The style sheet may be provided by the instance document creator or, most likely, it will be developed by the information consumer. All of the components are infinitely re-usable. Multiple instance documents are mapped to a single taxonomy. Multiple style sheets can be applied to a single instance document. A single style sheet can be applied to multiple instance documents.

This provides a basic understanding of the terminology used in XBRL, as well as, an understanding of how the components work together to facilitate the exchange of financial information. The next section presents the project requirements in detail. Be sure to note any changes to these requirements made by your instructor.

IV. ASSIGNMENTS
Research Assignments

(1) Visit the xbrl.org website (Appendix A). (Learning Objective 6)
   a. Identify which taxonomies currently have approved status. Which taxonomies are acknowledged?
   b. What does it mean for a taxonomy to be approved? Acknowledged?
   c. What is the current status of other taxonomy development projects in the United States? Internationally?
(2) Visit the websites of each of the Big 4 accounting firms. (Learning Objective 4)
   a. How is each firm involved in XBRL development?
   b. Describe the demonstration projects or learning tools provided by each firm.
   c. Identify any XBRL services that the firm provides to clients. For example, do they provide consulting or assurance services?
(3) Write a short paper to identify how XBRL can help companies comply with Sarbanes-Oxley and/or other regulatory requirements (i.e., Regulation FD). (Learning Objective 3)
(4) As you have seen, XBRL is a rapidly developing. Search the Internet to identify two or more demonstration projects. For each demonstration project write a one page summary. (Learning Objective 4)
(5) To further enhance your understanding of the benefits of XBRL visit the websites of the Applications Development submission award winners to the XBRL academic competition. In the past this information has been available at http://www.bryant.edu/~xbrl. If the page is no longer available from this location, do an Internet search for "XBRL Academic Competition." Visit at least two of the recent winners and write a one-page description, of how the project makes use of XBRL. Be sure to include in your description how this use of XBRL improves the business process. (Learning Objective 4)

(6) The organizations that follow have provided one or more instance documents on their company website. Find the instance documents for the following organizations: Edgar Online, Frankfurt Germany Airport Authority, Johannesburg South Africa Stock Exchange, Microsoft, Reuters, Toronto Stock Exchange, and XBRL International. Complete the following questions for each of the companies: (Learning Objective 7)

    a. What is the company URL where the XBRL financial statements are located?

    b. Does the company also provide the financial statements in any other format? For example, are the financial statements available to view on the website in html?

    c. How many quarters/years financial statements are available as instance documents?

    d. Does the company use an extension taxonomy? If so, what is the namespace prefix identifier?

    e. Does the company use a promulgated taxonomy? If so, what is the name of the taxonomy?

    f. Did you have difficulty locating the XBRL financial statements? If so why?

    g. Is there any assurance provided on the instance document? The assurance report may be contained in a separate downloadable file. If assurance is provided, is the assurance an audit, a review, or an agreed-upon procedures engagement?

Technical Assignments[6]

The Technical Assignments will give you hands-on experience in developing an XML document and applying style sheets to the data. After you have completed the XML assignment, you should have an appreciation for the role of tools in tagging the data. In the second assignment you will download a taxonomy, extend the taxonomy for the elements necessary for the provided financial statements, and create an instance document. (HINT: Check to make sure you have included all of the taxonomy elements that are necessary prior to starting the instance document. If you leave off an element, and do not discover it until completing the instance document, you may have to edit the taxonomy and start the instance document over from the beginning.) The extension to the taxonomy is necessary because the only elements that can be included in the instance document are those elements that have been included in a referenced taxonomy. Because the promulgated taxonomy is not sufficient to completely map the financial statement elements for our company it is necessary to reference both the C-I taxonomy and the extension taxonomy that you will create.

Technical Assignment 1: Create an XML Document, Create and Apply Style Sheets to an XML Document (Learning Objective 8)
XML

Table 1 is a basic XML document. This document identifies the basic anatomy of an XML document. XML documents follow five basic rules. First, all documents must have a root element. All other elements are nested within the start and end tags of the root element, "<PartsInventory>" in Table 1.[7] Second, all tags are case sensitive. Therefore, "PartName," "Partname," and "partname" are all interpreted as different element tag

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[6] So that you may properly budget your time you should expect that Assignment 1 takes approximately one hour for the average student. Assignment 2 should take three to five hours.

[7] The root element for all XBRL instance documents is xbrl (see line 3 of Figure 5).

TABLE 1
XML Inventory Code and Explanation

`<?xml version="1.0"?>`	This is the XML identifier. It indicates that this document is based on XML specification 1.0. At a minimum all XML documents must begin with this.
`<PartsInventory>`	This is the root element. All other elements are nested within the start and end tags for PartsInventory.
`<item id="P107">`	"P107" is an attribute. Note that it is contained in quotation marks, as well as, preceded by an equal sign.

`<partname>Bolt</partname>`
`<suppno>S51</suppno>`
`<cost>.59</cost>`
`<price>.99</price>`
`<QOH>75</QOH>`
	These elements each contain a value for the elements describing the item with ID of "P107."

`</item>`	This is the end tag for the item with the attribute ID of "P107."

`<item id="P113">`
`<partname>Nut</partname>`
`<suppno>S63</suppno>`
`<cost>.21</cost>`
`<price>.50</price>`
`<QOH>120</QOH>`
`</item>`
	A second item and the corresponding element values.

`<item id="P125">`
`<partname>Screw</partname>`
`<suppno>S57</suppno>`
`<cost>.15</cost>`
`<price>.24</price>`
`<QOH>95</QOH>`
`</item>`
	A third item and the corresponding element values.

`<item id="P132">`
`<partname>Gear</partname>`
`<suppno>S61</suppno>`
`<cost>5.25</cost>`
`<price>7.99</price>`
`<QOH>34</QOH>`
`</item>`
	A fourth item and the corresponding element values.

`</PartsInventory>`	The end tag for the root element.

names. Third, all start tags must have an appropriately placed end tag. The tags are contained in brackets. End tags begin with the forward slash, start tags do not. For example `<partname>` is the start tag and `</partname>` is the end tag. Between the tags is the value for the element. Fourth, nested tags must not overlap other tags. Notice in Table 1 that partname, suppno, cost, price, and QOH are nested within item. Lastly, attributes (e.g., small pieces of information) must be contained within quotation marks and must be preceded by an equal sign.

Step 1: Open Notepad, type the code exactly as it appears in the left column of Table 1. When you are done save the file, choose "save as," use the filename "inventory.xml" use the drop down menu to change the "save as" type to "all files." If you forget to change the "save as" type it will save the document as a text file rather than with the necessary xml extension. Leave Notepad open while you check for errors.

Step 2: Before you continue, you should check whether the file is a well-formed XML document. Internet Explorer has a built-in XML parser; therefore, you should open the file in Internet Explorer to check that it is well-formed.[8] If the file is well-formed, the code should appear in the browser window as you typed it. If an error message appears it will tell you what type of mistake you made and where you made it (it will give a line and column count). If you made a mistake, maximize Notepad, correct the mistake and re-save. Click refresh in Internet Explorer. Repeat as necessary to correct all errors.

Step 3: To practice your skills you should add two more inventory items to the example file. Save the file and check that the document is well-formed before continuing.

Style Sheets

A style sheet allows you to reconfigure the XML data to meet the needs of a diverse user group. For example, an analyst may apply a style sheet that displays the results of ratio analysis performed, while an individual investor might choose to apply a style sheet that renders the instance document as an income statement. Most companies who use XBRL tagged documents will create custom style sheets to view the instance document(s). However, it is possible that the providers of XBRL tagged information may provide style sheets to view the data. To understand the basic terminology of a style sheet we will use the following example, contained in Table 2.

Step 1: Open Notepad, type the code exactly as it appears. Save the file as "inventorystylesheet.xsl" remember you will need to change the "save as" type to "all files."

Step 2: Re-open the XML file, "inventory.xml." The following code needs to be added as the *second line*, it is the reference to the style sheet that you just saved, <?xml-stylesheet type="text/xsl" href="inventorystylesheet.xsl"?>, save the file as "inventorynew.xml" remembering to change the "save as" type to "all files." Open the "inventorynew.xml" file in Internet Explorer, it should look like Table 3. (HINT: A common mistake is a difference in the saved file name of the style sheet and the name of the referenced style sheet.)

Now it is time for you to have some practice. From the example, you will need to edit it to create three style sheets. Save each style sheet separately. Create all of the style sheets first then apply each one individually to the XML document you created (yourlastnameinventory.xml). You will have to change to the filename reference to the style sheet on the second line each time. Re-save the file each time you change the style sheet reference, add a 1, 2, and 3 to the XML document filename. Check each file for errors before continuing.

(1) Suppose you are a salesperson and you want to sell the product with the highest gross profit. Produce a style sheet to display "partname" and "gross profit." Save the file as "yourlastnamegrossprofitstylesheet.xsl."

(2) Suppose you just want to know the partname and suppno. Save the file as "yourlastnamesuppnostylesheet.xsl."

(3) Suppose you want a price sheet with the partname and price. Save the file as "yourlastnamepriceliststylesheet.xsl."

While you may not be able to fully appreciate the benefits of XML and XBRL because you had to tag the data and create all of the style sheets, take a few minutes to reflect over

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[8] To do so, open Internet Explorer. Within Internet Explorer, choose file, open and browse to find your "inventory.xml" file.

TABLE 2
XSLT Style Sheet to Apply to XML Inventory Code

Code	Explanation
`<?xml version="1.0"?>`	This is the XML identifier.
`<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="1.0">`	"xsl" is a namespace prefix identifier. This tells the rest of the style sheet when it sees the "xsl" prefix it refers to the indicated URL.
`<xsl:template match="/">`	As the style sheet is applied to the xml file each time it finds an element, it adds it to the results.
`<HTML>`	Indicated that we are creating an HTML document.
`<TABLE BORDER="1">`	The desired output is a table. The border is to be size 1.
`<TR>` `<TH>Part Name</TH>`	`<TR>` creates a table row. `<TH>` creates a table heading, "Part Name."

`<TH>Cost</TH>`
  `<TH>Retail Price</TH>`
  `<TH>Inventory at Cost</TH>`
  `<TH>Inventory at Retail</TH>`
`</TR>`
	The end tag for the table row.

`<xsl:for-each select="PartsInventory/item">`	Select the values for each of the items contained in the PartsInventory root element.
`<TR>`	A table row is created.
`<TD><xsl:value-of select="partname"/></TD>`	`<TD>` indicates table column; therefore, the value for the element "partname" is displayed.

`<TD><xsl:value-of select="cost"/></TD>`
  `<TD><xsl:value-of select="price"/></TD>`
  `<TD><xsl:value-of select="cost * QOH"/></TD>`
	This table data is the result of a mathematical operation, notice the required space on each side of the operand.

`<TD><xsl:value-of select="price * QOH"/></TD>` `</TR>`	The end tag for a row of table data. The process will repeat until table data has been added for all inventory items.

`</xsl:for-each>`
`</TABLE>`
`</HTML>`
`</xsl:template>`
`</xsl:stylesheet>`
	Each of these is the properly nested end tag.

what you created. From a single tagged set of information you can view the information in many different ways. Once the style sheet is created, it can be re-used throughout the organization.

Now that you have completed this assignment, reflect back over any difficulties that you encountered. Perhaps you had left off an end tag or incorrectly nested an element. Even if you had no difficulties, imagine the enormity of tagging all of the elements of a complete set of financial statements manually. The next section introduces tools to help

TABLE 3
XML Data Styled with the "inventorystylesheet.xsl" File

Part Name	Cost	Retail Price	Inventory at Cost	Inventory at Retail
Bolt	.59	.99	44.25	74.25
Nut	.21	.50	25.2	60
Screw	.15	.24	14.25	22.8
Gear	5.25	7.99	178.5	271.66

you create XBRL taxonomies and instance documents. Hopefully, you will be able to appreciate the benefit of tools that help with the tagging process.

Overview of Technical Assignment 2

In Technical Assignment 2 you will download a promulgated taxonomy, use commercial software tools to view the taxonomy, extend the taxonomy as necessary, create an instance document, and use the style sheets available in the tool to view the instance document as financial statements. Recall that a taxonomy defines the elements that can be included in an instance document. In addition, the taxonomy defines the relation between the financial statement elements. For example, it defines that "Allowance for Doubtful Accounts" has a negative (−1) relationship because it is a contra account. Taxonomies are continuously being developed. Current taxonomies are not sufficient to meet the divergent needs of all industries. While some financial statement elements may be consistent across industries many elements vary by industry. Because the current taxonomies do not include all elements it is necessary to extend the taxonomy to meet these divergent needs.

You will use the December 31, 2005 Trial Balance for Little Rock, Inc. in Table 4 to complete Technical Assignment 2.

Technical Assignment 2, Step 1: Find Taxonomy and Instance Document Creation Tools (Learning Objective 9)

Search the Internet to identify tools for (1) the creation and editing of taxonomies, (2) the creation of instance documents, and (3) tools for information consumers. You may complete the remaining assignments using the tool(s) you locate yourself or of your professor's choosing. The detailed key-stroke instructions included in Appendix B are written assuming that you are using the integrated Taxonomy Editor/Instance Creator" tool available from Fujitsu. The Fujitsu tools use a single program to view taxonomies, create taxonomy extensions, create instance documents, and for viewing the styled instance document. When these assignments are complete you will open the non-styled instance document so that you can see how the tool facilitates the tagging process. The instance document with tagged elements will appear similar to what you did in the previous XML assignment.

Technical Assignment 2, Step 2: View a Promulgated Taxonomy and Identify Elements that are Necessary in an Extension Taxonomy

In Step 2 you will download an existing taxonomy. XBRL International has issued a Commercial and Industrial (C-I) primary financial statement taxonomy. Locate and download the most recently approved C-I taxonomy to your computer desktop. You will need to download the zipped file that contains the entire "DTS." Recall that the DTS is the discoverable taxonomy set. Extract the zipped files before continuing. The taxonomy file

TABLE 4
Little Rock, Inc., Trial Balance

Little Rock, Inc.
Trial Balance
December 31, 2005

	DEBIT	CREDIT
Cash—Unrestricted	49,400	
Short-Term Investments	36,851	
Accounts Receivable, Net of Allowance $8,756	81,418	
Amount Due from Officers/Stockholders Current	7,284	
Prepaid Insurance	94,924	
Deferred Income Tax (current)	896	
Property Plant and Equipment	1,486,000	
Accumulated Depreciation		414,000
Long-Term Investments	253,498	
Goodwill	326,256	
Intangible Assets, Finite Life	83,703	
Other Assets, Noncurrent	92,456	
Accounts Payable-Trade		6,275
Accrued Salaries		7,986
Unearned Revenue		12,450
Notes Payable, Current		50,000
Deferred Tax Liability (long-term)		7,781
Capital Lease-Airplanes		300,000
Common Stock		500,000
Additional Paid-In-Capital		312,118
Retained Earnings, Nonappropriated		324,047
Flight Revenue		1,582,569
Landing Fees and Other Rentals	20,300	
Fuel and Oil	44,712	
Aircraft Rentals	418,317	
Agency Commissions	89,031	
Salaries and Wages Expense	93,542	
Insurance Expense	77,374	
General and Administrative Expense, Other	18,318	
Depreciation Expense	81,400	
Pension and Other Employee Benefit Expense	88,970	
Interest Expense	1,216	
Advertising Expense	46,374	
Property Tax Expense	24,986	
	3,517,226	3,517,226

has a .xsd extension. After you have unzipped the files you will need to drill-down through the folders to the taxonomy. The path to the taxonomy is currently reached by drilling-down through the following folders, "us," "fr," "gaap," "ci," "2005-02-28," "us-gaap-ci-2005-02-28.xsd."

Open your taxonomy editor so that you can view the file.[9] Drill-down through the document to see the elements that are included in the Commercial and Industrial taxonomy "Statement of Financial Position" and the "Income Statement" to identify any elements that are not present in the taxonomy but will be needed to fully map the accounts contained in Table 2. This step is very important, so take your time and double check your work before continuing. You should see that the order indicates that "Assets" are first and that "Liabilities and Owners Equity" come second. If you drill-down further into "Liabilities and Owners Equity" you will see that "Liabilities" are first, "Commitments and Contingencies" are second, and that "Owners Equity" is third. View the calculation links for the current asset element "Accounts Receivable Trade Net." When expanded you will see a weight of negative one (-1) applied to the "Allowance for Doubtful Accounts."

While XBRL International has approved the C-I primary financial statement taxonomy, there is much work left to be done in taxonomy development. Therefore, over the course of your career you may need to help clients develop or modify their taxonomy(ies). There are several tools such as Fujitsu's Taxonomy Editor[10] that can help you in that regard. You could also choose to create a taxonomy using Notepad similar to what was done in Technical Assignment 1 on XML.

Make sure that you have identified the elements that are not present in the C-I taxonomy and close the taxonomy. You should not have made any changes therefore it is not necessary to save the taxonomy.

Technical Assignment 2, Step 3: Create an Extension Taxonomy (Learning Objective 9)

Because the Commercial and Industrial taxonomy does not fit all of our needs (e.g., it does not allow us to map all of the elements, accounts, of our financial statements) it is necessary to extend our taxonomy. In the previous step you should have identified several elements that we will need to create in our extension taxonomy. In practice, it is likely that many companies will need to create taxonomy extensions. It is also possible that taxonomies may be developed by industry trade associations. For our purpose we are going to assume that we need to create an extension to meet our company's reporting needs. When we create an instance document in step four of this assignment it will reference both the C-I and the extension taxonomy created in this assignment.

Besides adding additional elements to existing taxonomies, extension taxonomies can be used to over-ride the primary taxonomy. For example, a company could develop an extension taxonomy that would over-ride the element labels of the C-I taxonomy. If a company were using an extension taxonomy to over-ride the primary taxonomy this information would be important for instance document users because reporting transparency is potentially diminished by circumventing the promulgated taxonomy tags.

To extend the taxonomy we will need to add only the elements that do not exist in the Commercial and Industrial taxonomy. You should open a new taxonomy to add the necessary elements.[10] After you have added the extension elements, save the taxonomy, and import the Commercial and Industrial taxonomy, re-save. Incorporate the elements that you have added into the presentation and calculation links of the Commercial and Industrial taxonomy.

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[9] See Appendix B for opening the taxonomy using the Fujitsu Taxonomy Editor.
[10] To complete this task using the Fujitsu tool, see Appendix B.

Technical Assignment 2, Step 4: Create an Instance Document (Learning Objective 10)

In Step 4 you will populate an instance document with the information contained in the Little Rock, Inc. Trial Balance. The instance document will establish the context for a particular set of financial facts mapped to the elements in a taxonomy(ies). The element name and the context form the tag for the financial data in the instance document. Further, the instance document will contain the values for the financial data for the context.

Because the context indicates the time as either a period or an instant, you will have one context for the balance sheet accounts and a different context for the income statement accounts. Regardless of the software you are using, the appropriate ID is "Year_End_2005," the period is "2005-12-31," the identifier is "Little_Rock_Inc," and the scheme is "http: www.littlerockinc.com." Use the data in Table 4 to enter the values into the instance document. In keeping with good practice you should save often. After you have entered the values for all of the elements use a built-in style sheet, if one exists in the software you are using, to view the instance document as styled financial statements.

Now, open the file you have saved in an Internet Explorer browser. You should see that the data are tagged and appear similar to the XML files created previously. Also, as you look through the first several lines of code you see the namespace reference to the Commercial and Industrial taxonomy, as well as to the extension taxonomy. You should see a line "xmlns:us-gaap-ci="http://www.xbrl.org/us/fr/gaap/ci/2005-02-28."" The namespace prefix identifier is "us-gaap-ci" and the namespace reference is "http:// www.xbrl.org/us/fr/gaap/ci/2005-02-28." Note that the extension prefix identifier will vary. The default namespace identifier if you used the Fujitsu tools is "p0."

You should turn in the instance document (it has an .xml extension), the taxonomy (it has an .xsd extension), and the styled financial statements as either printed documents or computer files as instructed by your professor.

V. CONCLUSION

Spend a few minutes reflecting back over the assignments that you have completed. You may be tired and are likely thinking "What is the point? I sure spent a lot of time entering this information into the computer." The time that you spent is significantly less that what you might spend for the generation of a single report without XBRL. As much as 80 percent of employee time is spent finding information and keying the information into a form or report. Even in this worst case scenario of having to create an instance document manually, you would only have to type the information once as opposed to re-keying the information each time an information consumer wants a different report. User-friendly financial query systems are increasingly available to automate these steps.

Hopefully, you now understand both the significance of XBRL to financial reporting, as well as how it may affect your future as a financial reporting information professional. You may never need to produce an instance document "from scratch" because the capability is included in most major accounting software programs. According to a recent XBRL Software Vendor Study, two-thirds of the accounting software vendors either currently support XBRL tagged financial reporting information or will by December 2004 (XBRL.org 2003). It is important that you understand the process the computer uses to create the instance document. By having the software program produce XBRL financial statements the accuracy is enhanced; whenever people are involved in the transcription of data there is the possibility of errors.

It is critical that the financial information be correctly mapped to the taxonomy(ies). It is likely that the first time an organization produces an instance document the cost in man-hours will be high; however, after the extension taxonomy is developed and the financial statement elements are mapped to the taxonomy, the future creation of instance documents should be more expeditious.

The impact of XBRL on financial reporting has only just begun. As additional firms understand the implications of XBRL, reduced costs, and enhanced decision making, it is likely that the number of firms reporting XBRL financial information will increase at an exponential rate. You may be able to benefit your employer by expounding the virtues of XBRL.

In conclusion, recall the key benefits of XBRL. First, XBRL minimizes, if not elimi-nates, the need to re-key information. By minimizing the time spent acquiring the infor-mation, more time can spent adding value through data analysis. Second, XBRL enables a paper-less data exchange by allowing information to be downloaded from the Internet in a computer ready format. Third, XBRL allows for differences among industries through the use of custom taxonomies. Fourth, XBRL does not require additional software or new reporting standards. In conclusion, XBRL will allow information to be shared faster, cheaper, and more accurately than ever before.

APPENDIX A
Web Resources

http://web.bryant.edu/~xbrl/index.html
http://www.edgar-online.com/xbrl
http://www.eycarat.ku.edu
http://www.fujitsu.com
http://www.java.com
http://www.microsoft.com
http://www.rivetsoftware.com
http://www.ubmatrix.com (formerly www.xbrlsolutions.com)
http://www.xbrl.org

APPENDIX B

The Fujitsu Taxonomy Editor/Instance Creator is a batch file that runs on Java. If you do not currently have Java installed on your computer it can be obtained from "java.com." If Java is already installed it is not necessary to re-install it. Make sure that Java is installed prior to the Fujitsu tools to establish the path correctly. To find the Fujitsu software you should do an Internet search for "Fujitsu XBRL tools." If you encounter difficulties that you cannot resolve, contact your instructor. If you are trying to install Java in a computer laboratory you must have administrative rights. Because the Fujitsu program is a batch file you do not need to have administrative rights to download it. If you do not use a high-speed Internet connection this process could take a significant amount of time.

The first software program that you will need to download is Java. The Fujitsu software that you should use is the combined Taxonomy Editor and Instance Creator that is compliant with the current specification. At the time of the writing, version 2.1 is the current speci-fication. The Fujitsu software is updated at the end of each month. The license is valid for one calendar month. You can re-download the software if necessary to complete your assignment.

Now that you have the software you are ready to being the requirements of Technical Assignment 2.

Opening a Promulgated Taxonomy

The Fujitsu software should now be available on your desktop. The folder generally has a name that begins with "biz." With the folder open you should choose the following icon:

Run.bat

To open the downloaded Commercial and Industrial taxonomy "C-I taxonomy," click "file," "open," and browse to locate the taxonomy file. You will have to drill down through the folders to get to the taxonomy file. The taxonomy file has an .xsd extension. The path to the taxonomy is currently reached through the following folders: "us," "fr," "gaap," "ci," "2005-02-28," "us-gaap-ci-2005-02-28.xsd."

The Fujitsu Taxonomy Editor should look similar to Figure 6 if you expand the taxonomy by clicking on the plus signs (Fujitsu Ltd. 2004b).

Creating an Extension Taxonomy

Open the Taxonomy Editor as you did in the previous assignment. If you have difficulty following the instructions you should consult the current copy of the *Taxonomy Editor User's Guide*© that is downloaded with the software.

To begin creating a taxonomy, click "edit," "add item." Items are added in the "Element Declaration pane." See Figure 6 for an overview of the panes in the Fujitsu Taxonomy Editor. You will need to enter the element ID for those elements that you identified as not being included in the C-I taxonomy. Double click on the "Name" box to enter the name. There cannot be any spaces in the name; therefore, to facilitate readability it is helpful to capitalize the first letter of each word. Double click on the "ID" box and enter the name again. Double click on the "type" box for a drop down menu. Do not worry about completing the "substitution group." The "periodType" also has a drop-down menu; the choice will vary on whether it is a balance sheet item or an income statement item. For the "balance" you will need to choose "debit" or "credit" depending on the type of account. It is not necessary to use "abstract" or "nillable." Continue adding new items until you have added all items not contained in the C-I taxonomy.

Now that you have created the extension taxonomy it is time to import the C-I taxonomy. To import the taxonomy choose "file," "import," and click on the box containing three small dots to browse for the saved taxonomy. You should now see that the C-I taxonomy has been added below your extension taxonomy in the DTS pane.

Now you are ready to establish the presentation linkbase. This process is very simple. You will drop and drag the elements to the presentation link pane maintaining the C-I hierarchy. As you drag over items it will highlight where the item will be dropped. If you make a mistake, simply drop and drag to correct. Remember to save often. To save the file, choose "save." When you choose to save a properties box will come up. You should click on "Sync the Schema Path" and click "ok." The taxonomy is saved in the Fujitsu folder on your desktop that you access the programs from.

FIGURE 6
The Panes of the Fujitsu Taxonomy Editor® (used with the permission of Fujitsu Limited, all rights maintained)
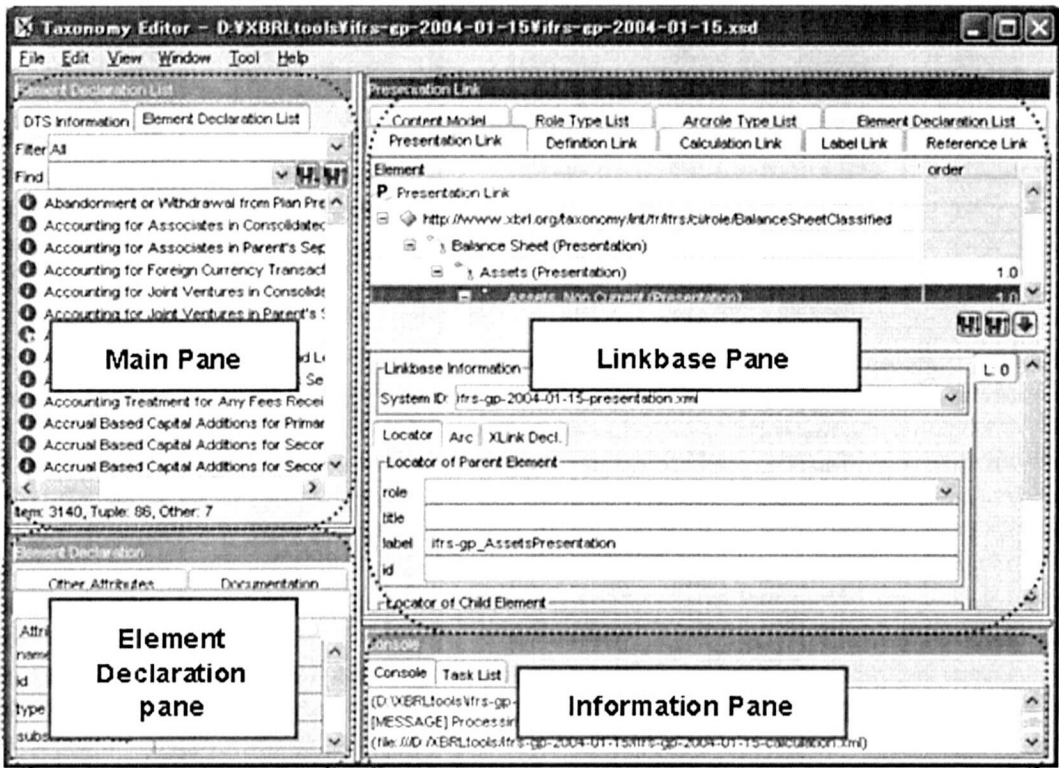
It is not necessary to close the Taxonomy Editor to begin creating the instance document.

Creating an Instance Document

Begin by choosing "File" and "New Instance." The software will then ask you for the taxonomy that you want to map the instance document elements to. Click on the box with the three small dots to browse and find the saved taxonomy. The saved taxonomy is saved as "default.xsd." If you have difficulty consult the *Instance Creator User's Guide*© included in the Fujitsu tool download.

The taxonomy will populate the left pane. You can click on the "+" signs to expand and the "−" signs to collapse the taxonomy elements. Click on "Context" then "Add" in the lower right-hand pane and a new window will open. The Context Type is "numeric." The ID is "QTR_4_2005" (the fourth quarter of 2005). The Identifier is "LittleRockInc." and the Scheme is "http://www.littlerockinc.com." The Period is an "Instant" and the date is "2005-12-31." Then choose "ok." The next step is to add the "units"; to do so select "unit" in the lower right pane and click "add." The ID is "USD" and the

"measure" can be chosen by double clicking on the drop down. The appropriate "measure" is "iso4217:USD." Now click "ok." "USD" indicates the U.S. Dollar is the currency for this context. Multiple contexts could be used to make the instance document available in several currencies. For example, "JPY" refers to Japanese Yen. We could choose to provide our financial information in multiple currencies in a single instance document to facilitate international financing. In addition, if we had multiple years of data we could create multiple contexts for each of the time periods.

Before beginning to enter information you should choose "presentation link" from the drop-down in the upper left pane. Then you will need to choose the appropriate financial statement from the drop down menu. After you have done so the upper right-hand pane will populate with the financial statement elements. You should have white boxes for those items that are numeric in the taxonomy. Enter each value from the Trial Balance without dollar signs or decimal places. Press "enter" after each value is entered and you will be automatically taken to the next element to enter the instance value. There will be many elements that do not have a value; this was done to maintain some level of simplicity in the assignment. Save often; by default the file will be saved in the Fujitsu Tool folder as "instance.xml."

Be sure to save the file after you have entered all of the values. Now that you are done entering values you can use the built in style sheet to view the financial statements. Choose "Tool," "Report Instance," and "Quick Report." The financial statement will open in an Internet Explorer window. Figure 7 shows the first several lines of the instance document styled as the Statement of Financial Position (Fujitsu Ltd. 2004a). Save the styled financial statements to turn in using an appropriate file name, such as "YourlastnameIncomeStatement."

FIGURE 7
Instance Document Example Styled as a Statement of Financial Position Using the Fujitsu Taxonomy Editor/Instance Creator® Quick Report Tool

StatementFinancialPosition

		Year_End_2005
Cash—Unrestricted		49,400
Short-Term Investments		36,851
Cash, Cash Equivalents and Short-Term Investments—Total		86,251
Accounts Receivable Trade, Net—Total		81,418
Amounts Due From Officers/Stockholders—Current		7,284

TEACHING NOTES

Teaching Notes are available only to full-member subscribers to the *Journal of Information Systems* through the American Accounting Association's new electronic publications system at http://www/.extenza-eps.com/action/showPublisherJournals?code=AAA (click on Teaching Notes for *Journal of Information Systems* at the bottom of the list of publications). Full-member subscribers should use their personalized usernames and passwords for entry into the system where the Teaching Notes can be reviewed and printed.

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