



LEVERAGING XBRL FOR VALUE IN ORGANIZATIONS

Abstract

ISACA and IFAC have jointly developed this paper to provide accounting and assurance professionals with guidance to leverage value from XBRL initiatives and compliance requirements. XBRL is a specialized form of eXtensible Markup Language (XML), a standard from the World Wide Web Consortium, the international organization that establishes web standards, which allows for advanced representation of business and financial data. The benefits and opportunities of embedding XBRL within internal processes can enhance management communication, thus increasing the value of information used within an organization. Examples and case study material are included.

ISACA®

With 95,000 constituents in 160 countries, ISACA (www.isaca.org) is a leading global provider of knowledge, certifications, community, advocacy and education on information systems (IS) assurance and security, organization governance and management of IT, and IT-related risk and compliance. Founded in 1969, the nonprofit, independent ISACA hosts international conferences, publishes the *ISACA® Journal*, and develops international IS auditing and control standards, which help its constituents ensure trust in, and value from, information systems. It also advances and attests IT skills and knowledge through the globally respected Certified Information Systems Auditor® (CISA®), Certified Information Security Manager® (CISM®), Certified in the Governance of Organization IT® (CGEIT®) and Certified in Risk and Information Systems Control™ (CRISC™) designations. ISACA continually updates COBIT®, which helps IT professionals and organization leaders fulfill their IT governance and management responsibilities, particularly in the areas of assurance, security, risk and control, and deliver value to the business.

IFAC

IFAC's mission is to serve the public interest by:

- contributing to the development, adoption, and implementation of high-quality international standards and guidance;
- contributing to the development of strong professional accountancy organizations and accounting firms, and to high-quality practices by professional accountants;
- promoting the value of professional accountants worldwide; and
- speaking out on public interest issues where the accountancy profession's expertise is most relevant.

The Professional Accountants in Business (PAIB) Committee serves IFAC member bodies and professional accountants worldwide who work in commerce, industry, financial services, education, and the public and not-for-profit sectors. Its aim is to promote and contribute to the value of professional accountants in business. To achieve this objective, its activities focus on:

- increasing awareness of the important roles professional accountants play in creating, enabling, preserving and reporting value for organizations and their stakeholders; and
- supporting member bodies in enhancing the competence of their members to fulfill those roles. This is achieved by facilitating the communication and sharing of good practices and ideas.

Disclaimer

ISACA and IFAC have designed and created *Leveraging XBRL for Value in Organizations* (the “Work”) primarily as an educational resource for accounting and assurance professionals. ISACA and IFAC make no claim that use of any of the Work will assure a successful outcome. The Work should not be considered inclusive of all proper information, procedures, and tests or exclusive of other information, procedures, and tests that are reasonably directed to obtaining the same results. In determining the propriety of any specific information, procedure, or test, accounting and assurance professionals should apply their own professional judgment to the specific circumstances presented by the particular systems or information technology environment.

Reservation of Rights

© 2011 ISACA and IFAC. All rights reserved. No part of this publication may be used, copied, reproduced, modified, distributed, displayed, stored in a retrieval system, or transmitted in any form by any means (electronic, mechanical, photocopying, recording, or otherwise) without the prior written authorization of ISACA and IFAC. Reproduction and use of all or portions of this publication are permitted solely for academic, internal, and noncommercial use and for consulting/advisory engagements, and must include full attribution of the material’s source. No other right or permission is granted with respect to this work.

ISACA

3701 Algonquin Road, Suite 1010
Rolling Meadows, IL 60008 USA
Phone: +1.847.253.1545
Fax: +1.847.253.1443
E-mail: info@isaca.org
Web site: www.isaca.org

International Federation of Accountants

Professional Accountants in Business Committee
545 Fifth Avenue, 14th Floor
New York, New York 10017 USA
E-mail: vincenttrophoff@ifac.org
Web site: www.ifac.org

ISBN: 978-1-60815-094-6

Leveraging XBRL for Value in Organizations

TABLE OF CONTENTS

1. INTRODUCTION	5
2. XBRL, AN EXPLANATION	7
3. LEVERAGING XBRL FOR VALUE	9
4. STRATEGIES FOR ADDRESSING XBRL WITHIN THE ORGANIZATION	16
5. CONCLUSIONS	22
6. ACKNOWLEDGMENTS	23

INTRODUCTION

eXtensible Business Reporting Language, better known as XBRL, is used as the common (computer) language for the electronic communication of business and financial data. XBRL is of value to organizations for two main reasons:

- More and more public authorities demand that companies and other organizations submit/file their business and financial data or reports in XBRL format.
- XBRL, when applied in a smart way, can bring other benefits to organizations.

In many jurisdictions, the use of XBRL will be required where mandatory XBRL-formatted financial reporting has been introduced, as regulators have done, for example, in China, Italy, Japan, Singapore, and the United States. In the near future, other users, such as analysts and investors, are going to expect companies to provide their information in XBRL format as well. XBRL also can bring many benefits to organizations and their stakeholders. Therefore, organizations can and should no longer ignore the developments in XBRL.

Organizations increasingly share information with partners, stakeholders, and a wide variety of regulators. Some of this information is transactional in nature (e.g., purchase orders, logistics data, invoices, etc.), while other information transfers are concerned with broader aspects of the operation of the organization. These transfers may include information on financial performance, risks, sustainability, and compliance. Organizations also report different types of information, including monetary information, text, and statistics. Frequently, information that is typically produced with complex computer systems is transformed into a paper format. Then, very often, the users of those printed reports re-key at least some of this information into their own analytical databases.

XBRL, now more than a decade old, was developed to increase the effectiveness and efficiency of these information transfers. XBRL is a language that leverages Internet technologies for the communication of business information coupled to the metadata (data about data) associated with the information. XBRL provides the context that consumers need to understand business information. XBRL is the business reporting equivalent of the Universal Product Code (UPC) or other type of bar code. Just as a UPC bar code uniquely identifies a physical product, such as a book or electronic gadget, the XBRL “bar code” uniquely identifies chunks of information. Just as a UPC bar code allows software to retrieve key characteristics of a product (e.g., weight, dimensions, characteristics, price, etc.), XBRL provides data on key attributes of the related information (e.g., meaning of the data item, type of data, time period, organization, etc.). XBRL supports a wide variety of data that organizations use to build management reports, including financial reports, balanced scorecards, and sustainability reports.

The standard for the use of XBRL is freely available from the XBRL international consortium—it is not the property of any software vendor. Nor is it restricted to any one particular computer system or language. An increasing array of software packages and tools can generate and understand it. XBRL is not software.

There are XBRL-related initiatives around the world, many of which were introduced by regulators to improve the performance of information supply chains for performance and compliance data. There is little value for consumers of information if individual information providers use different definitions and technologies that do not work together. Standardization brings value to both information providers and consumers. XBRL can provide such standards.

Organizations can choose to treat XBRL solely as a compliance activity—yet another cost that some organizations feel benefits regulators and not the organization itself—but they have other options as well. For example, organizations can leverage XBRL for value by embedding XBRL within internal processes to enhance the effectiveness, efficiency, and reliability of management communication. Aligning the internal measurement and communication of key performance metrics with external compliance requirements can bring business benefits. Using the same technology for generation and transmission of information inside the organization as is used for external compliance can reduce costs. Employing the same definitions for important metrics can minimize risk and better align external and internal communications.

XBRL is platform independent and, therefore, can be used as a vehicle of communication aligning different information systems within organizations.

XBRL, An Explanation

XBRL allows information to be communicated to interested partners in an automated, validated, and reliable fashion. At the heart of every XBRL implementation is one or more taxonomies providing a means to associate reported business facts with their definitions. Defining the meaning of terms and identifying the standards upon which they are based in a taxonomy means that every participant in an information supply chain has a common understanding of the meaning of terms. XBRL does not define particular taxonomies. Rather, this responsibility lies with those who manage the supply chains—securities organizations, banks, or other regulators; financial institutions; stock exchanges; statistics offices; industry associations; or a single organization that wishes to improve its own internal information supply chain. The inherent flexibility of XBRL allows for its application in most domains that can benefit from definition and description of both structured and unstructured business information. When the information provider publishes its business report in XBRL format, it tags all the facts in the report against the predefined concepts in the taxonomy. Given the inherent flexibility with XBRL and the importance of taxonomies, the design of base taxonomies is a particularly key consideration in the design of XBRL-related solutions.

At the same time, XBRL allows for extensions to the standard taxonomy. In many internal and external reporting environments, not all the necessary reporting concepts for a specific reporting need are predefined in the standard taxonomy. Extensions (but not changes) to the standard taxonomy are allowed so that the information provider can tell its own story. The information provider would not need to change the standard taxonomy. Instead, it publishes an extension taxonomy that fits together with the standard taxonomy like pieces in a jigsaw puzzle. When the information provider publishes its XBRL report, it uses tags not just from the standard taxonomy for that information supply chain but also from the extension taxonomy. The fact that the extended taxonomy is distributed together with the XBRL report ensures that the extension is just as automatically understandable and “consumable” as the base taxonomy, because they both comply with the XBRL standard.

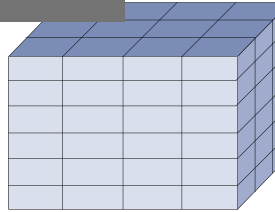
XBRL allows information providers to transfer to consumers a wide variety of types of data, including blocks or fragments of text, numeric facts embedded in blocks of text, reports on flows of transactions, performance reports, and data tables and data cubes. These different types of information flows are illustrated in **figure 1**.

Figure 1—Examples of Types of Information Flows Supported by XBRL

Blocks of Text With Tagged Facts

Example text, Example text, Example text, Example text, Example text, Example text,
 Example text, Example text, Example text, Example text, Example text, Example text,
 Example text, Example text, Example text, Example text, Example text, Example text,
 Example text, Example text, Example text, Example text, Example text, Example text,
 Example text, Example text, Example text, Example text, Example text, Example text,
 Example text, Example text, Example text, Example text, Example text, Example text,
 Example text, Example text, Example text, Example text, Example text, Example text,
 Example text, Example text, Example text, Example text, Example text, Example text,
 Example text, Example text, Example text, Example text, Example text, Example text,

Data Cubes



Data Tables

	Terra	Dies
	sit amet, consectetur adipiscing elit.	5/1/50
100.00 k€	Maecenas porttitor congue massa.	5/6/50
100.00 k€	Fusce posuere	5/16/50
100.00 k€	Magna sed pulvinar ultricies	5/26/50
100.00 k€	Purus lectus malesuada libero	6/5/50
100.00 k€	Sit amet commodo magna eros quis urna.	6/15/50
100.00 k€	Nunc viverra imperdiet enim.	6/25/50
100.00 k€	Fusce est.	7/5/50
100.00 k€	Vivamus a tellus.	7/15/50
100.00 k€		7/25/50

Reports

	As of December 31, 2006	2005
ASSETS		
Non Current Assets	440,000	450,000
Property, plant and equipment	100,000	100,000
Intangible assets	140,000	150,000
Goodwill	140,000	150,000
Investments in associates	60,000	50,000
Total Non Current Assets	440,000	450,000
Current Assets	300,000	140,000
Receivables	400,000	400,000
Trade and other receivables	4,000	4,000
Prepayments	500,000	500,000
Cash and cash equivalents	1,000,000	1,000,000
Total Current Assets	1,200,000	1,100,000
Total Assets	1,640,000	1,550,000
EQUITY AND LIABILITIES		
Capital and Reserves	300,000	300,000
Share capital	100,000	100,000
Reserves	1,000,000	1,000,000
Accumulated profits	1,000,000	1,000,000
Total capital and reserves	1,400,000	1,400,000
Minority Interest	50,000	50,000
Non Current Liabilities	800,000	800,000
Borrowed financing	800,000	800,000
Deferred tax	50,000	50,000
Deferred tax assets	50,000	50,000
Total non current liabilities	850,000	850,000
Current Liabilities	220,000	200,000
Trade and other payables	100,000	100,000
Current portion of interest bearing borrowings	50,000	50,000
Other liabilities	70,000	50,000
Total current liabilities	320,000	300,000
Total equity and liabilities	1,640,000	1,550,000

Transaction Summaries

	2006	2005	2004
Income Statement			
Revenue	1,000,000	900,000	800,000
Cost of sales	(400,000)	(350,000)	(300,000)
Gross profit	600,000	550,000	500,000
Operating expenses	(200,000)	(180,000)	(160,000)
Operating profit	400,000	370,000	340,000
Finance income	50,000	40,000	30,000
Finance expense	(20,000)	(15,000)	(10,000)
Profit before tax	430,000	395,000	360,000
Income tax expense	(100,000)	(90,000)	(80,000)
Profit after tax	330,000	305,000	280,000
Dividends paid	(50,000)	(40,000)	(30,000)
Retained earnings	280,000	265,000	250,000
Balance Sheet			
Assets			
Property, plant and equipment	1,000,000	900,000	800,000
Intangible assets	100,000	100,000	100,000
Goodwill	100,000	100,000	100,000
Investments in associates	50,000	50,000	50,000
Receivables	200,000	180,000	160,000
Trade and other receivables	20,000	20,000	20,000
Prepayments	100,000	100,000	100,000
Cash and cash equivalents	1,000,000	1,000,000	1,000,000
Total Assets	2,550,000	2,450,000	2,350,000
Liabilities and Equity			
Share capital	100,000	100,000	100,000
Reserves	1,000,000	1,000,000	1,000,000
Accumulated profits	1,000,000	1,000,000	1,000,000
Total capital and reserves	2,100,000	2,100,000	2,100,000
Minority interest	50,000	50,000	50,000
Non Current Liabilities	800,000	800,000	800,000
Borrowed financing	800,000	800,000	800,000
Deferred tax	50,000	50,000	50,000
Deferred tax assets	50,000	50,000	50,000
Total non current liabilities	850,000	850,000	850,000
Current Liabilities	220,000	200,000	200,000
Trade and other payables	100,000	100,000	100,000
Current portion of interest bearing borrowings	50,000	50,000	50,000
Other liabilities	70,000	50,000	50,000
Total current liabilities	320,000	300,000	300,000
Total equity and liabilities	2,550,000	2,450,000	2,350,000

LEVERAGING XBRL FOR VALUE

Organizations can leverage XBRL for value by embedding XBRL within internal processes to enhance the effectiveness, efficiency, and reliability of management communication. Aligning the internal measurement and communication of key performance metrics with external compliance requirements can bring business benefits. Using the same technology for generation and transmission of information inside the organization as is used for external compliance can reduce costs. Employing the same definitions for important metrics can minimize risk and better align external and internal communications.

Examples of XBRL Use Around the World

Although the primary function of XBRL is to improve business reporting and the electronic transfer of well-defined and verifiable business data, over the last decade, XBRL implementation has taken place in a number of settings, including:

- internal management reporting inside corporate groups;
- reducing business reporting burdens through harmonization of business-to-government reporting, such as through standard business reporting (SBR) initiatives;
- data sharing between regulatory services;
- reporting by small- and medium-sized enterprises (SMEs), as well as larger organizations to government agencies and banks;
- statistical reporting;
- supporting internal audit and internal control functions within organizations;
- supporting the integration of dispersed reporting and accounting systems;
- consolidating financial statements;
- reporting by banks, including central banks;
- submitting credit risk reports to commercial banks;
- reporting of financial statements to company offices, stock exchanges, and securities regulators;
- convergence between different accounting principles, such as international financial reporting standards (IFRSs) and local generally accepted accounting principles (GAAPs); and
- corporate tax reporting.

Implications for Preparers: Data Collection and Reporting

All types of organizations can use XBRL to reduce costs and improve efficiency in handling business and financial information. Because XBRL is extensible and flexible, it can be adapted to a wide variety of different requirements. By using XBRL, companies and other producers of financial data and business reports can automate data collection. For example, data from different company divisions with different accounting systems can be assembled quickly, inexpensively, and efficiently if the sources of information have been upgraded to XBRL. After data are gathered in XBRL, different types of reports, using varying subsets of the data, can be produced with minimum effort. A company's finance division, for example, can quickly and reliably generate internal management reports, financial statements for publication, tax and other regulatory filings, and credit reports for lenders. Not only can data handling be automated, thus removing time-consuming and error-prone processes, but the data can also be checked by software for accuracy. Progress thus far has been mainly in the area of tagging at the reporting level rather than at the transaction level, which may be more beneficial to most organizations. One of the major reasons for organizations to provide their information in XBRL is to take responsibility for their information supply chain. This allows them to provide information in an accessible way and to avoid distortion, because users do not have to re-key information, which can create numerous errors and misinterpretations and increases costs.

XBRL and Small- and Medium-Sized Enterprises (SMEs)

An important element in the worldwide development of XBRL has been as part of solutions developed to reduce the regulatory burden for SMEs. In many countries, SMEs have to report similar or identical information to a variety of regulators and other agencies, such as tax offices, local authorities, financial institutions, and statistics offices. This creates an unnecessary burden on SMEs. Commencing in the Netherlands and moving on to other countries, including Australia and Singapore, the use of XBRL for reducing the costs of compliance is known as Standard Business Reporting (SBR). While details vary from country to country, typically XBRL, which supports SBR, is incorporated within computer application systems, such as accounting systems. This hides the complexity of XBRL from SMEs. At the same time, SMEs can take advantage of standard definitions of key measures within SBR to align and improve internal processes. For example, SMEs have an opportunity to improve the structure of their chart of accounts.

Implications for Users of Business Reporting: Data Consumption and Analysis

Because data are received electronically in XBRL, users can automate their handling, thus cutting out time-consuming and costly collation and reentry of information. Software can immediately validate the data, highlighting errors and gaps that can be addressed immediately. It can also help in analyzing, selecting, and processing the data for reuse. Human effort can switch to higher, more value-added aspects of analysis, review, reporting, and decision making. In this way, investment analysts can save efforts, greatly simplifying the selection and comparison of data, and deepen their company analysis. Lenders can reduce costs and speed up their dealings with borrowers. Regulators and government departments can assemble, validate, and review data much more efficiently and usefully in performing their regulatory vigilance functions.

In the long term, financial statements prepared under one standard format may need to be filed only once for access by several regulatory agencies. For example, a financial institution may file its financial information with its regulator, and that information could be accessed by other agencies, such as the income tax authority. This one-stop filing will reduce time, costs, and efforts for filers.

XBRL Business Case—Financial Consolidation

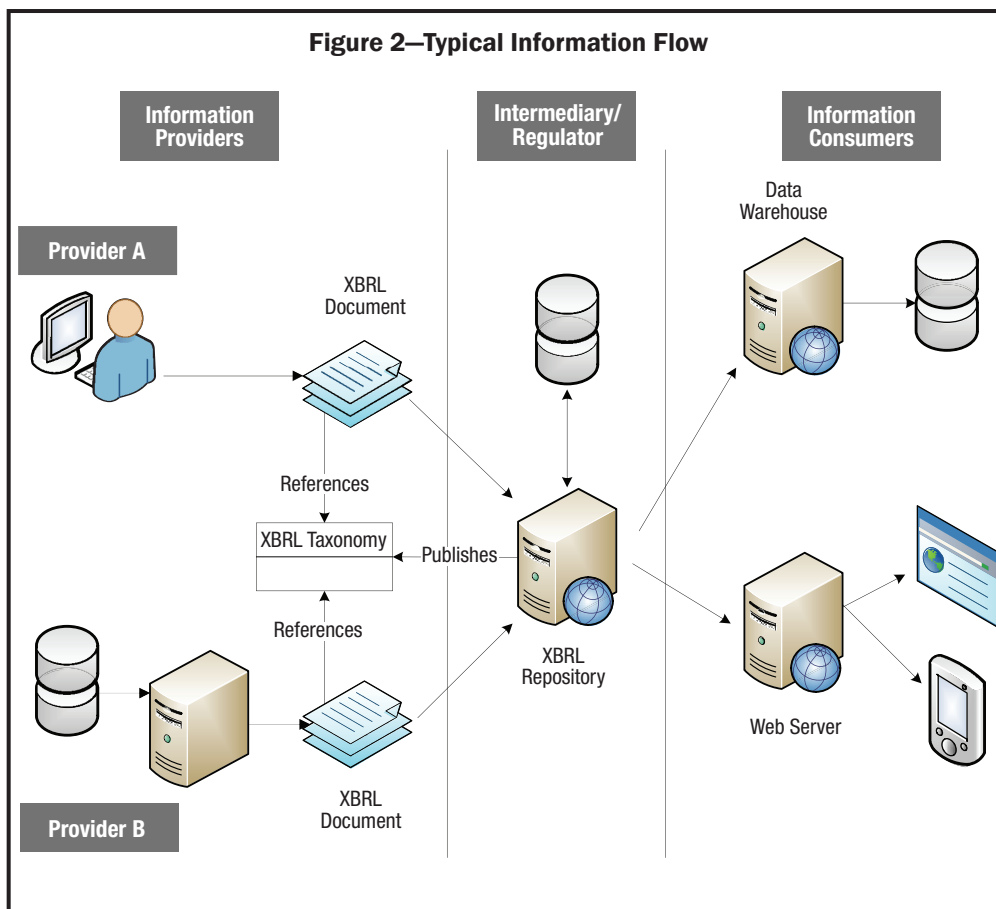
The corporate financial consolidation process commonly involves either collecting the financial statements of subsidiaries and introducing adjustments during consolidation, or collecting general-ledger-level data and preparing final figures.

In both cases, large volumes of financial information are exchanged, often sourced from a variety of accounting systems using disparate formats. This causes extensive effort to standardize the data before applying consolidation procedures. XBRL Global Ledger (XBRL GL), a framework of XBRL taxonomies that is fine tuned for the exchange of detailed information between disparate systems (see below), and XBRL Financial Reporting (e.g., IFRS or US GAAP) taxonomies are used as reference models for both subsidiaries and the parent company in order to standardize financial information and provide value-adding controls over data content.

Binding Disparate Systems Together

A primary use of XBRL is to bind together disparate software systems. Information consumers need to know nothing about how information providers actually produce the information they receive. Equally, information providers do not need to concern themselves with the technical details of how information consumers will process the information they receive. **Figure 2** shows a typical XBRL-enhanced information exchange. An information intermediary, such as a regulator or industry group, publishes a taxonomy and manages the collection of XBRL-tagged information from information providers.

Provider A takes a largely manual approach to reports for the intermediary. An employee or contractor keys information into a tool or web page that captures the data that the intermediary requires.



By contrast, Provider B has integrated production of the required information from within the accounting information system, business intelligence (BI) data warehouse, or other application. The information intermediary validates the information when it arrives from the information provider, to ensure that it aligns correctly with the taxonomy. The intermediary has its own information needs and stores the XBRL data in its databases. This may be in XBRL format or the data may be broken down and placed in a database. The intermediary then sends the information to information consumers. In most cases around the world, this information exchange is in XBRL format. In turn, the information consumer takes the XBRL file and typically repurposes the data to meet its own objectives, perhaps (a) by populating a knowledge database or (b) by publishing results on the Internet or on a private intranet.

Provider B employs XBRL GL to bind its own internal systems together as they lead up to the generation of the XBRL data for the organization's own internal reporting and external compliance reporting. XBRL GL enables the transfer of data from a chart of accounts, subjournals (e.g., payroll, fixed assets, accounts payable/accounts receivable, etc.), journal entries, or other historical transaction data across internal systems. It allows for the introduction of advanced internal controls on top of XBRL GL data sets. XBRL GL also can be used as a link between transactional data and financial reporting concepts included in other taxonomies. XBRL GL is not just a file format for moving information between disparate systems, but is also a standardized way to refer to the data in disparate enterprise resource planning (ERP) databases.¹ It can provide a single way to reference all of an organization's key metrics and data with a single vocabulary.

A key role of XBRL GL is reconciliation of related data and reports. Organizations often have to provide various reports and then reconciliations between them. For example, as accounting standards converge, reconciliation may be necessary between local GAAP and IFRS. It may be necessary to reconcile GAAP and tax reports, tracking both permanent and timing differences. Similarly, XBRL GL can be used as a foundation for improving the speed, reliability, and effectiveness of the final stages of the financial reporting process.

¹ Enterprise resource planning (ERP) is an integrated system to manage an organization's resources.

XBRL Business Case—Binding Disparate Internal Systems

Organizations often have very different transactional and reporting systems. XBRL works as a common interface, allowing dispersed systems to communicate financial and business information seamlessly in a commonly agreed manner, according to a defined set of taxonomies. Data from general ledgers and underlying transactional systems can benefit from the XBRL GL taxonomy, which allows detailed reporting of a journal entry and other, more detailed, transactional information. Other types of business information can be encoded using standard XBRL taxonomies tailored to a specific organization's informational requirements. Although international vendors and integrators already provide proprietary solutions for integrating systems, corporations can benefit from a globally accepted data reference model, rather than depending on integration achieved with commercial products or services. A key role of XBRL GL is *reconciliation*. Companies and other organizations have to provide various reports and then provide reconciliations between them; it might be between local and US GAAP and IFRS. XBRL GL may be used to provide a reconciliation between GAAP and tax accounts, tracking both permanent and timing differences. In other environments, organizations may also have to provide a reconciliation between the accountability system and the statutory requirements.

How XBRL Transformed Fujitsu's Internal Financial Reporting Platform

Fujitsu Group is a globally known multi-industry corporation with more than US \$53 billion in consolidated sales, 167,000 employees, and 430 companies. The sophisticated organizational structure—consisting of 63 different reporting systems, with over one million product codes and 1,200 interfaces—caused the company to rethink and reinvent its entire internal reporting environment. As a result, Fujitsu embarked on a project supervised by the joint efforts of the chief executive officer and chief information officer and involving seven functional units to (a) integrate dispersed systems, (b) increase visibility of the total cost of ownership, (c) implement standard reporting practices, and (d) enable performance verification and measurement. Through implementation of common XBRL- and XBRL GL-based interfaces, Fujitsu achieved better data management, improved internal processes, and enhanced business data integrity. Use of open standards made it easier for various stakeholders to access relevant data sets and supported continuously improved business and financial processes performance.²

² Additional information is available at the [Fujitsu Group's website](#) and [How XBRL Transformed Fujitsu's Internal Financial Reporting Platform](#) (PDF).

More XBRL Initiatives to Come

XBRL has seen rapid growth over the decade of its life. There are likely to be many more XBRL initiatives in coming years. At the same time, as XBRL becomes more prevalent, there will be enhanced support in software and standard business processes. The XBRL community is likely to continue to improve the underlying technologies and the quality of taxonomies. For example, the XBRL Formula standard allows for the creation of business decision rules (such as standardized financial statement ratios) that align with the underlying XBRL taxonomies. We will see XBRL formulae embedded in many XBRL implementations. Equally, XBRL implementations are only as good as the design of taxonomies. As the range of taxonomies broadens and deepens, the XBRL community will learn from this experience.

XBRL and Non-Financial Reporting

The inherent ability of XBRL to communicate a wide array of types of data supports a range of key performance indicators (KPIs) for performance and sustainability reporting. This includes reporting under the guidelines of the Global Reporting Initiative. Sustainability reporting involves many different types of metrics that are often distinct for a particular industry. XBRL allows the construction of interlocking sets of internal, industry, and global sustainability reporting taxonomies.

STRATEGIES FOR ADDRESSING XBRL WITHIN THE ORGANIZATION

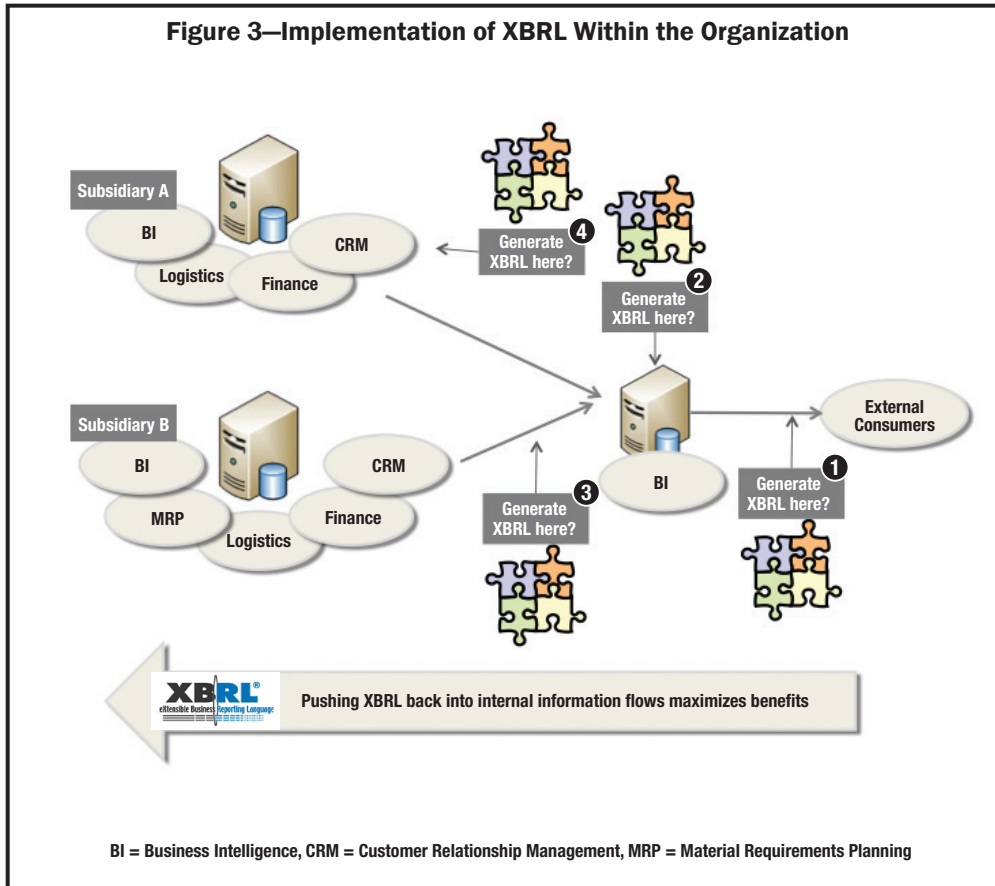
Many of the pieces necessary to roll out XBRL implementations have been put in place over the ten years since XBRL's development. These include XBRL software solutions, integration of XBRL into accounting and database software, specialist XBRL services, and experience with the building of taxonomies. As a result, the breadth and depth of XBRL implementations around the world has grown significantly. XBRL is used not only in financial reporting but also by bank regulators to determine the level of capital adequacy and solvency of financial institutions. Early evidence from XBRL projects demonstrates the potential impact of the XBRL standard: significant reduction in the reporting burden on organizations, increased data quality, elimination of duplicated data, increased speed of processing, creation of streamlined reporting processes, and reductions in the cost of reporting.

The major issue for organizations is deciding how to integrate XBRL within their own environment. The use of XBRL may result from a strategic decision to adopt it within the organization, or it may result from a requirement of an information intermediary or regulator. Organizations may also decide to leverage the mandated use of XBRL and either simultaneously embed XBRL within their internal processes or do so in a phased manner. There are multiple factors to consider in this decision-making process:

- What is the reporting domain? How central is the reporting domain to the key value-added processes of the organization?
- When the XBRL implementation involves a regulator or information intermediary, is an “open” or “closed” approach taken? Does the regulator or intermediary prohibit or strictly limit the range of extensions that can be made to the base taxonomy?
- Where can XBRL fit within the organization’s own information supply chain?
- What resources or knowledge about the use of XBRL exist within the organization or are readily available from external sources?
- What is the fit between existing internal processes and applications and any available XBRL solutions?

Organizations can adopt several methods for XBRL implementation, including:

- **Method 1: Bolt On.** At the most basic level of adoption, organizations may see XBRL purely as a compliance exercise and a cost burden. In a bolt-on approach (**figure 3, 1**), an organization takes information from various sources within the organization—in this case, from the BI warehouse—and then copies or keys this information into an XBRL tool. Assumptions about the meaning of performance metrics in this process may differ widely. There is no process change in this approach, merely a conversion of the results of the existing processes to a different format—including the existing inefficiencies.



- Method 2: Outsourced.** A second alternative is to use a third-party company to generate the XBRL by interfacing with the BI warehouse or financial reporting tool (**figure 3, 2**). In this process, the meaning of performance metrics in the BI warehouse is aligned with the external compliance reports. The organization may use the power of XBRL to layer internal metrics and definitions within an extension to the taxonomy required by the external parties. Depending on the nature of the internal or external reporting in XBRL, this may mean few, if any, changes in the subsidiaries' application systems. However, there may be a number of changes in the corporate BI data warehouse. In particular, meanings of terms and performance metrics in the data

warehouse must align with those in the externally required XBRL taxonomy. The process must be robust and repeatable. The mapping of internal metrics to the taxonomy is critical and should involve both management and the outsourced provider. As a result, the risk of communicating invalid or incorrect information is minimized.

- **Method 3: Tightly Coupled.** There are two more robust and reliable options to ensure that the information coming in to the BI warehouse aligns with the internal taxonomy (**figure 3, 3**). XBRL GL may be used as the transport medium to move performance and compliance information from the subsidiary to the head office. An alternative option, which may apply in some cases, is to reengineer the internal processes and accounting information systems within the subsidiaries (**figure 3, 4**). This will provide the greatest benefit in the longer run, but such a radical solution is not always possible.

As illustrated in **figure 3**, the benefits of XBRL are enhanced when XBRL is pushed down the internal information supply chain, mainly options 3 and 4. For the example shown in **figure 3**, an organization has two operating subsidiaries, each with its own independent accounting and transactional systems. In this case, the organization is subject to a compliance requirement to report key performance metrics, including both financial and non-financial data, to external information consumers, including regulators.

Implications for Governance: Setting Strategies and Managing Change

At the organization's governance level, decisions made about XBRL will address the key issues of assigning decision rights, managing value and risk, and integrating XBRL into strategic and tactical plans. Several important governance-level questions should be considered:

- Where will the responsibility for the various XBRL aspects reside, with accounting or IT?
- How will risk be managed?
- How do XBRL initiatives relate to IT and accounting processes and systems?
- How will the organization leverage XBRL for process improvement and reliability?
- How does XBRL relate to internal management reporting processes?
- How does management ensure the quality of the XBRL preparation process?

Risks, Security, and Privacy Concerns

As encouraging as the pace of XBRL adoption has been, organizations and regulators implementing the XBRL standard still have to (a) consider a number of aspects that may affect their current reporting processes and systems, and (b) address challenges and risk arising from new requirements.

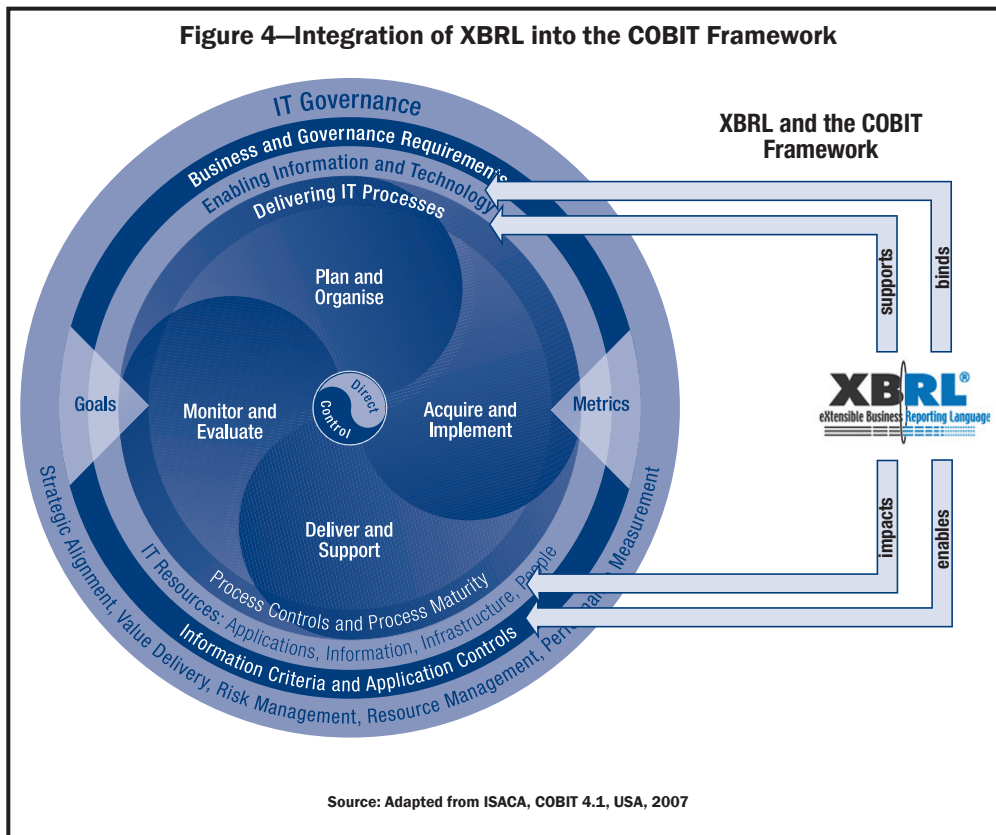


Figure 4 presents the general effects of XBRL on an organization’s information control framework, using the COBIT framework as a guide.³ XBRL enables control of information flows through open-source technology by binding business (financial and non-financial) data requirements and technical functions, including systems and platforms. Implementation of XBRL, whether for internal or external purposes, may affect key areas of organizational information systems, including IT resources, applications, and people. XBRL-based information flows allow for better (i.e., stricter) criteria and definition of controls, thus affecting

³ COBIT® is an IT governance framework and supporting tool set that allows managers to bridge the gap between control requirements, technical issues, and business risk. ISACA, COBIT 4.1, USA, 2007, www.isaca.org/cobit

the reporting supply chain's overall quality. The automation of manual processes enabled by XBRL allows a move from statistical testing of controls to 100% testing; application of the same controls, business rules, and validations to data residing in different applications; and application of the same visualization templates to data residing in different applications.

Because XBRL provides a means of (a) describing and defining business and financial information and (b) enabling its transfer and enhanced analysis, it may also affect the existing auditing and assurance processes intended to increase users' trust in reported data. Risk includes XBRL data preparation (manual processes vs. automatic), metadata mapping to internal sources, data validation procedures, and control over the integrity of data as they move from the organization to information consumers.

Implications for Internal Control and Assurance

Regardless of which implementation strategy an organization selects, controls across three major areas are necessary to manage risk:

- selecting, maintaining, and testing taxonomies and extension taxonomies;
- accurately mapping and tagging data elements to XBRL reports; and
- enforcing change management procedures for XBRL processes.

Selecting an appropriate taxonomy is one of the most important tasks in an XBRL implementation because the taxonomy is the basis for tagging data in an XBRL document. Selecting an inappropriate taxonomy can result in errors in organizational data being reported in the document. Organizations must take the time to review and understand the taxonomies. Taxonomies are updated from time to time and controls should be put in place to ensure usage of the most appropriate version.

Accurately mapping and tagging data elements to XBRL reports creates the normal mapping control issues. Controls should require appropriate business managers to review and approve the completeness and accuracy of tagged data elements and watch for consistency of tagged data elements within the selected taxonomy. Generating XBRL documents is a multi-step process and changes throughout the process must be appropriately managed.

Change management procedures are critical because of the iterative nature of producing financial reports. Adding a tagging step adds complexity, particularly if an organization uses an outsourced provider, because it requires several iterations of file transfer and tagging operations. In addition:

- regulators (or receivers) of XBRL information may experience significant changes to existing processes and procedures of relevant monitoring, supervision, and analysis functions; and

- the impact on filers (or preparers) of reports according to XBRL depends on:
 - requirements imposed by regulators (for external reporting); and
 - the approach taken for XBRL and the solutions that are applied (in both internal and external reporting cases).

XBRL and the External Auditor

In those implementations of XBRL that involve the production of financial statements, there may also be implications for external auditors. In January 2010, staff of the International Auditing and Assurance Standards Board (IAASB) issued a Question & Answers publication that highlights the growing interest in, and use of, XBRL.⁴ The publication raises awareness about how XBRL-tagged data are prepared and how they may affect financial reporting. It also clarifies that IAASB's auditing pronouncements currently do not impose requirements on auditors with respect to XBRL-tagged data or the representation of these data.

Importantly, the IAASB has recently collaborated with the International Association for Accounting Education and Research and the Association of Chartered Certified Accountants to commission research on the topic of XBRL, addressing such matters as:

- user perceptions of the reliability of financial information elements filed in XBRL format;
- how user assumptions about the nature of auditor involvement with that information affect these perceptions; and
- longer-term user expectations regarding the nature of assurance that will attach to XBRL data.

Subject to findings from this research and further developments in the environment, the IAASB will determine whether there is a clear impetus and direction for pursuing a standard-setting project on assurance relative to XBRL-tagged data.

On a different front, in 2009, in the context of the US Securities and Exchange Commission (SEC) interactive data mandate, the American Institute of Certified Public Accountants issued Statement of Position (SOP) 09-1, "Performing Agreed-upon Procedures Engagements That Address the Completeness, Accuracy, or Consistency of XBRL-Tagged Data," which guides the provision of voluntary assurance for management and audit committees.

⁴ International Auditing and Assurance Standards Board, *The Emerging Landscape* (Staff Questions and Answers, January 2010).

CONCLUSIONS

XBRL is an open standard that facilitates the flow of business information from information providers to information consumers in a consistent and reliable manner. XBRL allows metadata—data *about* data—to travel with the underlying facts in electronic business reports. XBRL leverages Internet technology to make information flows efficient, effective, reliable, and secure. At the same time, XBRL is not a solution to all information transfer problems. XBRL is designed explicitly to support business reporting and, as a result, has inherent limitations. Some of the enhanced functionality associated with XBRL is also relatively recent.

The application of XBRL to business reporting around the world involves a wide range of information providers. Some implementations encompass small- and medium-sized organizations—others take in large, publicly listed corporations. Information consumers can reside within an organization or, more typically, are external to the organization. Information consumers can be managers, regulators, information intermediaries, and stakeholders, such as shareholders, analysts, and financial institutions. Some implementations of XBRL have been entirely within organizations. In these cases, XBRL is used to bind together disparate information systems. XBRL provides a means for units within organizations to transfer transactional data and management information from system to system using a common internal taxonomy. Here, XBRL is the glue that binds very different systems together.

Most of the implementations of XBRL have been put in place by regulators and information intermediaries. When they make the choice to mandate XBRL in information transfers, they often do so to improve the efficiency and effectiveness of the reporting supply chain. These implementations are typically designed to bring benefits in terms of consumption and dissemination of information (their immediate value proposition). At the same time, these mandated implementations of XBRL deliver a tool to the regulated community that can trigger benefits that go far beyond compliance and transparency. Of course, it is not up to the regulator to mandate the use of XBRL inside organizations. These implementations can trigger widespread development of generic and tailored solutions within organizations—something that a proprietary format simply cannot achieve. This paper has emphasized the opportunities for organizations to adapt and integrate XBRL internally since this brings the most benefit and reduces the risk and impacts highlighted. Many organizations send their data to external providers of XBRL—the outsourced strategy. While the outsourced scenario is one of the quicker strategies in the short term, this approach will not allow organizations to leverage the benefits of integrating it into the wider internal reporting processes and systems of the organization.⁵

⁵ For additional information, see www.xbrl.org and the [International Center for Professional Accountants in Business](#) on the IFAC website.

ACKNOWLEDGMENTS

ISACA and IFAC wish to recognize:

Project Development Team

Ravi Muthukrishnan, CISA, CISM, FCA, ISCA, Capco IT Service, India Pvt. Ltd., India, Chair

Roger Debreceeny, Ph.D., CGEIT, FCPA, Shidler College Distinguished Professor of Accounting, University of Hawaii, USA

Laurie E. McDonald, CISA, CISM, CPA, CIA, Director of Internal Audit, Boston Capital, USA

Jan Pasmooij, RE, RA, RO, Pasmooij Consulting & Education, BV, The Netherlands

Michal Piechocki, BR-AG, CEO, Business Reporting-Advisory Group, Poland

Expert Reviewers

Eric E. Cohen, CPA, XBRL Global Technical Leader, PwC, USA

Gianluca Garbellotto, IPHIX, USA

ISACA Board of Directors, a full listing of which is available at www.isaca.org/board.

ISACA Guidance and Practices Committee, a full listing of which is available at www.isaca.org/About-ISACA/Volunteering/Pages/Guidance-and-Practices-Committee.aspx.

IFAC's PAIB Committee, a full listing of which is available at www.ifac.org/PAIB/CommitteeMembers.php.