THE INSTITUTE OF CHARTERED ACCOUNTANTS IN ENGLAND & WALES

Information for Better Markets

# Digital reporting: a progress report

An initiative from the Institute of Chartered Accountants in England & Wales

The Institute of Chartered Accountants in England & Wales is the largest professional accountancy body in Europe, with over 125,000 members in 142 countries. Its members around the world are involved in every aspect of business and reporting. They play key roles on company boards, prepare internal and external reports, perform audits, act as investment analysts, take investment decisions as managers, entrepreneurs and investors and work as regulators and standard-setters.

This report forms part of the ICAEW's Information for Better Markets campaign. The ICAEW believes that the information available to markets could be significantly improved. To make real progress in this direction, the ICAEW is exploring key underlying issues in business reporting by preparing a series of reports, hosting related debates involving interested parties, commissioning follow-up research, and making properly grounded and practical proposals.

*Prospective Financial Information: Guidance for UK Directors*, the first of these reports, was published in September 2003 and illustrates what can be achieved by an inclusive and considered approach, even in the most challenging areas of business reporting. This report, *Digital Reporting: A Progress Report*, is the third in the series.

If you are interested in following the progress of the campaign or in details of future reports and consultations, please visit the Institute's website at www.icaew.co.uk/bettermarkets. Anybody wishing to contribute to the ICAEW's work is particularly welcome. Please register via the Institute's website or email bettermarkets@icaew.co.uk.

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# Executive summary

Standards for the electronic recording, processing and distribution of financial and other business reports ('digital reporting') can bring benefits both for external regulation and investor relations and for internal financial management and decision-making.

This Institute of Chartered Accountants in England & Wales (ICAEW) progress report makes a distinction between two levels of digital reporting. Level 1 simply involves publishing and disseminating pre-existing reports more widely and more efficiently using pdf for example. Reporting at this level is standard practice already. Level 2 is less common and involves standardising the framework within which information is stored, processed and presented for reporting purposes. That makes information available in a more effective form for analysis and interoperability with other systems.

There is a theoretically possible Level 3, which would integrate all aspects of financial and management accounting and reporting and enable full drill-down by external users of an organisation's reports to the underlying detail. It is questionable whether organisations would be willing to provide this extent of access to their information systems and the focus of this progress report is on progressing to Level 2.

Widespread adoption of Level 1 digital reporting in a matter of a few years is an interesting example of the invisible hand of the market working to improve business reporting with negligible regulatory intervention. However it has had little impact on fundamental reporting issues related to the needs of different stakeholders for different information, improving the quality of investors' decisions or increasing transparency.

By contrast, Level 2 digital reporting opens up entirely new possibilities in relation to serving multiple stakeholders, meeting decision-making needs and achieving transparency, but the relatively slow take-up suggests that the invisible hand might not be enough to realise these possibilities.

The radical possibilities opened up by Level 2 digital reporting force people to face up to fundamental issues. There are possible solutions to the technical problems that established opinion might raise, so the question is now whether business wants its reporting to serve multiple stakeholders, support decision-making and be transparent? There is also a communal dimension to address and, for success to be achieved, communities of interest need to be better identified and informed particularly in relation to potential cost savings and other benefits essential to making the business case.

A widely accepted digital reporting standard at Level 2 is capable of delivering real benefits. In general terms, an effective digital reporting standard is relevant to people throughout the business reporting supply chain: producers of business reports, software vendors, accountants, auditors, financial analysts, investors and creditors. These benefits include enhanced:

- interoperability of computer systems;
- reliability; and
- comparability.

The accountancy profession has been active in an international project (the eXtensible Business Reporting Language project) for the development and promotion of a technical standard (XBRL) which can be used to develop frameworks (based on XML) in each country for creating, exchanging, and analysing financial reporting information. This report considers the progress of this project, including the vision behind it and some of the challenges involved in realising this vision.

Despite the huge potential benefits of Level 2 digital reporting, there is a need to take a disciplined view of the benefits that it can bring in the short and medium term to the financial and business community. Developing and promoting digital reporting standards, like all standards development, is a lengthy and sometimes frustrating process. There are still issues associated with building trust in digital reporting. There are also limits to what is likely to be achieved by digital reporting standards in respect of non-quantitative information. On the other hand, the process of establishing Level 2 digital reporting standards could itself help to establish these limits more objectively.

Level 2 digital reporting standards are likely to be:

- of significant benefit to medium sized and larger organisations, in streamlining internal financial reporting processes and in making up-to-date information available to decision makers; and

- of particular use to regulators and government agencies whose requirements are in the last analysis underpinned by a finite and definitive set of legally determined and binding rules.

Level 2 standards may be of less use to markets and analysts than originally supposed, because:

- they are at the end of the digital reporting value chain and the benefits do not arise for them until digital reporting standards are in wide use; and

- a lot of their activity is based on forms of probabilistic logic that do not necessarily or readily lend themselves to deterministic processing with reference to standardised data storage structures.

Nevertheless, there is tremendous market potential for enhancing data analysis and comparison through speed of access to information, elimination of costly and time-consuming reprocessing of data and greater transparency.

# Invitation to contribute to future progress reports

There is a continuing challenge of harnessing digital standards and techniques to promote information for better markets. Therefore, in the public interest, the ICAEW aims to:

- help groups to evaluate the particular benefits that this reporting might bring to them and the means by which it brings those benefits;
- encourage the widespread membership of such groups;
- identify ways of bringing tools for sophisticated digital reporting to maturity in those areas where it can add most value; and
- encourage research into sophisticated forms of financial reporting based on digital technology and into the complexities associated with bringing these forms of reporting to fruition.

This progress report seeks to further these aims by promoting informed discussion of the role of technology in improving business reporting and, specifically, financial reporting. It sets out to provide an analysis of the extent to which technology can be an instrument of change in the way financial reports are prepared and used. It discusses the resolution of associated issues and problems and the progress of initiatives to develop and implement tools to exploit the opportunities.

We intend to issue further progress reports from time to time to ensure that the continued development of digital reporting, as well as the fulfilment or otherwise of our expectations about this development, are widely shared.

In order to ensure that we reflect developments as fully and effectively as possible, we are interested in any examples, case studies, research, new developments or other additional material that would be useful to include in future progress reports.

In addition, there may be other views that are not fully reflected in this report and points of disagreement with its arguments and conclusions. If so, the ICAEW would like to hear them. Please contact:

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# 1. Introduction

## 1.1 Aims of this progress report

This progress report is designed to promote informed discussion of the role of technology in improving business reporting and, specifically, financial reporting. It is complementary to the Institute of Chartered Accountants in England & Wales' (ICAEW) November 2003 report *New Reporting Models for Business*.

The focus of the November 2003 report was the content of business reporting rather than the technology used to deliver it. The report identified controversial issues related to the uptake of new ideas about the content of business reporting. In particular, to what extent can business reporting serve multiple stakeholders, meet all decision-making needs, depend on the invisible hand of the markets to deliver progress, and achieve transparency? The potential impact of technology on these questions is also controversial.

This report deals chiefly with aspects of digital reporting in which digital technology is an instrument of change, or intended change, in the way financial reports are prepared and used. It seeks to provide not simply a technical analysis, but a wider analysis of issues associated with fostering and facilitating better reporting, the extent to which technology can help with this and any limitations of technology in helping to achieve it.

The report offers a commentary on progress in developing eXtensible Business Reporting Language (XBRL) as the preferred technical standard for digital reporting and addresses the challenges of developing any such standard to the stage of widespread use in the business community. These challenges arise in particular because of the complexity of the requirements to be standardised and because the use of technology in reporting involves communal as well as individual needs, responsibilities and benefits.

As is amplified in the 2002 report by Michael J. Jones and Jason Zezong Xiao published by the ICAEW, on *Peering into the Future: Financial Reporting on the Internet by 2010*, electronic financial reporting is of exceptional value, potentially, to major groups of stakeholders, in particular:

- accountants in business involved not only in external and internal reporting but also in the development of electronic trading within their companies;
- professional practices (initially large practices but ultimately also smaller practices) who will benefit from technical standards in the field of financial reporting and regulatory and tax filing;
- users of financial reporting such as financial analysts and investors; and
- tax and other regulatory authorities requiring regular filings of accounting and related information.

Jones and Xiao assert that technology will not be a constraint but will make data more accessible; sophisticated data analysis will enable better analysis and information intermediaries will continue to add value. This report seeks to amplify some of these assertions and to illustrate how in some cases they have already come, and in other cases might come, to be realised. It also addresses aspects of the regulatory issues considered by Jones and Xiao.

The ICAEW is a leading member of the XBRL UK organisation, which is part of a world-wide group dedicated to the development and promotion of a set of technical standards

for digital reporting. Comments on XBRL in this report could risk accusations that the ICAEW is seeking to act both as a leading advocate of XBRL as a business solution and as a judge and critic of XBRL's merits and potential by offering an independent and measured assessment of it.

However, these two roles are reconciled, and indeed justified, by reference to the ICAEW's role as a professional body acting in the public interest. The ICAEW whilst retaining its objectivity supports research and promising projects directed towards practical business benefits.

The intention, therefore, is that the report should be an authoritative point of reference and enable potential users to understand better the costs and benefits of digital reporting for business and potential barriers to its effective implementation and use.

## 1.2 Recognising the complexities of IT-based systems

This report is about digital reporting as a concept designed to help overcome the challenges of complexity in the preparation, dissemination and analysis of financial and other business reports. It also recognises that bringing this concept to fruition is itself a complex process.

Nicholas G. Carr's influential article in the Harvard Business Review of May 2003 *IT Doesn't Matter* suggests that information technology (IT) is now a commodity, like electricity, essential to the process of doing business and competing, but either generating no strategic advantage or conferring strategic advantage in particular circumstances, but only for very limited periods. One of the reasons for this is the potential within IT for standardisation. 'IT is … highly replicable', says Carr. 'Indeed, it is hard to imagine a more perfect commodity than a byte of data – endlessly and perfectly reproducible at virtually no cost. The near-infinite scalability of many IT functions, when combined with technical standardization, dooms most proprietary applications to economic obsolescence'.

The development of digital reporting involves the use of just such a process of standardisation as Carr describes, with a view to achieving just such benefits. This is the central focus of this report.

However, technology may also sometimes frustrate change, rather than enable it, particularly if the technology is promoted as a means of achieving improvements that do not materialise as quickly as potential users expect. 'Once bitten, twice shy' sums up the resulting disillusionment. Technology can sometimes be regarded, somehow by definition, as a source of improvement in business performance, even when the business case for its use is a long way short of convincing. It is astonishing that this is still the case after well over 40 years of commercial IT development but it is. Over-confidence in the inevitably beneficial effects of IT implementations can sometimes seriously retard progress in the longer term because the adverse effects of the new technological 'solution' on the business have to be rectified. This can be a painfully slow, costly and an enervating process for all concerned. It can also serve as a powerful disincentive, for those who observe these effects, to follow the same path.

It is as well to be cautious about the precise influence of technology, which is not necessarily as easy to pin down as might superficially be thought. A conference report on *The Economy and the Internet: What Lies Ahead?* by Robert E. Litan and Alice M. Rivlin, in December 2000, published by the Brookings Institution, pointed out that it is difficult

to know the baseline or benchmark against which to measure the impact of technology, such as the Internet. The report asks: 'How can we be certain how productive firms would be in its absence?' The short answer, it suggests, is that we cannot. For example, it says: 'even if the Internet makes an identifiable contribution to productivity growth, it is quite possible that this will not produce an acceleration in the growth that is already occurring'.

In addition, there is still an inherent problem of complexity in computer processing. The late Edsger W. Dijkstra asserted in *The End of Computing Science?* that 'In academia, in industry, and in the commercial world, there is a widespread belief that computing science as such has been all but completed and that, consequently, computing has matured from a theoretical topic for the scientists to a practical issue for the engineers, the managers, and the entrepreneurs. [...] I would therefore like to posit that computing's central challenge, "How not to make a mess of it", has not been met. On the contrary, most of our systems are much more complicated than can be considered healthy, and are too messy and chaotic to be used in comfort and confidence. … For us scientists it is very tempting to blame the lack of education of the average engineer, the short-sightedness of the managers, and the malice of the entrepreneurs for this sorry state of affairs, but that won't do. You see, while we all know that unmastered complexity is at the root of the misery, we do not know what degree of simplicity can be obtained, nor to what extent the intrinsic complexity of the whole design has to show up in the interfaces. … We do not know yet whether intrinsic intricacy can be distinguished from accidental intricacy. To put it bluntly, we simply do not know yet what we should be talking about, ...'.

Indeed, the ultimate grand challenge of computer science, according to Ambuj Goyal, is simplicity of design. The economics of computing has changed dramatically over the last two decades, says Dr Goyal, but the computer science has not kept up. Today the complexity of computing dominates the costs of computing, not the efficiency of the base architecture or the software that exploits it.

The issues for many organisations today seem to revolve around having a variety of platforms and systems which cannot 'talk' to each other. Producing organisation-wide data and ensuring genuine data comparability is a huge problem, let alone achieving, for example, full drill-down capability. One potential solution is the introduction of common systems and platforms, but the cost for many organisations is simply prohibitive. More importantly from a theoretical point of view, there are many examples of such approaches which, for a variety of reasons, have simply not delivered what they promised. The use of internal digital reporting standards is potentially part of the solution to these problems. If an organisation can use digital reporting standards to achieve internal systems integration, then there is little technical difficulty, other than the provision of effective security, in external users having access to the same results. Nevertheless, it is clear that there is still a long way to go before the use of IT achieves the objective of making tasks simpler as well as quicker and more co-ordinated. Standardisation is clearly one of the ways forward in achieving this greater simplicity. On the other hand, the very process of developing and implementing standards is itself fraught with both technical and procedural complexity.

## 1.3 Two levels of digital reporting

This report makes a distinction between two levels of digital reporting. Level 1 is simply a means of publishing and disseminating reports more widely and more efficiently but in essentially the same formats as at present using portable document format (pdf) for example. Level 1 reporting can cover not just financial statements and other formal financial reports, but also social and environmental reports, videos of speeches and conferences, presentation materials, press releases and reports, spreadsheets and so on.

Level 2 is a means of making the underlying information available in a more effective form for analysis and interoperability with other systems, through standardisation of the framework within which the information is stored, processed and presented for reporting purposes. This requires the agreement or acceptance of a significant proportion of the business community of a detailed global reporting standard at the technical level. Further developments of this standard might indeed, at least in principle, enable Level 2 to shade into a possible Level 3, which would fully integrate financial and management accounting and reporting and enable drill-down by external users from summarised financial reports to the detailed underlying data.

Both Level 1 and Level 2 digital reporting are underpinned by the technologies developed by the World Wide Web Consortium (W3C), a forum for information, commerce, communication, and collective understanding (see Table 1).

### Table 1: The language of the Web

The W3C develops interoperable technologies (specifications, guidelines, software, and tools) with a view to enabling the Web to achieve its full potential.

The W3C definition of a web service is 'a software system identified by a Uniform Resource Identifier (URI), whose public interfaces and bindings are defined and described using Extensible Mark-up Language (XML). Its definition can be discovered by other software systems.' These systems may then interact with the web service in a manner prescribed by its definition, using XML-based messages conveyed by Internet protocols.

XML is an approved W3C recommendation for 'marking up' data. Marking up refers to the sequence of characters that are inserted in certain places in a text or word processing file in order to indicate how the file should look when it is printed or to describe the document's logical structure.

XML can be used across all platforms and operating systems, regardless of programming language. It is designed to enable different computer programs, including business software packages, to share and process data. The main feature is that the streams of data sent from one system to another do not have to be in a set order, because each item of data is classified (or 'tagged') in accordance with an agreed taxonomy. There are technical protocols for sending XML data streams between different applications and for enabling different users to interpret the data streams in the same way.

What distinguishes Level 2 from Level 1 digital reporting is that at Level 2 items of information, such as a sales figure, are tagged at a level of detail that allows them to be interpreted and manipulated in a variety of contexts. There is thus a marked difference in the impact of Level 1 and Level 2.

In a speech to the Brookings Institution in January 2000 on *The Impact of the Internet on the Future of Financial Reporting*, former Securities and Exchange Commission (SEC) Commissioner Steven Wallman said: 'The power of the internet and technological changes generally will be an irresistible force – a positive force – in financial reporting

in the future. … They are demanding more meaningful, detailed and disaggregated information, rather than one-size-fits-all reports.'

Analysing statements like Wallman's on the use of XML-based technology as an instrument of change in reporting, however, it does seem possible to differentiate between its role as a driver of change and as an enabler of change.

In the case of a driver, the rapid and widespread take-up of a changed way of doing things arises directly from the availability of the enhanced technology used to achieve that change. The use of the technology is sufficient (whether or not it is necessary) in itself to bring about a significant change without much more ado. This is what seems to have occurred in the case of Level 1 digital reporting.

In the case of an enabler, the technology is not in itself sufficient to bring about the change but it is necessary. The change involves significant elements of enhanced technology and that enhanced technology enables the change to occur, but whether the change in fact occurs depends on other factors as well as the availability of the technology. The most notable factor is often whether there is a general perception that the value of the benefits likely to be achieved by the change will exceed the expected costs. This seems best to describe the current position in relation to Level 2 digital reporting.

It is true that it is only now becoming possible for Level 2 digital reporting to be implemented by anything other than very enthusiastic early adopters. It is possible that, if potential users see real applications and realise what is possible rather than just having an idea of theoretical benefits, digital reporting standards might eventually become a driver of change rather than just an enabler. However, in view of the many other factors mentioned throughout this report it seems unlikely that such standards would ever be the only determining factor in the change.

## 1.4 Level 1 reality and Level 2 promise

In a relatively short period of time there has been widespread adoption of Level 1 digital reporting by businesses.

According to a 2002 survey by the US National Investor Relations Institute (NIRI), nearly all investor relations officers hold quarterly conference calls with the investment community. Nearly all (94 per cent) of these conference calls are now webcast. Webcasts are left up on corporate websites for at least six days by most NIRI companies (91 per cent), and remained posted for up to 14 days by almost as many (88 per cent).

Corporate websites are a vital means of communication for investor relations departments, making them a major source of information for investors and analysts.

Companies typically provide the following information:

- Quarterly earnings releases (99 per cent)
- Press releases other than earnings (95 per cent)
- Annual report (95 per cent)
- SEC filings such as the 10K or 10Q (92 per cent)
- Transfer agent information (87 per cent)

- Detailed information on products and services (77 per cent)
- Calendar of events (76 per cent)
- Archive audio of conference calls (75 per cent)
- Biographies of senior management (72 per cent)
- Fact sheets or corporate profiles (68 per cent)
- Historical stock price information (68 per cent)

The NIRI survey presents the position in the US, but the position in the UK and other developed capital markets is comparable and very much reflects the 'state-of-the-art' in the use of Level 1 digital reporting.

Level 1 digital reporting, as well as being a useful way of achieving greater transparency, may facilitate or generate a wider interest in a company among potential investors, leading to a better market in the company's shares. Research by Tony van Kerckhoven of the University of Antwerp shows that firms with higher levels of corporate reporting on their websites are followed by more financial analysts. This effect is even more pronounced, says van Kerckhoven, in markets with lower overall analyst interest. These results and other evidence cited by the survey suggest (though do not prove) that financial analysts might use the corporate website as a screening tool in the decision whether or not to follow a company.

However, Level 1 developments are fully consistent with saying that the theoretical benefits of digital financial reporting have not so far been achieved in practice. Even the evolution of Level 1 is not necessarily complete. For example, standard file formats, with specific file references for different types of documents, have not yet been developed. It is in relation to Level 2, however, that the real benefits have yet to be realised. Mark de Haas, a consultant and author in the Netherlands, puts it like this:

'Research has shown the majority of listed companies' websites include some form of financial reporting. The big advantage of web-based reporting is the distribution speed. A web-based financial report is instantly available to anyone in the world. In general companies tend to take a linear approach toward web-based reporting; they make their reports look exactly like the paper-based versions. HTML, PDF and other 'document' oriented formats are perfect for this goal. But except for the distribution speed, these formats don't provide much benefit over paper-based reporting. If someone actually wants to use the information, it has to either be re-entered into computer applications, or copied and pasted between applications.'

Mark de Haas goes on to claim that a digital reporting standard will solve this problem, because, 'by allowing content to be created once and distributed over the Internet or effortlessly between applications, such a standard makes business reporting "smart".' This raises several questions, not least the question of how actually to achieve the seamless use, by a significant number of stakeholders, of the smart solution. References to 'effortless' IT should also ring alarm bells given the sometimes spectacular difficulties experienced in practice.

The same contrast between the reality and the promise of digital reporting is expressed by Ian Wright in his article published by PricewaterhouseCoopers entitled *Do you speak XML or XBRL?*: 'This is the information age. The Internet and electronic communication

has ensured that more information is more freely available than ever before and that the time it takes to deliver that information has decreased sharply – in theory, at least. Because how accessible, really, is that information? Even when I know exactly what I am looking for and roughly where to find it, extracting information from the World Wide Web involves a time-consuming wait and is a frustrating experience.

'The development of … XML standards offer two major advantages for the business community: financial data will be able to be prepared quickly and presented in many different forms; and the financial information can be promptly and reliably extracted by … lenders, analysts and individual investors. It is likely that large multinational companies that need to provide different levels of information for different recipients, both internally and externally, will be the first to gain the benefits from XML standards – particularly if they have the tedious task of preparing accounts for individual subsidiaries. But its potential benefits will affect more than large listed companies. Even smaller companies have to produce several versions of financial data targeted on various audiences – for its bankers, for Companies House, for the Inland Revenue, for Customs and Excise, for its website and so on. The costs of producing financial and regulatory information can be substantially reduced: reports and accounts and other paper documents could be consigned to the museum.'

Such developments point up the potential of Level 2 reporting, but even Level 2 still retains the essential features of reporting as a function separate and distinct from the operational recording of business transactions. This does not have to be the case. In principle, there is also a Level 3, which would integrate all aspects of financial and management accounting and reporting and enable full drill-down by external users of an organisation's reports to the underlying detail.

Many organisations can already integrate their financial and management information for their own internal reporting purposes. Others have problems with disparate or legacy systems but there are potential solutions based on the same XML and other technical standards that would need to be used for reporting externally at Level 3.

Whether Level 3 external reporting is possible technically today, in the short term or in the medium term, however, is not the real question. Technology is unlikely to be the barrier to Level 3. The barrier, if any, will arise from organisations being unwilling to provide the necessary level of access or information to external users. In addition, issues relating to systems security, particularly control of access to programs and data, would need to be further addressed, as would questions of liability and assurance. The latter two are potentially very big issues indeed.

# 2. Implications of digital reporting

## 2.1 Disagreements highlighted by new reporting models

The ICAEW's November 2003 report *New Reporting Models for Business* analysed 11 key proposals for new reporting models that had been put forward in recent years.

Some of the new reporting models summarised in the 2003 report are concerned with how business reporting should be delivered as well as its content. They emphasise the new possibilities opened up by developments in IT. This is particularly important to the models in *The 21st Century Annual Report* (ICAEW, 1998), *Business Reporting: The Inevitable Change?* (ICAS, 1999), *Cracking the Value Code* (Arthur Andersen, 2000) and *The ValueReporting™ Revolution* (PwC, 2001).

Although these new models are mainly concerned with the impact of Level 1 digital reporting, PwC's *The ValueReporting™ Revolution* dismisses this as the 'Paper Paradigm' and describes this use of the Internet as 'like using an Exocet to kill a mosquito.' ValueReporting™ confidently backs XBRL as the dialect of XML that will take digital reporting to what we refer to as Level 2.

The ICAEW's 2003 report sought to analyse why none of the new models had succeeded in commanding general support and identified six underlying issues where there is deep disagreement between reformers and established opinion. These key battlegrounds are summarised in Table 2 opposite.

The analysis that follows of the implications of Level 1 and Level 2 digital reporting may be summarised as follows:

- whilst digital reporting has no impact on debates about the *conceptual frameworks* or *intangibles* questions, it does offer insight into the other four underlying issues;
- widespread adoption of Level 1 digital reporting in a matter of a few years has had little impact on serving *multiple stakeholders*, *decision-making* or *transparency* but it is an interesting example of the *invisible hand*, identified by Adam Smith, working to improve business reporting with negligible regulatory intervention; and
- Level 2 digital reporting opens up entirely new possibilities in relation to serving *multiple stakeholders*, meeting *decision-making* needs and achieving *transparency*, but the relatively slow take-up suggests that the *invisible hand* might not be enough to realise these possibilities.

## 2.2 Easy wins at Level 1

Level 1 digital reporting in itself does nothing to address the suggested inherent limitations of traditional financial reporting which inspire new reporting models. This list of suggested limitations includes:

- traditional financial reporting simply does not address a broad enough range of stakeholder and user needs;
- in reporting historical financial performance, financial statements focus on lagging indicators and not leading non-financial indicators of future financial success that are relevant to decision-making; and
- traditional financial reporting's conceptual framework and criteria for recognition of assets, which are based on reliability of measurement, preclude the recognition of the intangible relationships and knowledge assets on which modern business depends.

**Table 2: Six underlying issues raised in *New Reporting Models for Business***

**1. Can business reporting serve multiple stakeholders?**

No, according to the established view. Business reporting should be determined by the needs of investors, but fortunately there is a large overlap between investors' needs and other stakeholders'. Yes, say many reformers. Different stakeholders have different needs for information, but fortunately modern technology will allow multiple stakeholders to access precisely the information they want. (We refer to this as the *multiple stakeholders* question.)

**2. Can business reporting meet all decision-making needs?**

No, according to the established view. Business reporting plays an important role in investors' decisions but there needs to be recognition of the importance of other sources of information such as direct experience of the business or contact with management. Yes, say many reformers. They give reporting a more important and comprehensive role and attribute stock market volatility, bubbles and slumps to the alleged defects of today's reporting. (The *decision-making* question.)

**3. Can business reporting depend on the invisible hand?**

No, according to the established view. Ultimately, regulation drives progress, not self-interest and market forces. Without regulation there is no comparability and bad reporting drives out good. Yes, say many reformers. Change imposed by regulation results in token compliance and boilerplate rather than useful information. Improvement can and should be left to market mechanisms. (The *invisible hand* question.)

**4. Can business reporting benefit from a new conceptual framework?**

No, according to the established view. The existing conceptual framework of the accounting standard-setters is perfectly adequate. Yes, say many reformers. The framework needs to be developed to reflect the needs of all stakeholders for non-financial and forward-looking information, and the importance of intangibles. (The *conceptual frameworks* question.)

**5. Can business reporting attach values to all intangibles?**

No, according to the established view. Intangibles are nothing new and existing management and reporting techniques can cope with them. Yes, say some of the reformers. The rise of intangibles has changed the modern economy and only radical changes in reporting will enable businesses to respond appropriately. (The *intangibles* question.)

**6. Can business reporting achieve transparency?**

No, according to the established view. Transparency in business reporting is significantly constrained by considerations of cost, competition, confidentiality and litigation. Yes, say many reformers. There should be almost no limits on transparency. (The *transparency* question.)

If these are indeed accepted as limitations requiring changes in patterns and cultures of business reporting, then digital reporting forms no part of such changes because it does nothing to overcome the limitations.

In fact, Level 1 digital reporting simply offers businesses the opportunity to supplement the distribution of whatever they currently publish through an additional medium that is quick and cheap. Whist this might allow a company to access more stakeholders, to do a better job of supporting decision-making and to appear more transparent, it does not challenge existing patterns of thinking and so encounters little resistance.

Consequently, Level 1 digital reporting has in effect already happened. It has been somehow inevitable and market developments seem to have been guided by the invisible hand. Individual perceptions and acts of self-interest have led, unintentionally to what is perceived as the good of society. The modern company is like Adam Smith's merchant: '…he generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. … he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention'.

Because of the absence of any resisting forces, the very success of Internet technology in general seems to have driven changes in business reporting. It should also be remembered that the volume of business information that is made available to investors, analysts and business managers through the World Wide Web, independently of a business's own formal reporting, is immense. It requires no special technical standardisation beyond that already available through a web browser to access and it may provide greater benefits to stakeholders, decision-making and overall transparency than any amount of formal reporting.

## 2.3 The benefits of Level 2 digital reporting

Enthusiasm for Level 2 digital reporting in accordance with a widely accepted standard is rooted in its potential to achieve major benefits in relation to the quality of business information. These benefits are:

- Interoperability of computer systems. Digital reporting can be a major element in facilitating interoperability, the merits of which are greater efficiency, speed and accuracy in business and administrative processes. Interoperability is particularly valuable for government agencies in the harmonisation of their information systems as well as for large corporates seeking to conduct electronic business more efficiently. Similar benefits can accrue for smaller businesses once standards are in place and adopted by business software vendors.

- Reliability. Extracting specified detailed information from financial statements still almost invariably involves a manual process through which errors can be introduced. Digital reporting standards enable different users to extract any item of information in those statements without the introduction of any error in the extraction process. This has great potential value in improving accuracy and efficiency in the use of financial statements, particularly if the tagging of data elements is done automatically by business software at the time the transaction takes place.

- Comparability. Classifying items of financial and related information according to a common technical standard helps to achieve greater comparability of figures in different financial reports. This facilitates financial and statistical consolidation and comparative analysis. It also ensures the integrity of data transferred between different information systems with the intention of processing the same information in different ways.

These benefits contribute directly to the four main qualitative characteristics of financial information that is useful for decision-making, as recognised in the IASB's *Framework for the Preparation and Presentation of Financial Statements* adopted in 2001, namely:

- understandability – that the information provided in financial statements is readily understandable by users;
- relevance – when information influences the economic decisions of users;
- reliability – when information is free from material error and bias and can be depended upon by users to represent faithfully that which it either purports to represent or could reasonably be expected to represent;
- comparability – whereby users must be able to compare the financial statements of an enterprise through time in order to identify trends in its financial position and performance.

A major potential benefit from digital reporting is in adding value to the decision-making processes of businesses and investors. As businesses become increasingly complex they become increasingly dependent upon a continuous flow of high quality information delivered in an accessible form. Without access to such information, management cannot be sure that the decisions they are making are well founded. Business computer systems, as the mechanism for delivering this essential commodity, have become critical to the success or failure of a business.

At the same time, it has become much easier for organisations to access and use information held by other organisations. Greater quantities of new information are publicly available in the form of databases that can be readily interrogated. This has led some of the advocates of new reporting models to suggest that digital reporting will allow users access to the same flows of high quality information, which have not hitherto been available to them. In this way the quality of information they receive will be improved as each user accesses whatever additional information it needs. PwC's *The ValueReporting™ Revolution*, for example, says that the new technology will allow users 'to look behind and beneath the summary figures so that they can understand where the numbers come from. Essentially, they want the reports that management gets… Through drill-down capabilities, companies could easily provide such detail today, with built-in levels of access geared to the individual's information needs.' The book adds that 'the … technology for the ValueReporting revolution' is XBRL – though providing everyone with 'all the reports that management gets' clearly represents a long-term aspiration and a significant extension of the scope of XBRL as it exists today.

There are also some reservations about how far the information providers would want to go with this scenario. Would they wish regulators also to have access to information on this basis as well as investors and analysts, so that, for example, the Inland Revenue could drill down into a company's accounting data and prepare tax returns for itself? The Inland Revenue is in any case quite clear that this is not part of their thinking at the present time and that company-prepared returns will continue to be the medium through which company information will be reported. A return can be specified as an integrated package of XML-encoded data and The Income and Corporation Taxes (Electronic Communications) Regulations 2003 already provide for delivery of information by means of electronic communication.

## 2.4 Fears about the brave new world

Level 2 digital reporting opens up entirely new possibilities in relation to meeting multiple stakeholder needs, supporting decision-making and promoting transparency. It represents a paradigm shift and so long as enough businesses are wary of the consequences and implementation requires significant investment and co-operation, the invisible hand is unlikely to be effective. So, what are these new possibilities?

A widely accepted Level 2 digital reporting standard has the potential to change the face of financial reporting. Anthony Carey and Sarah Foster went so far as to suggest in 2001 that Level 2 digital reports 'are to the 21st century what paper-based annual reports were to the 20th century.' It also has the potential to achieve significant cost savings by eliminating the need for data re-entry and by helping to ensure that the same figures, when used for different reporting or filing purposes, are in fact the same.

It is an interesting feature of any standard for Level 2 digital reporting that the notion of reporting by businesses for particular stakeholders becomes less important. Streams of data sent from one system to another do not have to be in a set order. Because each item is tagged, recipients can select and order the data that they want for their purposes and specify their own reports. The challenge of interpreting and serving the needs of multiple stakeholders is passed to the stakeholder. The only role of the reporting business is to provide the items of information wanted by the stakeholders.

But this raises again, though in a different form, one of the questions posed in *New Reporting Models for Business*: 'What are the general principles for presenting information in a meaningful hierarchy so that users, whether they are online or not, are presented with the most significant information first and are not misled if they fail to drill down deeper?' An additional problem posed by drill down facilities is: how can one ensure that the stakeholders who 'help themselves' are not inadvertently misled because they miss some of the information that they need for a balanced picture? The answer seems to lie in the use of techniques for showing data in hierarchies and including comments on relevance and pointers to further information.

An alternative approach, which could still be facilitated by digital reporting, but would use it in a different way, would be to make available different packages of information to different categories of user. This would match the proposal in ICAS's *Business Reporting: The Inevitable Change?* that companies should provide 'a range of pre-packaged information … based on a standardised template for each stakeholder group'. This more organised approach would involve more work for preparers and might reduce users' freedom of choice, but it could also help less sophisticated users find what they want at the same time as giving management more control over what is disclosed.

The potential implications of Level 2 digital reporting for decision-making are equally radical. The recipient specifies the tagged information that he or she needs to feed into the decision-making processes. Indeed, report creation is just a special class of decision-making process, because there always have to be important decisions in the first place about what goes into a report that is subsequently used for decision-making.

Level 2 digital reporting also transforms the concept of transparency in reporting. One of the list of suggested inherent limitations in traditional financial reporting is that the cumulative effect of all the defects of traditional financial reporting is a yawning gap between managers' information about a business (and therefore their opinion on its value and prospects) and the information available to investors and other stakeholders (and therefore their assessment of the business). As *The ValueReporting™ Revolution* suggests,

Level 2 digital reporting could eliminate this gap, because the *same* information, maintained in accordance with the *same* classification and format standards, could be used for both external and internal reporting purposes.

The radical possibilities opened up by Level 2 digital reporting force people to face up to the fundamental issues involved in questions about multiple stakeholders, decision-making and transparency. There are possible solutions to the technical problems that established opinion might raise, so the question is now whether business wants its reporting to do a better job of serving multiple stakeholders, supporting decision-making and being transparent?

Level 2 digital reporting appears to be a powerful enabler of information for better markets. Indeed, for multiple stakeholders it is a potentially splendid enabler of transparency – one of the key objectives of better financial reporting. But even with a public digital reporting standard, it is very unlikely that investors in a business, or analysts of its performance, would ever be party to exactly the same information as those involved in running that business on a day-to-day basis. Indeed, for any individual business, parity of internal and external information would not even require a public digital reporting standard. An in-house standard made available to others, together with the will to provide such parity of information, would suffice. However, there appears to be no example of a business in which such a will has yet been demonstrated.

Therefore, there is no 'invisible hand' at work here. There is no *zeitgeist* that is moving us inexorably towards the use of universal Level 2 digital reporting standards. There is no inevitability about this at all, except in so far as it may be determined by very visible pressures such as those exerted by regulators.

## 2.5 Conditions for success

### *2.5.1 A business case*

It is clear that digital reporting technology is not yet a *driver* of significant change in the patterns and the culture of financial and other business reporting. If it were, this would be a different progress report, perhaps reviewing what had been accomplished rather than pointing out what might be possible. Indeed, there might be no report if the patterns and culture of financial reporting were changing faster than it would be possible to write about them.

In relation to Level 2 financial reporting, the position is sometimes stated to be the other way round – that the promotion of a changed way of doing things, based on the proposed use of technology, actually drives the use of that technology. According to this way of thinking, it would be changes in the patterns and culture of financial reporting (for example, most obviously, changes brought about by the increasing globalisation of business and the desire for greater immediacy of reporting) that would drive the use of Level 2 digital reporting and the need for recognised standards to give efficient effect to it. This has not so far been the case and it seems right to be highly sceptical of this theory.

A more business-like approach to the concept of a *driver* seems preferable. For example, TowerGroup, a research and advisory company focused on the global financial services industry, asserts that: 'consumer value — not underlying technology — will be top driver for new consumer payments tools… At every point in the payments evolution, success will be measured as much (if not more) on business model and the ability to add tangible value over and above existing consumer payment habits, as it will on an underlying technology infrastructure'. The same principle should apply to standardised Level 2 digital reporting.

### *2.5.2 Technology that works*

Despite uncertainty about universal or widespread success, the underlying technology has to be ready. In the case of the XBRL digital financial reporting technical standard, its public international development started at the end of 1999 and is still, in mid-2004, a long way from becoming an everyday reality, but the point is that a good start has been made. If there is to be a Level 2 digital reporting standard, XBRL has a good claim to be that standard. While there are several XML-based standards under development in relation to e-trading and e-procurement, there is only one main alternative development (EDIFICAS) for financial reporting and even this is regarded by those involved as complementary to XBRL rather than competitive.

### *2.5.3 Savings*

Arguments for IT-based strategies for individual organisations are often based on the presumption that IT will reduce costs. Such strategies are then regarded as dubious because the cost savings cannot be identified, or cannot be quantified with any accuracy. It is arguable, however, that insufficient attention has been paid to IT as a means, not of reducing cost, but of shortening time-scales and thus improving the availability of information for decision-making and increasing flexibility for action on the basis of those decisions. Standardised digital reporting is just such a strategy, because the use of a standard reporting technique reduces the time-scales associated with fulfilling reporting responsibilities to shareholders and other stakeholders.

### *2.5.4 The communal dimension*

One of the main snags in developing a business case for standardised digital reporting for an individual company is the same as one of its main potential benefits – that standardised digital reporting facilitates interoperability. Thus, many of the potential advantages of standardised digital reporting are only achieved if there is a community wishing to interoperate. The potential advantages are communal, not individual. But companies usually prepare business cases, and assessments of costs and benefits, in isolation. Business cases have to be done this way for the very good reason that companies cannot assume that their competitors will wish to co-operate.

### *2.5.5 Government*

One potential 'community', in which one of the partners can ultimately impose a considerable degree of co-operation if it wishes, however, is the government sector, as exemplified in Table 3 opposite.

Communal savings can be very significant and intrinsically valuable to the community. Even if some of them accrue only to governments, the savings for the individual enterprises as a result of greater governmental throughput, efficiency and accuracy are obvious. This is reflected in the Report of the Task Force created under the US Small Business Paperwork Relief Act of 2002 (SBPRA). This stated that: 'The BCOS (one of the US President's e-government initiatives – Business Compliance One Stop) offers businesses a significant reduction in the Regulatory Information Burden. Estimates of annual savings show savings have already been realised. Examples include: The BusinessLaw.gov portal reduces the time for users to find, understand and comply with regulations. Estimated annual savings: $56 million.'

In the UK, Sir Peter Gershon recently referred to many government projects designed to achieve significantly greater efficiency. For example, 'the Rent Service e-applications project … has developed Information Communication Technology (ICT) systems which allow all customers, and in particular all local authorities, to make applications and general enquiries by way of an electronic interface. The benefits of this service will include

### Table 3: A Danish Government example

A G2B (government to business) case study, published on the Danish e-gov website by the Danish Digital Task Force notes that:

'By law, Danish companies are required to register, submit information (e.g. concerning VAT, taxes, annual accounts/reports) on a periodical basis and, in connection to this information make payments of, for instance, VAT. This poses a serious administrative workload to companies.

The business case [i.e. the government's business case for electronic filing] aims to simplify and advance the service-delivery by:

- Proposing organizational changes in the division between several central and local public authorities handling the caseload and requesting similar but different information from the companies (one point of access).
- Advancing digital solutions for instance allowing 'back end to back end' integration between companies and authorities where it is possible in light of IT readiness.
- Advancing a low tech solution (e.g. spread sheets in XML/XBRL) e-mailed to the public authority) in order to take into account the many Danish companies with no ERP-system to back the more sophisticated 'back end to back end' integration.
- Giving better access to information that is delivered by companies and often used by the authorities for, e.g., statistical purposes. Thereby, companies are given something in return for the delivered information.

The ambition is higher productivity, higher efficiency, fewer errors in case-handling as well as a reduction in the administrative workload in the companies due to public requirements. The methodology to facilitate the measurement of these criteria is in place.

The companies (already) register a substantial part of the information in their existing systems (either simple book-keeping systems or advanced ERP-systems). Thereby the business case can build on more or less established processes in the companies.

The principles of ERP are the planning and management of all the resources of an enterprise, viewed holistically, not in isolation. Attention to the principles of enterprise resource planning (ERP), even within smaller enterprises, may improve returns on investment in electronic processes, but they are likely to be of benefit to the company in isolation from the electronic processes and whether, for any particular purpose, such processes are used or not.

Introducing a virtual mail box on the web as a hub for communication between companies and authorities may add value ([such as] access to information, historical data, distribution rights management and information rights management) [for the individual enterprise].'

simplifying the housing benefit process for over 800,000 customers, faster processing of housing benefit applications by the Agency and an improved level of service to housing benefit claimants. The project anticipates being able to conduct forty per cent of their caseload using electronic transfer and envisages cost savings of around £2 million per annum.'

### *2.5.6 Internal communications*

Another *community* that is often overlooked in assessing the benefits of standardised digital reporting is the subsidiaries, departments, sections or teams within an individual organisation. Internal financial reporting for such sub-divisions can certainly benefit from a common technical reporting standard, in isolation from interoperation with other organisations, through simplification of programming and reduced multiple inputs. Such a standard can certainly be imposed, at least to a considerable degree, by the overall management of the organisation.

Indeed, a common technical reporting standard offers two significant benefits:

- efficient preparation of financial statements in many forms; and
- reliable extraction of specific detailed information from the financial statements.

The first benefit is that, with a standardised digital reporting approach, information is entered only once and is used as the single basis for whatever output is required. Examples of output from the single data source, as suggested by the XBRL International organisation, might include:

- printed financial statements;
- HTML documents for a website;
- a regulatory filing file;
- a raw XML file; and
- a specialised reporting format such as a banking report.

The second benefit of using output from digital reporting, provided it is sufficiently standardised, is that computer programs (including web browsers on the Internet) can easily extract every piece of information in a set of financial statements. Without such standardisation, extracting specified detailed information from financial statements, even electronic regulatory filings, almost invariably involves a manual process.

Both benefits are at least as much relevant to internal transfer, use and comparability of information as they are to the sharing of data outside the organisation. Too much stress has probably been placed hitherto on the latter – the former is worth detailed consideration and it may be that in many cases a business case can be developed on this basis alone. If so, then external interoperability is a total bonus. This is very important and is where there may be most benefits for companies. It is an area that might warrant further academic research.

### *2.5.7 Bringing it together*

Communal savings may be associated with conditions that contribute to a good business case for the individual enterprise. The Danish Government example in Table 3 offers some useful ideas about this.

While it may often be difficult to quantify the benefits arising from the use of standardised digital reporting in conjunction with or arising out of the benefits of integrated internal systems, including ERP, it is worth making a significant effort to do so, because such benefits can be considerable. Although it is a lot less clear-cut, there may also be significant benefits of participating in systems, associated with standardised digital reporting, that offer an associated premium service, either from the organisation receiving the report or from a commercial partner of that organisation.

# 3. XBRL

## 3.1 The XBRL approach to Level 2

'One large scale and potentially revolutionary private sector initiative that already is underway is a collaboration of growing companies, accounting firms and the AICPA [American Institute of Certified Public Accountants] to develop a common "tagging" system for various financial accounts, which goes under the acronym "XBRL"' said Bob Litan, Brookings Institution & Bear Stearns, in his testimony to the US Senate Banking Committee, on 14 March 2002. 'I would urge the SEC (and if necessary, urge the Committee to urge the SEC) to encourage this project… One possibility: require EDGAR submissions to be in XBRL by a specific date.' The US SEC announced in August 2004 that it is assessing the benefits of tagged data and its potential for improving the timeliness and accuracy of financial disclosure and analysis of Commission filings.

The technology of Level 2 digital reporting is facilitating many projects directed towards rationalising business processes. Fired by the vision of enhancing business reporting, the accountancy profession has been active in an international project (the XBRL project) for the development and promotion of XBRL technical standards. In accordance with this standard, XML-based frameworks can be developed in each country for use in creating, exchanging, and analysing financial reporting information. Such information potentially includes regulatory filings, such as annual and quarterly financial statements and tax filings, general ledger information and audit schedules.

Enthusiasm for XBRL arises from its huge potential as a practical tool, for generating a major improvement in the quality of the data used in business reporting. Those data still have to be processed in order to achieve the benefits of digital financial reporting, but XBRL provides the raw material for more productive information processing.

XML is a standard for data formats. Presentations of data formats are termed *taxonomies* and the main feature is that streams of data sent from one system to another do not have to be in a set order, because each item of data is classified (or tagged) in accordance with the taxonomy. The tag identifies the category of the data item, allowing it to be automatically read, understood and manipulated by any computer system using the same taxonomy. Taxonomies are thus dictionaries of terms designed to enable different computer programs to share and process data. The XBRL specification sets out the rules in accordance with which XBRL taxonomies for business, financial reporting and accounting purposes are required to be developed.

In principle, this development might eventually move to Level 3 digital reporting and include a means of recording every accounting transaction within a business. It is recognised that accounts could not, even then, just be generated automatically, because all accounting frameworks require the constant use of judgement as to whether detailed rules have been applied appropriately. But the XBRL community certainly regards such a development as being potentially within the scope, albeit some way in the future, of the XBRL project and as being within the potential objectives of digital reporting.

XBRL is an XML-based open standard, free of licence fees. Those involved in the XBRL project define themselves as an 'international non-profit consortium' consisting of 'approximately 250 companies and agencies world-wide, working together to build the XBRL language and promote and support its adoption'. It is important to note that, as has been pointed out within the XBRL community itself, 'XBRL does not set new accounting standards. XBRL expresses certain aspects of existing standards electronically and in an organised manner that is understandable to individuals and computer programs. XBRL does not define financial accounting or reporting concepts, rather,

it expresses these concepts electronically. XBRL is intended to improve financial statement reporting by making electronic financial statements possible'.

In addition, 'an XBRL taxonomy is not a standard chart of accounts to use, rather, it is a way to map an internally used chart of accounts to common terms used externally. XBRL does not change the underlying accounting and classification differences that exist today in financial reporting.'

It is also worth adding that the XBRL technical standard is not a programming language or tool. XBRL is a standard for the tagging of items in a database. The items still have to be extracted and output in a really comprehensible form by a report generator, either as a stand-alone piece of software or, more likely, within a more comprehensive software package. Confusion on this point sometimes arises because those developing XBRL sometimes speak loosely about analyses or reports being produced 'using XBRL'. Figure 1 below shows an example of XBRL coding of the contents of a report.

**Figure 1: Example of XBRL coding**

```
<ifrs-gp:AssetsHeldSale contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">100000</ifrs-gp:AssetsHeldSale>
<ifrs-gp:ConstructionProgressCurrent contextRef="Current_AsOf"
  unitRef="U-Euros" decimals="0">100000</ifrs-
  gp:ConstructionProgressCurrent>
<ifrs-gp:Inventories contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">100000</ifrs-gp:Inventories>
<ifrs-gp:OtherFinancialAssetsCurrent contextRef="Current_AsOf"
  unitRef="U-Euros" decimals="0">100000</ifrs-
  gp:OtherFinancialAssetsCurrent>
<ifrs-gp:HedgingInstrumentsCurrentAsset contextRef="Current_AsOf"
  unitRef="U-Euros" decimals="0">100000</ifrs-
  gp:HedgingInstrumentsCurrentAsset>
<ifrs-gp:CurrentTaxReceivables contextRef="Current_AsOf" unitRef="U-
  Euros" decimals="0">100000</ifrs-gp:CurrentTaxReceivables>
<ifrs-gp:TradeOtherReceivablesNetCurrent contextRef="Current_AsOf"
  unitRef="U-Euros" decimals="0">100000</ifrs-
  gp:TradeOtherReceivablesNetCurrent>
<ifrs-gp:PrepaymentsCurrent contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">100000</ifrs-gp:PrepaymentsCurrent>
<ifrs-gp:CashCashEquivalents contextRef="Current_AsOf" unitRef="U-
  Euros" decimals="0">100000</ifrs-gp:CashCashEquivalents>
<ifrs-gp:OtherAssetsCurrent contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">100000</ifrs-gp:OtherAssetsCurrent>
<ifrs-gp:AssetsCurrentTotal contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">1000000</ifrs-gp:AssetsCurrentTotal>
```

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**To view above figure, visit www.xbrl.org/nmpxbrl.aspx?id=44.**

## 3.2 XBRL organisation and history

There is an international consortium of those working in the XBRL development field, including the UK. International leadership for XBRL development is provided through the XBRL International organisation, which comprises several working groups and an XBRL International Steering Committee. Direction of the project to promote XBRL in the UK is through XBRL UK, a consortium made up of representatives of regulators, financial

information providers and the accountancy profession, including the ICAEW, operated through a not-for-profit company, XBRL UK Limited.

Collaborative effort on XBRL began in the US in 1998. The ICAEW's involvement in XBRL began in early 2000, when it accepted an invitation from the AICPA to join an international consortium to promote and develop XBRL standards and to raise awareness. The ICAEW organised the first international conference on XBRL, held in London in February 2001. Many further XBRL international conferences have been held since then in all parts of the world.

Since XBRL is designed to facilitate the automatic exchange and reliable extraction of financial information, the benefits arising from XBRL should become increasingly apparent as more software packages incorporate the facility to use it. In the end the significance of XBRL for the financial reporting community will be determined by the extent to which:

- it is capable of facilitating the reporting requirements of international and national accounting standards;
- it is actually used by corporations; and
- its use is required or encouraged for reporting purposes by governments, international agencies and regulators.

XBRL's potential for technical and financial effectiveness in financial reporting can only be fully realised when XBRL has achieved a critical mass of acceptance and use. The project therefore incorporates significant continuing technical and awareness-raising effort within the financial and professional community, as well as technical development and international co-operation. It is open to question whether the amount of awareness-raising effort required is worth the results so far achieved. In fact, despite the undoubted progress of XBRL, views about its merits are still somewhat mixed. The merits of XBRL, and indeed of any project which, like XBRL, seeks to achieve the full benefits of digital reporting, can also very easily be represented as its shortcomings.

For example, the potential scope of XBRL is extremely wide, so that it can appear to be insufficiently focused, embracing too many potential user groups. One issue in the progress of Level 2 digital reporting is that of bridging the gap between the technical and the strategic, particularly because the strategic needs of the different groups with a potential interest in digital reporting are so widely different. Making progress on so many fronts is challenging, because of the need to devote enough developmental and promotional resources to stimulate sufficient interest in all of the various groups .

Agreement on the resolution of technical issues in XBRL development, which is important for the establishment of robust standards, also delays the practical implementation of XBRL for real reporting purposes, leading to a loss of perceived momentum. The specification of XBRL is in version 2.1, which is regarded as a stable platform from which to move forward, but there are very few live implementations of XBRL under versions 1 and 2.

An additional criticism relates to the scale of the resources that seem to be required to achieve material development of XBRL as a working tool for non-specialist users.

Furthermore, although XBRL can in principle contribute greatly to making financial reports more understandable, it is not yet far enough developed to make it easy for software developers to incorporate it within their existing packages. In addition, until

recently, XBRL has tended to be seen as technology-driven. This has seriously inhibited potential demand from users and is counterproductive. Users such as accountants and company staff should never have to use XBRL in the technical sense at all. It should simply be a background technology that makes things work. An important factor that certainly needs to be further addressed as a pre-requisite of XBRL's wider adoption is less emphasis on the technical aspects of its development. For all these reasons, progress has been slower than was originally (even if perhaps unrealistically) hoped for. This has provided critics of the project with opportunities to express:

- scepticism that any form of widely accepted technical standard, other than XML itself, will emerge from a process that is not underpinned by legislation, regulation or mass-market demand; and

- the view that XBRL is far too complex a concept to succeed as a whole, though different sub-sets of it, not necessarily interoperable, may well be suitable for particular purposes.

It is still the case, in the UK at any rate, that the business case in general for the use of XBRL has to be made more clearly in order to attract wide industry support. In Denmark also, the widespread use of the standard is not imminent. According to the Danish Government source quoted in Table 3: 'the software companies are about to introduce XBRL, that can better support fully automated transfers between companies and authorities. This supports the business case, though the introduction and penetration of XBRL may take 3–4 years'.

Delay on this scale is a challenge to sustained enthusiasm for the project or the technology. Roger Debreceny, in a 2004 paper *'Are We There Yet? A Research Perspective on the XBRL'* describes the adoption of XBRL as 'surprisingly rapid' but the progress of implementation as 'disappointingly slow'. The challenge is not made easier by the fact that there is still a significant amount of legacy thinking surrounding the use of systems, processes and technology which could delay the introduction standards such as XBRL. There are many who would benefit from recognising and accepting that an industry-wide XML-based financial reporting standard could stimulate the development of advanced business software tools and achieve major improvements in operational efficiency. The accusation is occasionally heard that XBRL is 'a solution in search of a problem'. In fact, the problem of wasted resources through non-standard modes of information management is real enough. Nobody has ever claimed that XBRL will be a complete solution to this problem; only that it has the potential to make a major contribution to a solution.

## 3.3 Practical applications of XBRL

Benefits of standardised digital reporting are potentially relevant to a wide variety of groups. As Mark de Haas says, 'digital reporting is real money in the pockets of those in the business of processing …information professionally such as banks, regulators, and government agencies.'

Organisations committed to using XBRL include the UK Inland Revenue and the National Tax Agency of Japan, the US Federal Deposit Insurance Corporation (FDIC), Sumitomo Mitsui Banking Corporation (SMBC) and the Tokyo Stock Exchange (TSE). There are additional pilot applications at National Association of Securities Dealers Automated Quotations Systems (NASDAQ) and the Bank of America in the US and Deutsche Bank and DATEV in Germany.

### *3.3.1 Companies who prepare business reports and financial statements*

Companies could increase efficiency and accuracy in the preparation of business reports and financial statements because they would be created only once before being published as printed reports or on websites, exchanged in internal corporate reports, or submitted as regulatory filings. Each user of the information could then use its own software to rearrange the information for its own purposes and from its own viewpoint.

In fact, the widespread use of XBRL by companies to publish their financial statements has not happened yet and there is no groundswell of companies in the UK, or anywhere else particularly, to prepare accounts based on XBRL or any comparable technical standard. Nor is such a groundswell likely until XBRL is incorporated effectively into accounting software products. Nevertheless, there are significant examples of initiatives in this direction.

For example, financial information on US companies in XBRL is already provided on an experimental or demonstration basis by EDGAR Online. This is a US financial information company specialising in facilitating complex regulatory reporting by public companies, by making financial information and a variety of analysis tools available via online subscriptions and licensing agreements to financial services professionals. ICC, one of the leading business information providers of British and Irish company information, has also experimented in this area. US companies that have made all or part of their own financial statements available in XBRL, in addition to the usual forms, include Morgan Stanley and Microsoft. Reuters has also done so in the UK.

'Reuters' reputation stands on its ability to communicate and the extensible business reporting language standard it has employed this week to publish accounts online is amongst the most significant of developments in promoting transparency in financial information'. (*Accountancy Age*, November 2001)

In addition, a recent PwC survey of over 650 CFOs around Europe (*2005 – Ready or Not: IAS in Europe*) found almost 60 per cent of those still using national GAAP said the change to International Financial Reporting Standards (IFRS) in 2005 would be an appropriate time to consider using new models for reporting different information to the markets. The combination of IFRS and the progress of XBRL may therefore encourage greater transparency from companies and more enthusiasm for technologies such as XBRL. There was, however, great variation across Europe. In particular, those in the UK were luke-warm to the idea, with only 39 per cent saying that they would consider new reporting models.

### *3.3.2 Analysts and investors*

Providers and consumers of business reports could benefit from new possibilities of automated analysis and more frequent release of information as is illustrated by the NASDAQ example in Table 4 opposite.

According to Mike Willis, Founding Chairman of XBRL International and a partner at PwC, 'By reducing the time and cost of obtaining and using information, XBRL will greatly enhance the ability of companies and investors to produce and analyse information. … XBRL will lead to improved investor access and dramatically increase the speed at which investors can obtain information for their own analysis.'

## Table 4: The NASDAQ perspective

According to Michael Sanderson, CEO, NASDAQ Europe, '… improving the distribution and analysis of corporate results, especially for the 10,000 companies not covered by Wall Street analysts will broaden the market for NASDAQ's own trading services'.

What has been needed, according to NASDAQ, is:

'a technological way to address the reporting and analysis of the thousands of companies whose trading interest does not justify the hand-tinkered, labour-intensive model currently in use by investors and analysts around the world. XBRL is an effort to add 'information about information' to the ways computers for financial functions relate to each other. Traditionally, if one computer sent another computer data on a company's $5,000,000 in revenues, the number 5,000,000 would be transmitted. The receiving computer has to be programmed in a precise way to recognise the number and put it in a predefined bin called 'revenues,' and ensure that bin was expecting figures in dollars, not cents or pounds. With XBRL, the 5,000,000 is sent along with a label that indicates it is revenues measured in US dollars.

The sender standardised the information. Recipients can then view any data they choose, for example, receiving information about a company's revenues and automatically comparing it to profit, to previous revenues, or to another company's revenues. The highly labour-intensive requirement to map the sender's data into the receiver's analytical program goes away. It costs less for a receiver to 'consume' a sender's data.

There will be many benefits to using XBRL, such as these:

- Companies can distribute a higher value stream of information about themselves to the owners. They can send the same information they send today, but it will be more valuable because it is easier to use.
- Investors will have more time for analysis and insight, as less time is spent on translation and data entry.
- More companies will be used in investors' screening, because the marginal cost of preparing data on additional companies for analysis will drop to zero. Undiscovered jewels will be discovered. The market will become more liquid. We expect an industry to evolve selling analytical software that allows investors to receive and analyse corporate results. These programs should become progressively and cumulatively more complex, meaningful and valuable. We expect trade associations, stock brokerages, financial publications, independent software houses and markets to provide analytical software for investors.'

### *3.3.3 Software suppliers*

Virtually any software product that manages financial information can use a digital reporting standard (such as XBRL) for its data export and import formats, thereby increasing its potential for full interoperability with other financial and analytical applications. Opportunities for other IT consultants include data and application integration as well as developing and customising analytical programs. It is thought within this community to be relatively straightforward to enhance existing software applications based on XML to become XBRL-enabled.

According to John Connors, Chief Financial Officer of Microsoft, 'Through Internet delivery, XBRL will also provide analysts and investors with extensible financial data to make informed decisions about the company. We see XBRL as not only the future standard for publishing, delivery and use of financial information over the Web, but also as a logical business choice'.

### *3.3.4 Governments and regulators*

The use of a digital reporting standard could facilitate governments' aims of greater efficiency in data processing, for example through greater uniformity when the same underlying data is used for different purposes and through major reductions in the re-keying of data. It could also foster better access for business to e-government services and greater technical interoperability.

APRA (the Australian financial regulator) has publicly launched XBRL-based e-filing for collecting data from pension funds. This is not yet mandatory but is being actively encouraged. APRA provides XBRL-related tools and XBRL output to institutions. According to APRA, this will cut the need for duplication in the case of 40 per cent of the information communicated during regulatory processes.

In the UK the Financial Services Authority (FSA), the integrated financial services regulator, has now joined XBRL UK and announced in February 2004 that it will use the XBRL reporting language from 2005 when it begins to collect its regulatory returns electronically. The FSA expects that the use of XBRL will improve the internal efficiency and effectiveness of its regulatory reporting function, provide greater transparency around information requirements for regulated firms and ensure that the FSA is more responsive to changing data needs. Following the successful completion of an internal pilot, the FSA intends to use the XBRL standard to document regulatory reporting requirements for use within the organisation, and to publish technical requirements for reporting out into the marketplace.

Also in the UK the Inland Revenue is working with leading software developers on XBRL and has developed a taxonomy suitable for filing corporation tax computations. In 2002, the Inland Revenue announced a phased plan for its electronic filing strategy, including its plans for the phasing in of the use of XBRL. It will be able to receive computations in XBRL format and plans to extend this to statutory accounts during 2004. Initially, the Revenue will also accept the electronic filing of accounts and supporting documents in pdf format and will continue to do so in respect of supporting documents indefinitely.

The Inland Revenue has been very influential in raising interest in XBRL in the UK Government. XBRL is a standard recommended by the Office of the Head of e-Government, which also convenes a cross-departmental group on XBRL, involving such agencies as the FSA, the Office of National Statistics, Companies House and Customs & Excise.

### *3.3.5 Practising firms of accountants*

As already envisaged in the ICAEW's publication on *The Profitable and Sustainable Practice*, digital reporting in accordance with a recognised standard could allow practising firms, as well as accountants working within businesses, to focus on the value-added work of analysing business information. Part of the potential of Level 2 digital reporting, in relation to this process, is that it can provide facilities for analysis of a company's finances on the basis of which the accountant can offer strategic advice to companies. It can also provide the basis for the implementation of enhanced business systems for companies. Professionally qualified accountants are well placed to advise on the installation, use and management of such systems.

The latter opportunity, however, should perhaps be viewed with a little caution in the longer term. Standards, such as those necessary for Level 2 digital reporting, will by definition cause systems to become more standardised. The data will be maintained and processed in a more standard form than at present and the programs that process the data will be packaged with increasingly sophisticated functionality. Accountants may therefore find themselves with less scope for IT-specific consulting. The other side of this coin, however, is that the enhanced business systems will increase the opportunity for strategic business advice.

Practising firms could also benefit from the reduction in data errors and the increased speed at which information is accessible. Helping clients to implement systems for internal financial and related reporting, based on a widely accepted digital reporting standard, could also be a source of benefit to practising firms.

# 4. Implementation issues

## 4.1 Building trust in digital reporting

This section deals with a number of practical issues that have an impact on the acceptance of digital reporting. There are questions about the degree of assurance needed from the auditors about the initial and continuing integrity of digital reports available via a company's website. The way in which auditors provide their opinion on digital reports will necessarily be different from the manual signature of paper-based financial reports. Digital signatures may help in this respect, though there are issues associated with them. It is clear that electronic financial and business reporting, let alone the independent assurance of that reporting, cannot take place without confidence in the security of the underlying network and computer systems, but it is not always appreciated that this is not chiefly a matter for technicians. It is a key responsibility of management as a whole.

Success of digital reporting as a concept does not depend on a satisfactory resolution of these issues, but unless they are resolved the concept will not be fully realised.

### *4.1.1 Audit and assurance issues*

Level 1 digital reporting is simply using technology to facilitate the publishing of reports, without essentially affecting the main processes involved in preparing, presenting and using the reports. Nonetheless, it does introduce some issues relating to the assurance of the integrity of reports published in this way, and the integrity of any audit opinion attributable to them. Although such issues have not significantly inhibited the adoption of Level 1 digital reporting, they are set to become more important with Level 2 reporting.

Currently, in the UK, Bulletin 2000/1 of the Auditing Practices Board (APB) *The electronic publication of auditors' reports* provides guidance to auditors on their responsibilities if financial statements accompanied by the auditors' report are presented on an entity's website. The APB believes that paper-based versions of the signed accounts will continue for the time being to be needed. There is a lack of international guidance in relation to this issue, but this could not be tenable if digital reports constituted the official filing for a company. This issue would need to be resolved before regulators would accept filings of digital reports. There are, in addition, issues of liability, standards for assurance assignments and the place of digital signatures in the provision of audit opinions or assurance reports in respect of electronic financial statements and similar information.

In their paper on *The Auditor and Corporate Reporting on the Internet: Challenges and Institutional Responses* in the International Journal of Auditing, 2003, Andrew Lymer and Roger Debreceny address the changing environment in which external audit is conducted resulting from the use of electronic means of reporting by corporations.

The paper examines the existing pronouncements related to the audit function and Internet financial reporting from various professional bodies. The analysis by Lymer and Debreceny clearly shows that, although many of the general, procedural issues related to the external audit of online financial information are being addressed by these standard setting bodies, the wider implications of the impact on the audit function have not yet been addressed in detail. Recent changes in the legislative environment in the UK at least will require these bodies to continue to consider these wider issues and eventually to issue further guidance on this area.

### *4.1.2 Digital signatures*

Tony van Kerckhoven of the University of Antwerp remarks that disclosing financial or non-financial information on corporate websites is unregulated and ultimately voluntary.

Moreover, says van Kerckhoven, it is not always obvious to what degree the information on a website is reliable. In particular, hyperlinks from audited financial statements to unaudited information may give rise to errors of interpretation of the weight that ought to be given to different elements of the information reported on the website. As van Kerckhoven suggests, 'if it can be shown that the increase in forecast dispersion is related to the problem of judging the information quality of what is being reported on the corporate website, this is a valid economic argument for regulating Corporate Internet Reporting (CIR) (e.g. requiring each web page to be marked audited/unaudited)'. Such a possibility could be performed by the use of a digital signature by the auditor.

Digital signature technology is a technology whereby a digital code, attached to an electronically transmitted message, either uniquely identifies the sender, thereby authenticating the message, or enables the recipient to decipher an encrypted message. Digital signatures are especially important for electronic commerce. There are a number of different encryption techniques to guarantee the necessary level of security.

As William List makes clear in an ICAEW IT Faculty report *Using Digital Signatures*, many issues only arise when things go wrong. In any organisation, a risk analysis will determine the need for the use of digital signatures. It is probable that in any organisation there will be a need for signatures on a limited proportion of messages. If there is a need to have a signature then it is probable that there will also be a need to retain that signature as evidence for whatever period is specified in law or required by a business case. The difficulty is to build a system for signatures that is really robust for use when they are needed yet unobtrusive when they are not needed.

The use of cryptography for digital signatures is relatively new outside classified government circles. To be effective it is necessary to be sure that the keys in use are properly issued and used only by the people/organisations to whom the keys belong. This is reasonably easy to achieve where the issuance and control of keys is within the control of the group using the keys, for example a business organisation, a leisure club or a commercial service user group. Where keys are issued and controlled by unknown organisations or people, then there are doubts as to whether the keys can be trusted. This gives rise to most of the current unresolved issues.

At present most of the public discussions about the use of cryptography appear to be concerned with the status of messages in transit between computers or organisations. A different set of issues arises if consideration is also given to the treatment of messages before and after transmission.

A digital signature was confirmed, in the Electronic Communications Act 2000 (ECA), as being generally admissible in evidence in the UK. Part 2 of the ECA specifies as admissible in evidence an electronic signature incorporated into or logically associated with a message or data; such signature having been certified by a legal person. Statutory instruments (Section 8 orders) may be created to vary individual extant Acts of Parliament to specify the way in which an electronic signature should apply to their provisions – though this has not been done to any great extent thus far. The precise situation relating to digital signatures being used in circumstances where no statutory instruments have been passed is unclear. However, this may well be more of a theoretical problem than a real one. For example, digital certificates are not required by the Inland Revenue for filing Company Tax Returns, as Directions under Regulation 3 of the Income and Corporation Tax (Electronic Communications) Regulations 2003 make clear.

### *4.1.3 Control procedures*

In addition, there remains the basic need to establish control procedures over the technical aspects of presenting financial information reported on a corporate website.

As organisations take advantage of the commercial benefits associated with paperless or paper-reduced systems, they become heavily dependent on the availability and integrity of their computer systems and networks. The implications of this dependence are often underestimated – for example in relation to the costs of effective system security.

Control of such systems needs to be thought out from the development and implementation stage. As the widespread use of networking and interactive systems throughout organisations' systems becomes commonplace, management, control and security become increasingly vital.

Once management is satisfied that the outputs of a system are reasonably certain i.e. that it does what is required when it is required and in the form that is required, they should then review the controls within the system to ensure the accuracy and validity of the system. Further control measures should be implemented, as appropriate, as things change.

Business managers and those who advise them need to understand the place of controls in management and the possible consequences of underestimating the importance of adequate control procedures. They must be aware of the requirements of network security and the risks of unauthorised access such as line tapping or interception. They must have a sufficient grasp of how secrecy and authentication can be controlled by using encryption and authentication programs. This is not just a matter for technical specialists: it is a matter for management as a whole.

## 4.2 Setting criteria for what is digitised

A technical standard for the uniform presentation of content can only work effectively where it is applied to information prepared on a uniform basis. For example, equivalent tagging of data elements in the financial reports of different enterprises only ensures comparability between financial reports prepared in different jurisdictions to the extent that the same underlying concepts are represented by the same words in different languages, cultural traditions or regulatory requirements and are applied consistently. The comparability of outputs from digital reporting is therefore limited to this extent.

Another possible problem is the lack of common global accounting standards. XBRL is used to represent financial information that has been prepared in accordance with accounting standards. Despite movement towards the objective of global accounting standards, standards still in fact vary between jurisdictions. It may still therefore be difficult to compare reported data across jurisdictions. Yet this is supposed to be one of the key drivers behind XBRL.

Digital reporting thus facilitates comparability but does not guarantee it. This could do more harm than good if underlying concepts, as well as just terminology, are not sufficiently harmonised. There is an old mnemonic in the computer industry for the results of not addressing such ambiguities at the overall specification stage of a new system: it is GIGO (garbage in garbage out; or even worse and more insidious, garbage in subsequently perceived gospel out).

For governmental and regulatory agencies, activities are underpinned by a legal framework which encourages the use of formal reporting as the main basis of their

decisions. Digital reporting in a standardised manner may therefore help governmental and regulatory agencies to achieve their objectives. This may lead to a greater perception of self-interest by regulators in the use of standardised digital reporting, and the acceptance of this framework by those regulated, than the comparable perception among investors and analysts or business managers.

Tax returns to the Inland Revenue, returns of corporate information to the SEC, and corporate reporting returns under the French *plan comptable* (the national accounting code, requiring the use of the legally prescribed chart of accounts), are all examples of reporting in accordance with such a taxonomy and lend themselves well to electronic communication.

The French accounting profession, indeed, has long been a leader in the field of electronic financial reporting, having pioneered the flourishing 'EDIFICAS' standards for Electronic Data Interchange (EDI) based on the UN/CEFACT (United Nations Centre for Trade Facilitation and Electronic Business) international EDI standards. These are widely used in many countries within particular industries and have also been used for a number of years for more general purposes, particularly in France. These standards, like XML, are intended to facilitate data sharing. Unlike XML, they precede the widespread use of the Internet and are not web-based, being most widely used within the private networks operated by major businesses and their suppliers.

EDIFICAS is an association originally set up by the professional accounting body, the Ordre des Experts Comptables, consisting of stakeholders in business administration and processes, such as information systems providers, customs authorities, banks and information service providers. The object of the association is very similar to that of the XBRL International organisation – the electronic exchange of information for financial reporting, accounting, audit and analysis of enterprises whatever their sector of economic activity.

The EDIFICAS CHACCO message set implements the requirements of the plan comptable, together with other message sets (PRODOS, ENTREC, LEDGER, BALANC, CHAMAP, INFENT) covering journal, ledger and balance sheet requirements for generating financial and fiscal accounting reports. EDIFICAS is jointly working with those developing the XBRL standard on the creation of an XBRL General Ledger standard designed to meet both European and US reporting requirements.

However, even in the governmental sector and for the functions subject to regulatory control, there are some important issues, particularly of complexity, as the following extract from the Danish Government application in Table 3 shows:

'A first generation virtual mail box exists today and is free for private consumers.

- A firm integration between delivering information to authorities (one data stream from the company), making a payment (second data stream from the company) and possibly receiving a receipt (third data stream from the authority) is a challenge at the moment.

- The extent of subsidies delivered via taxes and exceptions in the tax law reflects an extremely complicated set of rules that may prove difficult to encompass by a digital solution building on standardized rules and a fairly simple legislation.'

Dennis Keeling, chief executive of the Business Application Software Developers Association, is reported to have the view that the creators of XBRL 'have mistakenly tried

to deal with every eventuality, focusing on every element in a financial report. One of the main problems with XBRL is that it is far too complex – it has become a nightmare for programmers and accountants …'.

The response of the XBRL community is that XBRL is indeed complicated, but the problem it solves is also complicated. Producing a simpler XML standard simply would not work. To some extent, the answer is the other way round. It is not to simplify the standard but to make implementation easier, which is what is now happening. Version 1 of the XBRL specification was good enough to generate simple forms of reporting but it was not satisfactory for something like a full set of financial statements or a tax computation. Following the finalisation of the XBRL Specification 2.1 in late 2003, software developers now have the stable platform necessary to invest in building the tools to implement XBRL and to incorporate the standard into existing accounting and ERP packages.

As a result, the level of specialist XBRL and XML knowledge that users will need to build taxonomies and instances will be far less than it has been to date. Some of the major accounting and ERP systems vendors have sounded very sceptical about XBRL but none has suggested that incorporating it into their products would in principle be particularly difficult. The main issue appears to have been, perfectly understandably, that they have not been willing to invest in such developments until the specification was stable and there were market demands from users.

## 4.3 Recognising the limits of digital reporting

It is certainly true that the developments of digital reporting and the application of technology to financial reporting, more generally, need to answer questions such as:

- Shouldn't the theory behind computer architecture, operating systems, networks, databases, etc. focus on optimising simplicity, in addition to performance?
- How do we define simplicity?
- How do multiple 'simple' systems combine in such a way that they remain 'simple'?

Digital reporting, whether in accordance with a recognised public standard or otherwise, can only ever relate to information that can be digitised. Digitisation reduces all forms of information to a single common denominator, the binary digit or 'bit', that takes the form of one or other of two possible states and can be transmitted, received and manipulated by many different types of computer and communications equipment. Everything objective can be digitised if someone has a will to do it, up to and including, for example, the human genome.

But can we and should we seek to digitise everything, including quite subjective processes of human judgement? Narrative reporting relating to strategy, corporate governance and sustainability is much less amenable to classification than traditional accounting information and presents a big challenge to the concept of reporting enabled or facilitated by standards relying on the pre-classification of the data to be reported.

### *4.3.1 The basis of decision-making*

The problem here is that decisions on investment, analysis and management are not always based, or at any rate are not always based solely, on formal reporting, but also on other knowledge, information, hypotheses and intuitions. Morgan Stanley differentiates between:

'*Qualitative analysis* – When a securities analyst evaluates intangible factors, such as the integrity and experience of a company's management, the positioning of its products and services, or the appeal of its marketing campaign, that seem likely to influence future performance, the approach is described as qualitative analysis. While this type of evaluation is more subjective than quantitative analysis – which looks at statistical data – advocates believe that success or failure in the corporate world is often driven as much by qualitative factors as by financial data.

*Quantitative analysis* – When a securities analyst focuses on a corporation's financial data in order to project potential future performance, the process is called quantitative analysis. This methodology involves looking at profit-and-loss statements, sales and earnings histories, and the statistical state of the economy rather than at more subjective factors such as management experience, employee attitudes, and brand recognition. While some people feel that quantitative analysis by itself gives an incomplete picture of a company's prospects, advocates tend to believe that numbers tell the whole story.'

Complex quantitative analysis, based on increasingly sophisticated mathematical techniques, has an increasingly important role in the financial assessment of businesses. As Dr David Vaughan, chair of Canada's Wilfrid Laurier University's mathematics department has remarked: 'Increasingly, banks and corporations rely on in-house experts for quantitative analysis. It is no longer sufficient to have a working knowledge of the theory of interest – concepts in securities, portfolio selection and modern methods of analyzing financial data require a comprehensive program of study in advanced mathematics' (for example, stochastic calculus, involving analysis of the effect of random distributions of variables on the likelihood or otherwise of a particular result). Digital reporting could have a considerable role, going well beyond formal reporting, in providing comparability of the data elements used in such analysis. Academic research on this subject could be valuable.

In addition, even though the other direct benefits of digital reporting largely apply to quantitative analysis, these benefits could release huge amounts of resource, currently spent searching for data, inputting it to other systems or analytical models and checking it, to be redirected towards qualitative analysis. This could be a significant factor in generating better information for the marketplace.

### *4.3.2 The limits of accounting*

International Financial Reporting Standards are judgmental rather than mechanistic standards, thus lending themselves less well to the application of a computer program (itself by definition a mechanistic application) processing data and storing them mechanistically in accordance with the structure of a taxonomy. Application of IFRS involves a judgmental rather than a box-ticking approach. The use of expert systems and fuzzy and probabilistic logic has not advanced to the point where it can realistically be used to implement all the judgmental requirements of IFRS electronically. This does not invalidate the digital communication of financial reports once they have been completed, but it does reduce the chances that any particular set of financial reports can efficiently be produced by a process involving the predetermined structuring of the data to be reported.

This issue is well expressed in the opinion of one early commentator on XBRL development, who said that '…it has been hilarious listening to software developers learning about XBRL, asking questions about the "object hierarchy" of XBRL … , as they one by one realize GAAP cannot be programmed.'

In addition, the extension of narrative business reporting into areas where the information

to be reported is much less amenable to classification by tagging than traditional accounting information, presents a challenge to the concept of reporting enabled or facilitated by technological standards such as XBRL. This will be an increasingly significant handicap as the importance of disclosures in Management's Discussion and Analysis (MD&A) or the Operating and Financial Review (OFR) grows. This challenge has to be addressed as part of the promotion and development of XBRL.

If subjective impressions are indeed sometimes better than numbers, and standard-setters are using old-fashioned paradigms based on an assumption that everything that is important can always be reduced, with one degree of difficulty or another, to figures, then digital reporting based on number-based paradigmatic standards, such as XBRL, may not be as effective as its proponents expect. Words in a financial report, too, are often very informative, particularly if the report is about softer aspects of financial stewardship such as environmental responsibilities. This takes up the more general point, made in the RSA's *Tomorrow's Company* report (1995), that British companies are damaged by, among other things, not only a 'national adversarial culture' but also their 'over-reliance on financial measures of performance'. The report's criticisms of financial reporting are hard-hitting. 'By itself, financial performance does not gauge the overall health of the business. It neither defines competitive performance, nor measures the broader value created through product quality, speed of response and service.'

The report also argues that although 'Good financial performance is the UK's traditional definition of success for a business ... Historic financial measures are lagging indicators: they are an unsatisfactory guide to future performance.' The report notes the growing importance of intangibles: 'The centre of gravity in business success is ... shifting from the exploitation of a company's physical assets to the realisation of the creativity and learning potential of all the people with whom it has contact – not just its employees … UK companies need to go beyond the limitations of traditional accountancy. They need new criteria, new measures and a new language of success.' In other words, something that cannot be reduced to an XML-based taxonomy.

On the other hand, XBRL-related technical debates and developments may be able to provide worthwhile insights into the more general problems and issues associated with softer areas of reporting, the extent to which these problems and issues are capable of resolution and the direction that such resolution might take. Indeed, to the extent that such reporting is against standards or requirements it should be possible to tag it, no matter how free-form the reporting itself is. The issue will be whether the tagging can be at a sufficiently detailed level to enable analysis. As a simple example, you could tag a company chairman's statement, as such, in its entirety. This is arguably not a lot of use over and above just reading it, but even this would at least enable automated search tools to locate it as an integral part of the reported information. Other reports such as the OFR can be tagged at a much more detailed level, facilitating comparison. It is difficult to imagine that new forms of reporting will not be produced to some form of standards or requirements and, if so, it will be possible to tag them by reference to those standards. The issues here are far more about what form such reports should take and the willingness of organisations to produce them, than the technology.

Indeed, the question of soft reporting will be one of the most interesting in taking the XBRL project forward, as will the associated issue of reducing standards expressed in natural language to the formal logic required by a computer program processing data with reference to a taxonomy of data items.

## 4.4 Establishing viable communities of interest

Changes to the status quo are always hard to achieve because, even if the issues and the potential of the solution are recognised and there is goodwill in principle towards it, the direct costs of change are often daunting and the disruption to established procedures (involving extensive indirect costs) even more so. In other words, before the benefits of the solution are achieved there is considerable pain. When the change has to be co-operative in order to be achieved, the acceptance of the pain will come at different times for different participants and some will not accept it at all. This is a recipe for delay and disillusionment.

In addition, the case for digital reporting standards, as for all standards, is impeded by vested interests in doing things in non-standard ways. In the case of XBRL, because of its origins, it is sometimes regarded by other business service suppliers as representing a vested interest of the accountancy profession, with which for some purposes they are in competition.

In the UK, there would be benefit in the business software package suppliers, who are already well involved with developments in the use of digital reporting for electronic tax filing, perceiving greater advantage in being closely involved with general XBRL developments. Such an approach would be helpful in generating demand from their customers for the use of a reporting standard for more general purposes. This demand may otherwise be longer delayed than would otherwise be the case. Does the enthusiasm of its supporters and the intrinsically good case for XBRL have the necessary strength to overcome the scepticism of those who do not see any benefit in it for themselves?

There are additional impediments to speedy progress in the form of limited resources. The development of XBRL taxonomies and real-life XBRL presentations of companies' accounts at this stage require a good understanding of the features of XBRL, which will not be necessary for non-specialist users of XBRL when it is incorporated into mainstream business software. Those involved in such work need to take time to assimilate and keep pace with the development of XBRL technical features. This emphasises the value of experience and the need for continuity among those working on XBRL.

The overall question is whether the case for a global standard, for a wide variety of reporting functions, can be sustained. It may be that the non-IT aspects of digital reporting need to be addressed more systematically in the future. Concentration on technical issues has tended to mark its development so far. European co-operation on XBRL may be a relevant factor. For example, XBRL is a technology that will facilitate the adoption of IFRS in 2005 in accordance with the EU Regulation of 2002. However, the origins and, still, much of the impetus behind XBRL are in the US. The development of XBRL in Europe might well be best co-ordinated mainly in Europe itself and there may be an important role here for the European Commission in helping to promote and develop the use of the standard. The EU's Transparency Directive may help in this regard, emphasising and building on the principle of better comparability of financial reports.

The contract signed in 2004 between the European Commission and a consortium, including XBRL UK, in connection with a project for *Speeding up the development and adoption of XBRL in Europe* (the XBRL in Europe Project), is particularly welcome. It is tangible evidence of the EC's recognition, through its Directorate-General for Information Society, of the potential of digital reporting as an important aspect of European business reporting development.

Any team working on XBRL requires both technical and accountancy skills and experience. This blend of skills and experience is not in plentiful supply and those who have it are in wide demand. Those involved in development need to participate in developments at international, as well as national, level. Any project for the development of a global digital accounting framework necessarily involves international agreement on, and production of, key specifications and development guidance. The number of individuals and jurisdictions taking an active part in this international effort is limited, though the UK has been and remains one of the main jurisdictions with the experience and expertise to contribute strongly. The UK jurisdiction needs the continuing sustained support of those already involved, together with new participants with the vision and also the realism to develop communities of interest that can identify their own ways of benefiting from a standards-based approach.

# 5. Conclusions

Level 2 digital reporting standards are likely to be:

- important and of considerable potential use for internal reporting purposes;
- of particular use to regulators and government agencies whose requirements are in the last analysis underpinned by a finite and definitive (albeit probably complex) set of legally determined and binding rules; and
- of less use to markets and analysts than might have been originally supposed, because a lot of their activity is based on forms of probabilistic logic that do not lend themselves to deterministic processing with reference to standardised data storage structures.

Indeed, electronic financial reporting is useful for areas that are regulated and are subject to explicit and unambiguous rules. Level 2 digital reporting is in itself a good mechanism for reducing anarchy in modes of reporting. This is why regulatory authorities in various parts of the world have viewed its potential with favour. It is likely to be less useful as a means of propagating relatively free-form information.

Nevertheless, it seems clear that a widely accepted digital reporting standard is capable of delivering real benefits. In general terms, an effective digital reporting standard is relevant to people throughout the business reporting supply chain: producers of business reports, software vendors, accountants, auditors, financial analysts, investors and creditors. In addition, an effective digital reporting standard would be of great potential value to government agencies and other regulators, including financial accounting standard setters. The International Accounting Standards Board (IASB) has been active in the development of the XBRL standard and the IASB's role as a leading proponent of the move towards XBRL will become increasingly valuable as the wider use of IFRS gathers momentum.

There is a continuing challenge of harnessing digital standards and techniques to promote information for better markets. Digital reporting standards are potentially a means of achieving the improvement, facilitation and globalisation of financial reporting, both for external regulatory and investor relations purposes and for better financial management and decision-making within companies. Nevertheless, despite the huge theoretical benefits of Level 2 digital reporting, there is a need to take a disciplined view of the benefits that it can bring in the short and medium term to the financial and business community.

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Naturally, none of the commentators should be assumed to agree with the views expressed in this report and they are not responsible for any errors or omissions.

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# Useful websites

| | |
|---|---|
| www.e.gov.dk | Danish Digital Task Force |
| www.edificas.org | EDIFICAS EDI consortium |
| www.frc.org.uk/apb | UK Auditing Practices Board |
| www.icaew.co.uk | ICAEW |
| www.icaew.co.uk/library | ICAEW Library and Information Services |
| www.icaew.co.uk/technicalpolicy | ICAEW Technical Policy web pages |
| www.iasb.org/resources/xbrl.asp | International Accounting Standards Committee Foundation: XBRL IFRS Taxonomies |
| www.icc.co.uk | ICC |
| www.niri.org | US National Investor Relations Institute |
| www.xbrl.org | XBRL International |
| www.xbrl-uk.org | XBRL UK |
| www.w3.org | The World Wide Web Consortium (W3C) |

# Glossary

## Digital reporting

The use of electronic communications technology to disseminate financial reports and other business information, particularly where common technical standards are used to facilitate this activity.

## Electronic Data Interchange (EDI)

The International Data Exchange Association defines EDI as the transfer of structured and coded data, by agreed message standards, from computer to computer, by electronic means. Often, this is achieved in practice within a particular industry by means of a standard used only or chiefly by that industry. More general EDI standards for business-related purposes, in particular the UN/EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport) standards, are promoted by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT). The emergence of EDI standards pre-dated the development of World Wide Web-related standards such as XML, so that the use of XML is sometimes regarded as being markedly different from 'EDI', but the underlying general concept is in fact the same. Indeed, the World Wide Web Consortium (W3C) encourages independent work aimed to encode the UN/EDIFACT EDI standard into XML.

## EDIFICAS

A European association, initiated in France, with the object of extending the use of EDI to the fields of finance, business and accounting information, audit, analysis and reporting for regulatory purposes.

## Enterprise Resource Planning (ERP)

The use of information systems that integrate functions such as accounting, manufacturing, distribution, personnel and project management, with a view to the enterprise using its various resources in the most effective way.

## IFRS

An International Financial Reporting Standard (IFRS) is a standard issued by the International Accounting Standards Board (IASB). Earlier standards, known as International Accounting Standards (IAS), have been adopted by the IASB as IFRSs, (although individual IASs have not been renamed as IFRSs). As the IASB issues new standards, individual IASs are replaced by IFRSs. IASs and IFRSs are collectively often referred to as IFRS.

## MD&A

Management's discussion and analysis (MD&A) is a report that must be filed annually with the Securities and Exchange Commission (SEC) of the US by a company registered with it. The report explains the company's financial condition and results, concentrating on changes and new developments. There are similar requirements for a MD&A in Canada.

## OFR

The Operating and Financial Review (OFR) is a narrative report prepared by UK companies as part of their annual reports. It is intended to enable shareholders to assess the business's strategy and its potential to succeed by providing both a commentary on the financial statements and information on matters not covered by those statements. It includes an analysis of the business's performance and position, the main trends and factors affecting the business, and descriptions of the business's strategy, resources, risks and uncertainties. Most of the disclosures in an OFR are qualitative or non-financial, and their nature often varies significantly from business to business.

An OFR has been prepared voluntarily by many larger UK companies since 1993, when the Accounting Standards Board (ASB) first issued guidance on the subject. The Company Law Review recommended, in its final report in 2001, that the OFR should be made a statutory requirement for larger companies. The Government subsequently proposed embodying this recommendation, with modifications to the scope of the requirement, in regulations made under the Companies Act 1985, supported by a mandatory ASB standard and related guidance.

## W3C

The World Wide Web Consortium (W3C) develops interoperable technologies (specifications, guidelines, software, and tools) 'to lead the Web to its full potential'. W3C is a forum for information, commerce, communication, and collective understanding.

## XBRL

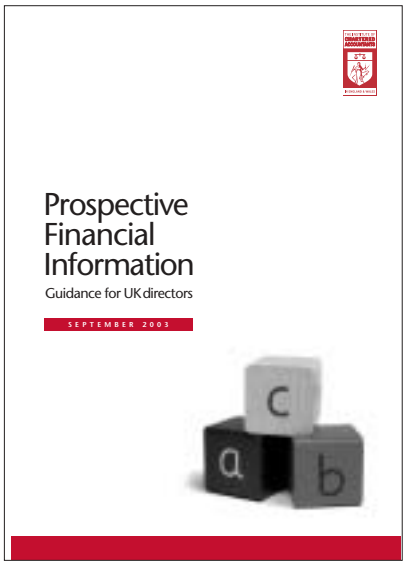
eXtensible Business Reporting Language, one of a family of languages based on XML.

## XML

Extensible Mark-up Language, a specification developed by W3C for web-based documents, allowing users to create their own tags for the elements of data to be transmitted from one computer application to another, whether within the same or another organisation.

# Information for Better Markets

An initiative from the Institute of Chartered Accountants in England & Wales

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