

Inline XBRL – Saving cost and effort for company reporting

Organisations around the world are considering the use of eXtensible Business Reporting Language to improve the efficiency of financial reporting.

For many of them, the 'Inline XBRL' format will offer the most cost-effective, flexible and efficient means of adopting XBRL.

This publication provides a simple explanation of Inline XBRL, including how it works, its benefits and its use in practice.

CONTENTS

1. Introduction	1
2. Key features of Inline XBRL	2
2.1 What Inline XBRL does	2
2.2 Inline XBRL benefits	2
3. Inline XBRL in action	4
3.1 Appearance and nature of iXBRL reports	4
3.2 Creation of iXBRL reports	4
3.3 Avoiding company taxonomy extensions	5
3.4 How iXBRL works	5
4. Benefits	6
4.1 The big picture	6
4.2 Benefits from selective use of XBRL	6
4.3 Simpler and more effective taxonomies	7
4.4 Summary of benefits for regulators, projects and preparers	7
5 Adoption of iXBRL	9
5.1 Common questions on iXBRL	9
5.2 Support for iXBRL adoption	9
Glossary	10
The XBRL UK jurisdiction	11

1. Introduction

Around the world, organisations are considering the use of XBRL (eXtensible Business Reporting Language) to improve the efficiency of financial reporting and enable the automated processing of information by software.

For many of them, the 'Inline XBRL' format will offer the most cost-effective, flexible and efficient means of adopting XBRL. In particular, it is likely to be the best method for handling company accounts and other reports which are presented in variable formats.

Inline XBRL:

- Provides a simple means of presenting XBRL reports for human readers.
- Greatly reduces effort and cost in creating XBRL reports.
- Helps to improve the accuracy of XBRL use.
- Supports the flexible introduction of XBRL, enabling easy phasing-in of projects.
- Simplifies or resolves a range of technical aspects of XBRL use, substantially reducing project costs.
- Eases the task of software support for XBRL.

Inline XBRL, normally known as **iXBRL**, is defined in a specification issued by XBRL International and is already in use in a number of projects. These include the filing of accounts and tax returns by some 1.9 million companies each year in the UK, the largest XBRL programme in the world in terms of numbers of reports.

This publication provides a simple explanation of iXBRL, covering how it works, its benefits and its use in practice.

The document is intended to help those planning XBRL projects to understand iXBRL and assess its possible use. It is published by XBRL UK, the UK arm of XBRL International.

It assumes readers already have a basic understanding of the nature and purpose of XBRL. General information on XBRL is available on the XBRL international website at <https://www.xbrl.org/>



2. Key features of Inline XBRL

2.1 What Inline XBRL does

iXBRL is designed to enable the easy creation, presentation and delivery of reports containing computer-readable XBRL data.

Reports in iXBRL are in a standard, **human-readable format**. This is based on **HTML**, the language of the internet.

Companies and other organisations are thus able to present their reports in exactly the way they wish. The reports can be viewed on screen or printed in a normal way, with standard technology. They appear to human readers as ordinary reports.

Computer-readable 'XBRL tags', which identify particular items of data and enable the automated processing of information by software, are in a hidden layer in the HTML file.

A company simply creates a report in its normal manner and uses software to add XBRL tags as required. The tags can be displayed by programs if users wish to see them. The tagged data in the report may be analysed and compared by software in a standard way.

iXBRL thus handles the delivery of a human-readable report and computer-readable XBRL data in a single file. No additional mechanisms are required to convert an XBRL filing into a human-readable form, saving complexity and cost.

The alternative form of delivering XBRL information, which consists of a file of raw XBRL data known as an **'instance document'**, requires **additional mechanisms to make a report readable**. Such files purely contain XBRL data without any presentational structure. They may be suitable for data that is entirely reported through fixed templates or tables in spreadsheets, which can be used to handle presentation. However, they are much less suitable for handling company accounts and other reports which follow highly flexible and variable formats.

iXBRL is likely to be the most efficient and cost-effective way of delivering XBRL reports which (a) have varying presentation and (b) need to be read by humans as well as analysed by software. By including XBRL tags within a human-readable file, it offers a range of major benefits across most aspects of XBRL reporting. These are summarised below.

2.2 Inline XBRL benefits

a. Presentation

iXBRL provides a straightforward solution to the presentation of XBRL reports. It enables users to see data arranged and formatted as intended by the preparer. It removes the requirement for other presentational mechanisms, which add great complexity and expense if reporting formats are variable.

b. Reducing effort and cost in creating XBRL reports

iXBRL removes the need to tag all data in a report. **Only data which is required for analysis and comparison by software need be tagged.** Other data is delivered as ordinary text as part of the iXBRL document. It does not have to be tagged in order to transmit it to consumers or enable the presentation of accounts to be rebuilt. This can greatly reduce the effort and cost of preparing XBRL reports.



c. Simplifying and phasing the introduction of XBRL

Regulators and other agencies can ‘phase’ their introduction of XBRL, initially requiring only a limited proportion of data to be tagged, while still receiving full textual reports. Tagging may be expanded flexibly as required in later phases in the light of experience. This approach enables the proportionate and cost-effective introduction of XBRL.

d. Simplifying the design and content of the ‘taxonomies’ which define XBRL tags

Taxonomies are the ‘dictionaries’ of XBRL, which define the computer-readable tags that identify individual items of financial data.

Under iXBRL, taxonomies need not be designed to cover all data which may be included in reports in order to meet the requirements of presentation. They can be designed and scaled purely to cover important and comparable data which is required for automated analysis.

Companies do not need to create their own additional ‘extension’ taxonomies to define how their reports should be presented.

All this greatly simplifies the development and use of taxonomies, reducing cost for XBRL projects, preparers and consumers.

e. Helping the production and accuracy of XBRL reports

Organisations can follow their normal process for preparing reports and simply add tags using software at a suitable stage. This involves minimum disruption to their reporting operation.

iXBRL is a major aid to achieving accurate and consistent XBRL tagging, since it enables the display of the text of reports with associated XBRL tags alongside.

f. Easing the task of software development

By using HTML, the language of the web, for delivering reports, iXBRL is employing an open, freely available standard which is well understood by software companies. This greatly reduces development expense and risk. A broad range of software products already exist to handle iXBRL report production and consumption. Standard tasks such as display and printing can be handled by ordinary, off-the-shelf software.

These various benefits from iXBRL combine to reduce substantially the cost and effort of setting up and running an XBRL filing programme and the work and expense for preparers in creating XBRL reports.

Experience has shown that the cost for companies of filing in Inline XBRL is a fraction of the cost of filing in instance documents in projects of comparable scope.

The following sections explain iXBRL and its benefits in more detail.

A separate publication, ‘**Company Reporting in the UK – an XBRL Success Story**’, describes the UK XBRL programme which uses Inline XBRL. This puts the use of iXBRL in the context of large-scale XBRL project. It is available via the XBRL UK website at <http://www.xbrl.org.uk/>.

Technical information on Inline XBRL, including its specification, is on the XBRL International website at <http://specifications.xbrl.org/spec-group-index-inline-xbrl.html>.



3. Inline XBRL in action

3.1 Appearance and nature of iXBRL reports

An iXBRL report appears to human readers as a normal document. Its layout and content is fully flexible and it can include graphics as well as text. It has all the characteristics of HTML, the language of the internet. It can be displayed on screen and printed as required.

The figure below shows as an excerpt from an iXBRL report in an ordinary display, such as a browser.

	2014 £000	2013 £000
Turnover	170,281	168,021
Cost of sales	126,006	127,026
Gross profit	44,275	40,995
Distribution costs	14,291	14,081
Administrative expenses	14,856	14,506
Other operating income	524	421
Operating profit	15,652	12,829

XBRL software will highlight any data that is tagged. It will also display tagging information, typically in a pop-up or associated window. The figure below shows the same report excerpt in an XBRL software display. The yellow highlighting identifies data that is tagged in XBRL. The pop-up box shows the tagging on a particular item.

	2014 £000	2013 £000	
Turnover	170,281	168,021	Tag: Cost of sales Context: Previous year
Cost of sales	126,006	127,026	
Gross profit	44,275	40,995	
Distribution costs	14,291	14,081	
Administrative expenses	14,856	14,506	
Other operating income	524	421	
Operating profit	15,652	12,829	

While the detailed features of iXBRL software programs will vary, all applications should enable users easily to review the tagging applied to a report.

This provides a reliable means for assessing, checking and, if necessary, auditing, XBRL tagging. Data which has been tagged in XBRL stands out clearly – as does data which has not been tagged.

3.2 Creation of iXBRL reports

Using iXBRL, companies can follow their normal processes to create reports and then add tags using appropriate software, often through a simple or automated stage.

In the UK, the creation of iXBRL reports has become a standard feature of accounts and tax software. All types of company accounts are covered, including complex ones from large organisations and simple ones from small entities. The accounts vary greatly in format and presentation.



Accounts production software for smaller companies with less complex accounts will create iXBRL reports automatically. Users enter accounts data in their normal manner. They need have no special knowledge of XBRL and may even be unaware of XBRL tagging. Such software generally uses flexible templates that tie accounting data to the correct tags ‘behind the scenes’. Users face no additional costs or effort in creating accounts in iXBRL format.

Preparers of more complex accounts, which typically are in spreadsheet or document form, will use tagging software to apply tags to the accounts. Such software may rely entirely on manual tagging or may include some automated processes which suggest correct tagging to users. The users of such software will require some XBRL expertise. Some larger companies with more complex accounts have set-up iXBRL production in-house, while others have used their accounting firms or other third party organisations to convert accounts to iXBRL. Costs of third party services vary with the size and number of accounts being handled. However, they are a **small fraction of the typical costs** in comparable programmes elsewhere which are **not** using iXBRL.

3.3 Avoiding company taxonomy extensions

Under iXBRL, companies do not need to create their own taxonomy ‘extensions’ to represent the particular structure and presentation of data in their reports. The presentation of their reports does not have to be rebuilt from instance documents using information in such extensions. Presentation is handled entirely by iXBRL.

This is a major benefit of iXBRL. The creation of company extensions to handle presentation places a heavy burden on preparers in terms of effort, complexity, expertise and cost.

Projects using iXBRL may still choose to allow company taxonomy extensions to define tags to represent certain company-specific data. However, such extensions do not have to handle presentation. The UK XBRL programme avoids company extensions altogether – using innovative taxonomy techniques to cover all data required for analysis. These techniques are explained in the [publication on the UK programme](#) mentioned in section [2.2](#).

3.4 How iXBRL works

iXBRL is based on a very simple principle. Computer-readable XBRL tags are simply inserted into an HTML document using a syntax which means the tags are ignored by browsers and other standard display software. However, they are identified by XBRL software, which can extract the tagged data.

The figure below shows the principle. The top line shows information as displayed to a reader. The second shows the corresponding line inside an HTML file. The symbols `<html>` and `</html>` represent HTML formatting information that controls the presentation of the text. The third line shows a line in an iXBRL file with XBRL tagging information inserted. The symbols `<XBRL>` and `</XBRL>` represent the name of the tag and other XBRL information – for example on the scale and currency of the number.

Reader sees:	Turnover	170,281
Line in HTML file:	<code><html></code> Turnover	170,281 <code></html></code>
Addition of iXBRL:	<code><html></code> Turnover	<code><XBRL></code> 170,281 <code></XBRL></html></code>

As can be seen, the number displayed to a user is the **same** as the number contained within a tag. Tagged data, whether numbers or text, corresponds directly and reliably to that seen by readers. This helps to ensure error-free and trustworthy reporting of data tagged in XBRL.



4. Benefits

4.1 The big picture

iXBRL has major benefits in simplifying and reducing the cost of XBRL reporting where:

- Reports have varying format and content and cannot be entirely predefined in templates.
- Users wish to be able to view reports and data in the form intended by reporting organisations.

These are common conditions for company reporting under both international and national accounting standards.

In these cases, iXBRL provides a very efficient solution to the delivery and viewing of reports. It enables organisations to present reports to users in the form they wish. It avoids complex and costly mechanisms to reconstruct reports from instance documents containing raw XBRL data. It provides the viewable report and related XBRL data in a single file, avoiding any need to tie together separate display and XBRL files.

iXBRL also simplifies and improves the process of reporting. It reduces effort for preparers and consumers and helps to strengthen the production of accurate and consistent information for analysis.

4.2 Benefits from selective use of XBRL

iXBRL frees XBRL projects from the need to tag all data in reports. The tagging of an entire report is required by projects when a viewable report has to be rebuilt from an instance document. All data has to be tagged in order to transmit it to recipients and enable a report to be reconstructed.

Since iXBRL handles presentation and allows information to be reported as ordinary text, only data which is required for automated analysis and comparison need be tagged in XBRL.

This is likely to represent a large saving in effort for both preparers and consumers of reports. It has major benefits for the design of taxonomies, which define the data that should be tagged, as well as the efficient operation of projects.

It also greatly increases the flexibility of XBRL projects. Regulators and other agencies responsible for XBRL projects can phase the introduction of XBRL, expanding tagging requirements in stages in the light of experience. Projects can avoid a 'big-bang' approach, thus reducing risk, complexity and cost.

There are many reasons why it may not be necessary or appropriate to tag all data in reports. Only a proportion of items may be amenable to analysis, comparison or individual archiving. For example:

- Lengthy textual statements may be best read in a report in their original form. Their variable content may not be suited to useful tagging.
- Unpredictable and unusual company-specific data is very unlikely to be handled adequately by predefined analysis rules. Such data may be best left untagged and viewed as required by recipients. XBRL software can easily highlight such untagged data to consumers. Company-specific data can still be tagged, provided it follows a predictable pattern.

By enabling tagging and automated analysis to focus on appropriate data, iXBRL helps to ensure cost-effective, useful and reliable results from XBRL reporting.



4.3 *Simpler and more effective taxonomies*

The quality and features of taxonomies used in an XBRL project are critical to its success. Taxonomies determine the data to be tagged and the accuracy, consistency and efficiency of tagging. They govern the ease and value of data analysis.

The use of iXBRL enables the design of far simpler and more effective taxonomies:

- Taxonomies need only cover the data which is required for automated analysis. They do not have to be stretched to cover all data which may appear in reports or to enable the ‘plugging in’ of company extensions.
- Taxonomies do not need to include a range of special structures and features to represent the way individual reports are presented. For example, non-iXBRL taxonomies may have to represent the layouts of individual financial tables as well as alternative labels to reflect the positioning and use of tags in reports.
- By contrast, taxonomies for iXBRL reporting can focus on displaying available tags to users in the cleanest and clearest way. The taxonomies are only concerned with representing the data in a report that is needed for analysis – not with a myriad of alternative presentations.

Taxonomies for iXBRL reporting are thus easier and more efficient to use than taxonomies that have to support the presentation of reports. They demand less effort from preparers. They are likely to produce more accurate and consistent tagged data. They are also simpler and cheaper to develop.

These benefits improve the results of projects while reducing risks and costs for both preparers and consumers.

The impact of iXBRL on the taxonomies used for filing of accounts in the UK is described in the separate publication on the [UK programme mentioned earlier](#) in [section 2.2](#).

4.4 *Summary of benefits for regulators, projects and preparers*

By adopting iXBRL, organisations running XBRL projects do not just obtain a solution to the presentation of reports – they simplify the process of preparing, capturing and using business data.

a. iXBRL reduces the burden on preparers of reports

- Preparers can fit the creation of reports into their normal processes, adding XBRL tags into a human-readable report at a convenient stage.
- The tags applied to reports can be easily viewed and checked in appropriate software, helping to confirm the accuracy of tagging.
- Preparers only have to tag data which is useful for analysis, rather than all data in a report. They will generally be working with smaller, simpler taxonomies.
- Preparers do not have to create company-specific extension taxonomies to represent the particular presentation of their reports.

Taken together, these benefits substantially reduce the cost, effort and complexity of XBRL reporting for preparers.



b. iXBRL simplifies and improves the operation and results of projects

- Projects do not need to develop methods for handling the presentation of reports, greatly reducing complexity and cost.
- Tagging only needs to cover the data required for automated analysis or comparison. Other data can simply be left as text in iXBRL reports. This reduces effort and streamlines the handling of reports.
- Taxonomies can be simpler and more efficient. They are cheaper to develop and they support more reliable analysis.
- Projects to introduce XBRL can be phased efficiently, with tagging requirements expanding in the light of experience. This greatly reduces implementation burdens, cost and risk.
- iXBRL simplifies the task of software developers. By using HTML, the language of the web, iXBRL is employing a widely adopted, well-understood standard. This eases development tasks and greatly reduces costs and risks.

c. iXBRL reduces cost and complexity for regulators and consumers of reports

- Regulators and other organisations receiving iXBRL reports have a **ready-made means of viewing and publishing reports either internally or externally**, since HTML files can be readily displayed and printed using standard, widely available software.
- The processing and storage of inline documents is straightforward. The format based on HTML is a familiar one to developers and does not require unusual or overly complex techniques.
- Tagged XBRL data can be analysed, compared and stored in a standard manner. iXBRL does not limit in any way the automated analysis of XBRL data. In practice, it may enhance analysis by supporting taxonomies that are simpler, more efficient and capable of producing consistent, data-centred tagging.
- Regulators and other consumers of reports do not have to handle company-specific taxonomy extensions and other mechanisms for presenting XBRL data. This represents a great saving in complexity and cost.
- Regulators do not have to store and coordinate two documents for each report, one for presentation and one for XBRL data, since iXBRL handles both in a single filing.
- Regulators and consumers can easily make spot-checks on the quality of tagging in iXBRL reports, viewing the content alongside the applied tags in suitable software. Both tagged and untagged data can easily be highlighted and reviewed. This aids the assessment and quality management of filing.
- iXBRL is robust, reliable and already proven in existing projects, including large-scale filing. Existing software and experience is available to support regulators and others who wish to implement iXBRL.

By freeing XBRL from the demands of presentation of reports, iXBRL enables it to do its intended job of identifying financial data. Benefits are better data for analysis and substantially reduced cost, effort and risk for all involved in preparing and receiving business reports.



5 Adoption of iXBRL

5.1 Common questions on iXBRL

a. The PDF format is often used at present for publishing financial reports – can Inline XBRL work with PDF rather than HTML?

No. PDF is a proprietary standard. XBRL is intended to work with entirely open, royalty-free standards. It would anyway be technically complex to try to include XBRL tagging information within PDF.

By using HTML, iXBRL is following a simple, open and flexible standard which can be handled by freely available software. The underlying files can be easily read. Files in HTML can be easily transmitted and displayed. The standard is familiar to developers.

Organisations also appear unlikely to use PDF when creating reports, even if they publish final versions in that format. They are more likely to work in document or spreadsheet formats, which can be converted to either HTML or PDF.

The experience of major projects has shown that companies have found adoption of the HTML-based iXBRL format an easy one. Users have found HTML the best option for viewing purposes. Suitable printing is easy to achieve. If companies must have a final PDF version for display purposes, then conversion of an HTML report to PDF is straightforward.

b. Can iXBRL handle all the presentation requirements for company reports?

Yes. It can handle all the formats and languages that may appear on internet pages. It allows alternative forms of numbers and dates. It supports graphics. In practice, presentation is only limited by what regulators and other recipients may permit – not by iXBRL itself.

c. Is iXBRL reporting as rigorous and accurate as reporting via XBRL instance documents?

Yes. It is equally rigorous, if not more so. Regulators who employ iXBRL can be just as demanding over tagging quality and accuracy as those who do not. iXBRL users believe they achieve higher standards by using taxonomies that focus on appropriate and consistent tagging of data and that avoid the complexities of other approaches to presentation.

5.2 Support for iXBRL adoption

iXBRL is an established and growing means of reporting in XBRL. A large number of software vendors provide applications for preparing or processing iXBRL reports. A range of accounting firms have strong experience in its use. Regulators such as HMRC, the UK tax authority, have been using it for a number of years.

The iXBRL specification, a 'primer' document and other supporting technical information is available on the XBRL International website at <http://specifications.xbrl.org/spec-group-index-inline-xbrl.html>

'Company Reporting in the UK – an XBRL Success Story', describes UK use of iXBRL and is available on the XBRL UK website at <http://www.xbrl.org.uk/>. This includes references to a range of other publications that provide further information.

For more information, please contact XBRL UK via email at: info@xbrl.org.uk.



GLOSSARY

Extension taxonomy	An extension taxonomy modifies another taxonomy by adding tags, providing alternative presentation views or other changes. Extensions must not alter the definition of tags in the base taxonomy. (See other glossary entry for 'taxonomy'.)
IFRS	The international accounting regulations published by the International Accounting Standards Board (IASB).
Inline XBRL or iXBRL	Inline XBRL provides a human-readable version of a report based on HTML, the language of the web, with XBRL tags hidden from view in the underlying file. It provides a powerful solution to the presentation of XBRL data and offers a range of other benefits. Also known as iXBRL.
Instance document	A file of raw XBRL data. This will consist of facts being represented in XBRL together with computer-readable XBRL tags and other related XBRL information. It is intended for consumption by computer software not human readers. It does not contain any presentational structure.
Tag	An XBRL tag is the computer-readable identifier attached to an item of business data.
Tagging	The application of XBRL tags to a report as part of the process of creating an iXBRL report. (See other glossary entries for 'tags' and 'iXBRL'.) Tags are applied through software. This may be done automatically or manually, depending on the nature of the report and software used.
Taxonomy	Taxonomies are the dictionaries of the XBRL language, containing the computer-readable tags used to identify specific financial and business data items.



THE XBRL UK JURISDICTION

XBRL UK is a long-standing jurisdiction of the XBRL International consortium (XII).

Dedicated to advancing the use of XBRL in the United Kingdom, XBRL UK's main activities include:

- Promoting the XBRL standard through marketing and educational information.
- Providing technical and other support to those adopting XBRL.
- Representing UK interests within XBRL International.
- Providing access to European markets and standards-setting working groups through XBRL Europe.

XBRL UK is facilitated by the Institute of Chartered Accountants in England and Wales (ICAEW). Members include a range of public agencies, accountancy and technical specialists, and software suppliers.

The UK jurisdiction has worked closely with HMRC and Companies House to develop their respective XBRL filing projects, providing public and technical feedback and advice at both design and implementation phases.

XBRL UK is most closely identified with the development of the Inline XBRL standard which was developed by jurisdiction members, under the aegis of the XII Rendering Working Group, in order to resolve technical and market-acceptance issues around the HMRC corporation tax programme. The iXBRL standard, which has been the most successful single part of the XBRL standard to date, went on to be adopted by a number of other OECD countries for their own filing programmes.

The UK jurisdiction provides a programme of face-to-face meetings, conferences and roadshows.

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