IFRS Foundation

April 2024
Digital Financial Reporting

Facilitating digital comparability and analysis of financial reports

Introduction

Digital financial reporting allows investors and other users of that information to efficiently search, extract and compare companies' accounting and sustainability-related financial disclosures.

Today, many investors, companies and regulators are already getting the benefits. Over 90% of listed companies (by global market capitalisation) are required to undertake digital financial reporting to some extent.

The IFRS digital taxonomies facilitate the reporting of information prepared in accordance with IFRS Standards in a computer-readable format.

This article provides an introduction to digital financial reporting and the IFRS digital taxonomies.

Further resources relating to digital financial reporting and the IFRS digital taxonomies can be found at https://www.ifrs.org/digital-financial-reporting/.
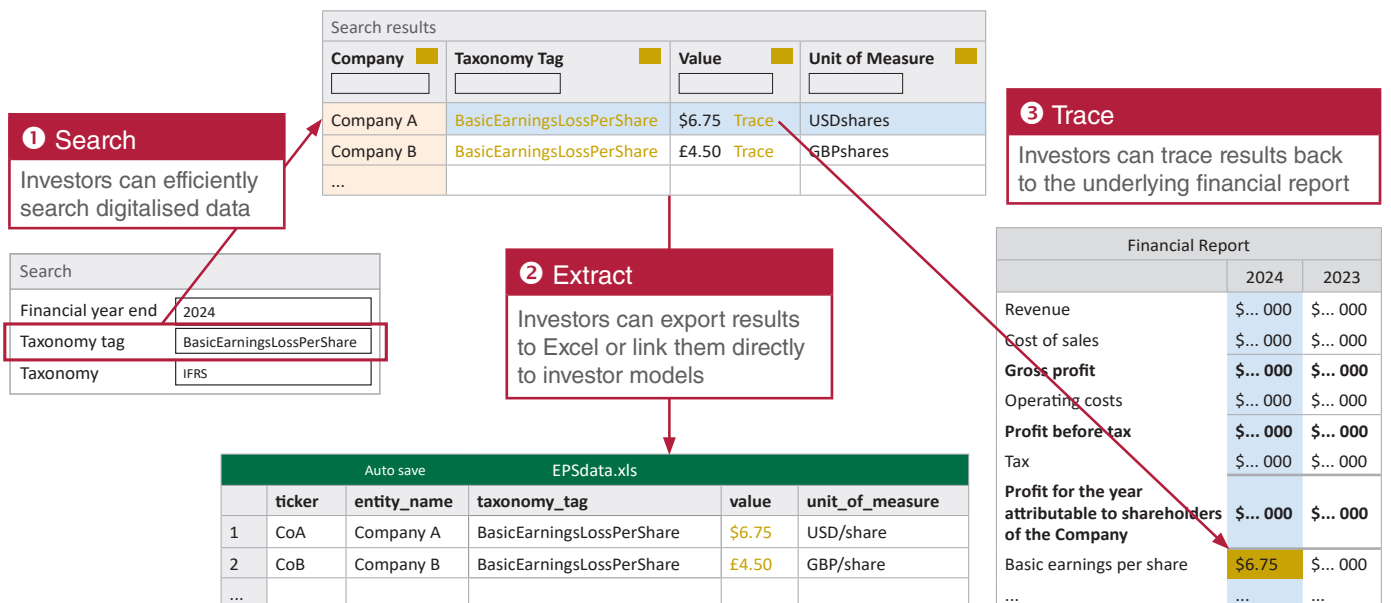
What are digital financial reports?

A digital financial report is a financial report in a computer-readable, structured data format.

Although financial reports in a PDF format are visually and contextually understandable to humans, this format makes it difficult for users of financial reports to efficiently extract, compare and analyse companies' information.

Information in a computer-readable, structured data format allows investors to compare and analyse information efficiently—and on a large scale.

Figure 1 shows a basic illustration of how information from various companies' digital financial reports (for example, basic earnings per share) can easily be searched, extracted and traced back to the underlying digital financial reports.

Figure 1—Search, extract and trace information from digital financial reports


Several digital financial reporting analysis platforms and tools, including Excel Add-ins, are available. Additionally, there are freely accessible Application Programming Interfaces (APIs) available for various digital financial reporting repositories. These APIs can be used to integrate data from those repositories into existing analysis tools and systems.

Ann Tarca, IASB member

Digital financial reporting is now a requirement in most of the major economies around the world. Capital markets without digital financial reporting requirements face the risk of lower foreign investment and a higher cost of capital.

Spotlight on the United States
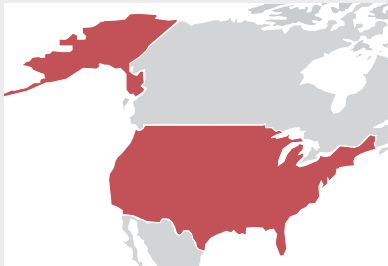
Since 2009, the US Securities and Exchange Commission (SEC) has gradually introduced requirements for listed companies to file their financial statements in eXtensible Business Reporting Language (XBRL), a computer-readable, structured data format. In 2019, the SEC started to introduce requirements for listed companies to file their financial statements in Inline XBRL (iXBRL), a computer- and human-readable format.

Foreign private issuers that report in the United States using IFRS Accounting Standards are required to apply the IFRS Accounting Taxonomy.

Public digital filings with the SEC can be accessed through the Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) at https://www.sec.gov/edgar/search.[1]

The SEC provides an API that gives users quick and easy access to data in EDGAR at https://www.sec.gov/edgar/sec-api-documentation. The API enables investors to integrate and automate real-time company information into their investment research tools and portfolio management systems.

What are the benefits of digital financial reporting?

Digital financial reporting can improve capital market transparency and efficiency. Improved transparency promotes capital formation and allows companies to raise capital at a lower cost. This opens up greater opportunities for investment, which in turn leads to economic growth and development. Research suggests that introducing digital financial reporting requirements has led to economic and other benefits for a multitude of stakeholders.[2]

Investors benefit from	• automated data collection and reduced search costs • more efficient information processing • reduced information asymmetry • expanded population of possible global investment targets
Companies benefit from	• increased analyst coverage and access to capital, including foreign investment, fostering a broad and stable investor base • more efficient and accurate benchmarking and peer analysis • reduced burden of submitting the same information to multiple organisations or government agencies
Regulators benefit from	• increased capital formation • more efficient market oversight and enforcement reviews • automated validation checks and technology-driven monitoring • improved data sharing between regulators and government agencies

---

1 Data sets from financial statements and the notes to the financial statements are also available in TSV format at https://www.sec.gov/about/divisions-offices/division-economic-risk-analysis/data/financial-statement-and-notes-data-set.

2 For a summary of academic research on benefits, see Troshani, I, Rowbottom, N, 'Digital corporate reporting: Research developments and implications', *Australian Accounting Review*, vol 31, no 3, September 2021, pages 213–232.

Bing Leng, ISSB member

In a data-driven world, the IFRS Standards, together with the IFRS digital taxonomies, support decision-useful, high-quality and globally comparable financial reports in a structured, computer-readable format, which is increasingly a valuable format for investors. Better information delivered in a better format fosters better decisions.

What are the IFRS digital taxonomies?

The IFRS digital taxonomies provide a list of defined elements (or tags) which, when assigned to information in financial reports prepared in accordance with IFRS Standards, provide the structure and classification necessary for that information to be computer-readable.

The two IFRS digital taxonomies are the IFRS Accounting Taxonomy and the IFRS Sustainability Disclosure Taxonomy.[3]

The IFRS digital taxonomies:

- are derived from IFRS Standards and reflect the requirements in the Standards and the accompanying materials.
- contain common practice elements that allow companies to tag information commonly provided in financial reports prepared in accordance with IFRS Standards that is not specifically required by IFRS Standards.
- can be used with XBRL, iXBRL and other digital reporting formats.
- are regularly updated to reflect changes in IFRS Standards. Updates are subject to public consultation in accordance with the IFRS Foundation's due process and often involve consultation with the IFRS Taxonomy Consultative Group.[4]
- are unrelated to the 'green' taxonomies used for assessing or categorising the sustainability rating or attributes of a company or product, or the sustainability attributes of economic activities.

The IFRS Foundation also maintains the SASB Standards Taxonomy, which can be used to structure information reported in accordance with the industry-based SASB Standards.

The need for the IFRS digital taxonomies is illustrated in Examples 1 and 2.

Example 1—IFRS Accounting Taxonomy

Companies use various descriptions to refer to 'profit or loss' in their financial statements, which makes it challenging for computers to know whether each company is referring to the same accounting concept.

If each company tags its profit and loss disclosure with the 'ProfitLoss' element from the IFRS Accounting Taxonomy, a computer is able to determine that Company A's 'Profit for the year', Company B's 'Profit after tax' and Company C's 'Net earnings' are comparable profit or loss disclosures despite having different descriptions. Similarly, a computer can identify comparable tagged descriptions provided in various languages.
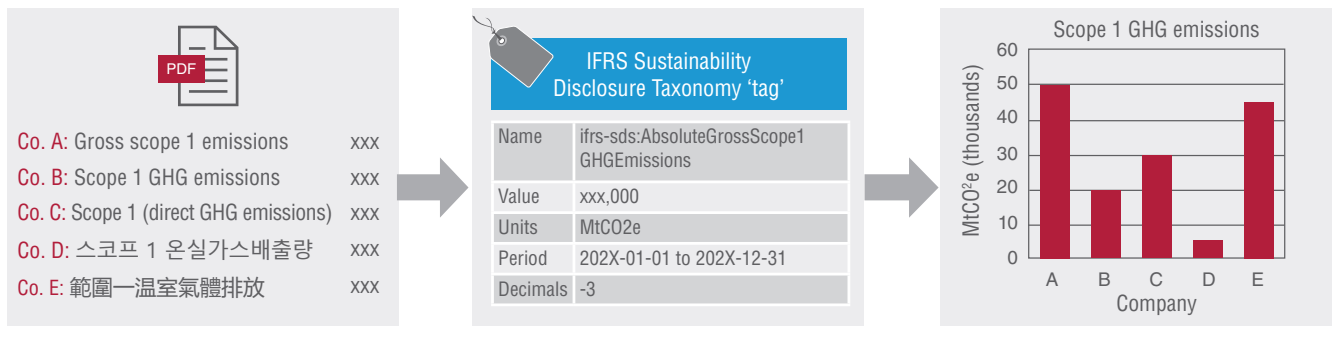

---
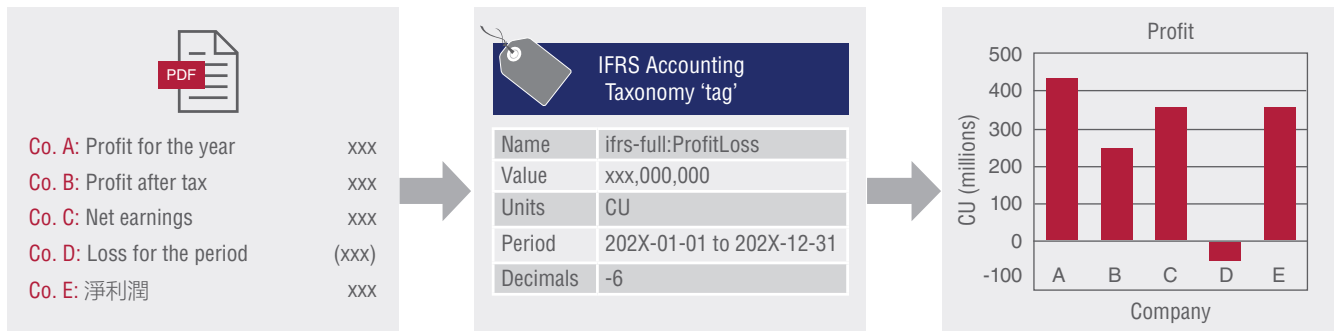
3 The forthcoming IFRS Sustainability Disclosure Taxonomy is expected to be published at the end of April 2024.

4 The IFRS Taxonomy Consultative Group (ITCG) is an expert consultative group that advises the International Accounting Standards Board (IASB) and International Sustainability Standards Board (ISSB) on their respective digital taxonomies and related activities. More information about the ITCG can be found at https://www.ifrs.org/groups/ifrs-taxonomy-consultative-group/.

Companies might use various descriptions when referring to their 'Scope 1 greenhouse gas emissions'. Without further context from each company's financial reports, it is unclear whether each company is referring to the same concept.

If each company tags its disclosure with the 'AbsoluteGrossScope1GHGEmissions' element from the IFRS Sustainability Disclosure Taxonomy, a computer is able to determine that each company is referring to the same concept.

|		IFRS Sustainability Disclosure Taxonomy 'tag'		Scope 1 GHG emissions
PDF				
Co. A: Gross scope 1 emissions xxx		Name	ifrs-sds:AbsoluteGrossScope1GHGEmissions	
Co. B: Scope 1 GHG emissions xxx		Value	xxx,000	
Co. C: Scope 1 (direct GHG emissions) xxx		Units	MtCO2e	
Co. D: 스코프 1 온실가스배출량 xxx		Period	202X-01-01 to 202X-12-31	
Co. E: 範圍一温室氣體排放 xxx		Decimals	-3	

Tags contain information (metadata) necessary to make quantitative and qualitative information computer-readable. For example, tags contain information about the financial period to which reported information relates and, if applicable, the currency or measurement unit along with the level of rounding.

Additionally, tags contain references to the related requirement(s) in IFRS Standards. These references allow investors and other users to:

- identify the specific requirements to which information relates; and
- search digital financial reports for information that relates to a specific requirement.

Spotlight on the European Union
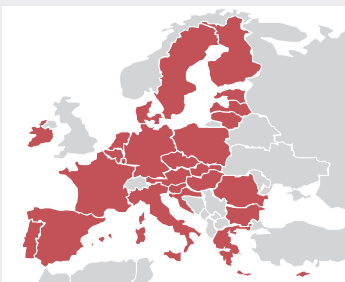
Since 2020, European Union (EU) law has required most companies listed on EU regulated markets to prepare their annual financial reports in the European Single Electronic Format (ESEF), to facilitate accessibility, analysis and comparability of annual financial reports.[5]

The ESEF Regulatory Technical Standard (RTS) developed by the European Securities and Markets Authority specifies that companies prepare their IFRS consolidated financial statements in iXBRL—tagged with elements contained in the ESEF Taxonomy (which contains the IFRS Accounting Taxonomy).

Initially, companies were only required to tag their primary financial statements in detail—tagging of the notes was voluntary. From 2022, it became mandatory for companies to block tag[6] the notes to their IFRS consolidated financial statements.

In most EU Member States, the statutory auditor provides an opinion on whether the company's financial statements included in the annual financial report comply with the relevant statutory ESEF requirements.

Public ESEF filings can be accessed through an Officially Appointed Mechanism (OAM). An OAM is a national database, specific to each EU Member State, to store and provide access to regulated financial information.

The EU is developing the European Single Access Point (ESAP), which will provide a centralised access point for ESEF filings. ESAP is expected to go live by mid-2027.

XBRL International aims to make all publicly accessible ESEF filings centrally accessible at https://filings.xbrl.org, along with filings under the United Kingdom Single Electronic Format (UKSEF) and the Ukraine Financial Reporting System. The filings database is also available via an API at https://filings.xbrl.org/docs/about.

---

5 EU legislation requires annual financial reports for listed companies with fiscal years beginning on or after 1 January 2020 be prepared in ESEF. In practice, the compliance with ESEF requirements in all Member States took place for financial years beginning on or after 1 January 2021, because an amendment to the Transparency Directive allowed issuers in most Member States to delay application of ESEF by one year.

6 Block tagging refers to the use of a single taxonomy element to tag a group of disclosures, for example the entire note relating to business combinations.

How are digital financial reports created?

Digital financial reports are typically created through a process known as *tagging*. Tagging involves using specialised software to assign elements (or tags) from a digital taxonomy to information in a company's financial report. This process produces a digital financial report in a structured data format (such as XBRL).

Several tagging software solutions are available. The costs associated with preparing digital financial reports vary depending on factors such as the complexity of the company's reports and its approach to tagging. The costs can be relatively modest and typically reduce significantly after the first year.

Companies typically use one of two approaches to tagging their financial reports:

* an integrated approach—tagging is built into a company's financial reporting management system and report design tools; and

* a content-first approach—the tagging process starts after a company has prepared its financial report in a PDF format. Under this approach, the tagging process is commonly outsourced to a third-party tagging agent.

Each company is ultimately responsible for the quality of its digital financial report. Therefore, even when the tagging process is outsourced, a company's digital financial report should be subject to review by management.

Some jurisdictions use a template-based approach, whereby companies populate a standardised template with their financial information. These templates, often in Excel, are used to produce XBRL reports.

Although template-based approaches are often seen as cost-effective, they have several limitations compared to more flexible tagging approaches. For example, the predefined structure of a template might not adequately capture all disclosure variations and detailed note disclosures, especially for complex or multi-industry companies.

XBRL is the most commonly used computer-readable, structured data format for financial information.

XBRL is an open international standard, which is maintained by XBRL International, a non-profit consortium of approximately 600 member organisations, companies and government agencies around the world. It is available free of licence fees and is used in more than 70 countries.

In many jurisdictions, Inline XBRL (iXBRL) is the preferred technology for creating digital financial reports. iXBRL embeds computer-readable XBRL tags within a human-readable xHTML document that can be opened with a standard web browser or XBRL viewer. The result is a document that both humans and computers can read.

iXBRL is used for digital financial reporting by listed companies in the US, Europe, Japan and other major economies.

More information about XBRL, including a directory listing jurisdictions with XBRL implementations can be found at https://www.xbrl.org.

Spotlight on the Republic of Korea
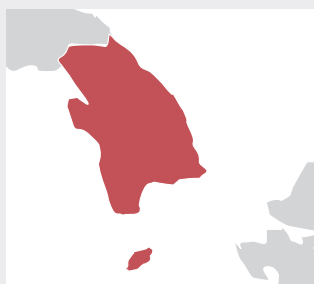
Since 2011, the Korean financial regulator, the Financial Supervisory Service (FSS), has required listed companies to submit their primary financial statements in XBRL using the K-IFRS Taxonomy (based on the IFRS Accounting Taxonomy).

In 2023, the FSS announced that it is expanding the scope of its requirements to include tagging notes to the financial statements. This expansion is part of a set of reforms intended to enhance the visibility of Korea's public markets to international investors.

Additionally, the FSS requires major private Korean companies to submit their primary financial statements in XBRL.

One expected benefit of the expanded requirements is that the multilingual labels[7] will reduce the information asymmetry between domestic and foreign investors, thus helping to tackle the 'Korea discount'—a term used to describe the lower valuations experienced by Korean firms compared to their global peers.
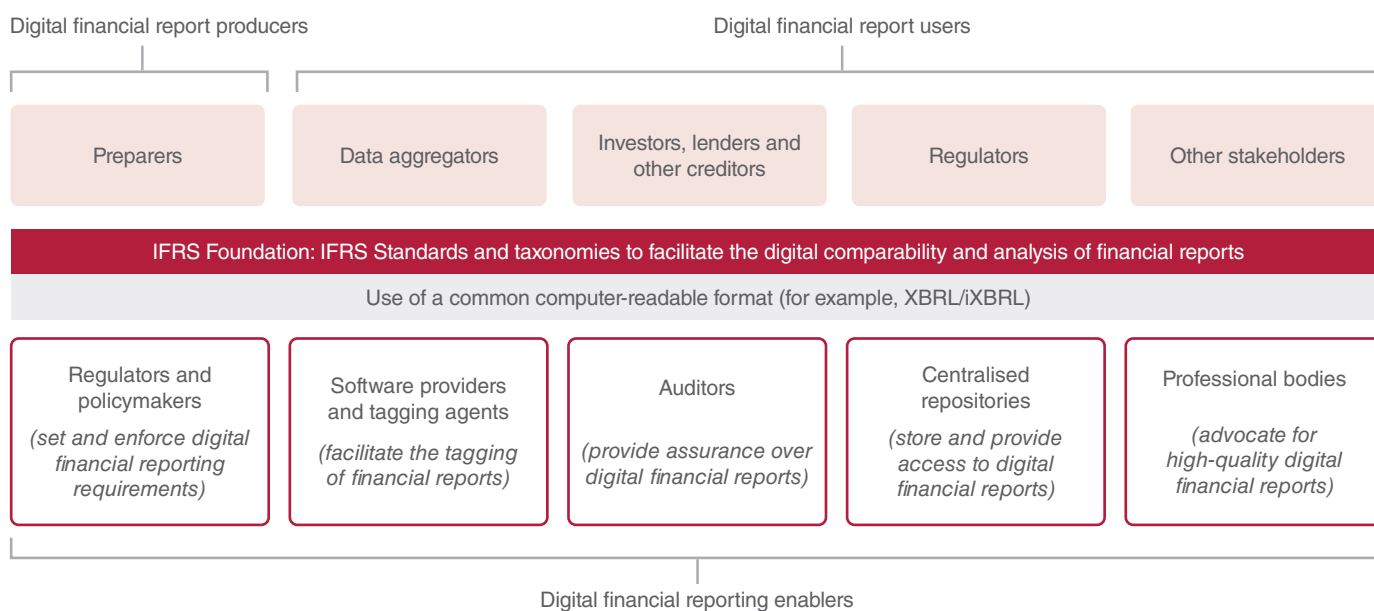
Korean XBRL filings can be accessed through the Data Analysis, Retrieval and Transfer System (DART) https://englishdart.fss.or.kr. The FSS also provides an open API to access data in DART https://opendart.fss.or.kr.

---

7   XBRL allows labels (human-readable descriptions of a taxonomy element) to be defined in multiple languages. When labels in multiple languages are defined, the software used to display an XBRL report can allow the reader to select the language that they want to view the labels in.

Who are the stakeholders in the digital financial reporting ecosystem?

Stakeholders in the digital financial reporting ecosystem and their roles are outlined in Figure 2.

Figure 2—Digital financial reporting ecosystem

Digital financial report producers

Digital financial report users

Preparers	Data aggregators	Investors, lenders and other creditors	Regulators	Other stakeholders

IFRS Foundation: IFRS Standards and taxonomies to facilitate the digital comparability and analysis of financial reports

Use of a common computer-readable format (for example, XBRL/iXBRL)

Regulators and policymakers *(set and enforce digital financial reporting requirements)*	Software providers and tagging agents *(facilitate the tagging of financial reports)*	Auditors *(provide assurance over digital financial reports)*	Centralised repositories *(store and provide access to digital financial reports)*	Professional bodies *(advocate for high-quality digital financial reports)*

Digital financial reporting enablers

Spotlight on South Africa

Since 2018, the Companies and Intellectual Property Commission (CIPC) has mandated that listed companies and other qualifying entities report their financial statements prepared in accordance with IFRS Accounting Standards in iXBRL using tags from the IFRS Accounting Taxonomy.

CIPC's main objectives in introducing digital financial reporting were:

- to reduce the administrative burden on companies when they report financial information to the government for regulatory compliance—including reducing the amount of duplicated and inconsistent information reported to various government agencies; and
- to provide companies and investors with financial information for better transparency.

With over five years' worth of digital filings, reported in accordance with full IFRS Accounting Standards and IFRS for SMEs, CIPC is now looking at accelerating its data-sharing capabilities to optimise the value of the available data.

Annual financial statements filed using iXBRL can be accessed by registered users through the CIPC Online Query Management portal at https://enquiries.cipc.co.za. Direct enquiries about various XBRL data sets should be directed to xbrl@cipc.co.za.

What role does artificial intelligence play in digital financial reporting?

Companies are already benefiting from using artificial intelligence (AI) to assist with tagging their financial reports. Human involvement and oversight, however, continues to be necessary, especially when tagging decisions require greater levels of judgement.

Investors and other users of financial reports are also benefiting from AI-assisted tools to collect and structure data, generate insights and enhance the overall efficiency of users' analysis.

The quality of AI-generated output is dependent on the quality and structure of the underlying data. In the absence of structured data provided by digital financial reports, AI has to structure information in financial reports by, in effect, making educated guesses, which becomes more problematic if:

- no history of structured data is available for AI models to learn from—for example, when standards are amended or companies provide new information; and
- custom AI models are being trained in isolation, producing varied outputs.

The risk of AI incorrectly structuring and identifying information prepared in accordance with IFRS Standards is mitigated by:

- the structure provided by the IFRS digital taxonomies, which are readily available and regularly updated to reflect changes in IFRS Standards; and

- companies retaining control over their tagging decisions, rather than AI making educated guesses.

Digital financial reports provide a solid foundation for investors and other users of financial reports to focus on building AI models that generate high-quality output. Without that foundation, the costs of building AI models to gather and structure data can be high, and the accuracy of such models can vary.

What is needed to realise the benefits of digital financial reporting?

Currently, significant diversity exists in whether and how financial reports become computer-readable, the quality of digital data available and the accessibility of digital financial reports. Consequently, investors often cannot digitally extract and compare financial report data from various jurisdictions—and often within the same jurisdiction.

For users of financial reports to realise the full benefits, digital financial reports should:

- be a complete and accurate representation of reported information;

- be structured in a digitally comparable format;

- be publicly available at the same time as reported information; and

- be centrally accessible in an easy-to-use format.

Call to action

The IFRS Foundation plays an important role in the development of IFRS Standards and IFRS digital taxonomies to help users digitally consume information in financial reports prepared in accordance with IFRS Standards.

Overcoming the current challenges associated with digital financial reporting will require effort from regulators and other stakeholders in the digital financial reporting ecosystem to ensure:

(a) digital financial reports are prepared using the IFRS digital taxonomies alongside IFRS Accounting Standards and IFRS Sustainability Disclosure Standards;

(b) digital financial reports are assured by auditors and reviewed by regulators (including validation checks) to give investors confidence in the quality of digital financial reports;

(c) digital financial reporting mandates require all information in financial reports to be publicly and centrally accessible in a computer-readable, structured data format at the same time reported information is available in any other format; and

(d) materials are made available to explain how data from digital financial reporting repositories can be accessed, searched and extracted.

Get in touch

If you would like to discuss this topic, please contact Ann Tarca at atarca@ifrs.org,
Bing Leng at bing.leng@ifrs.org or David Bassett from the Digital Financial Reporting team at dbassett@ifrs.org.

Follow @IFRSFoundation on X, formerly Twitter, to keep up with changes in the world of IFRS Standards.