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The evolution of electronic filing process at

of XBRL adoption

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Abstract

Electronic filing was introduced to HM Revenue and Customs (HMRC) in the United Kingdom (UK) over fifty years ago. The filing process at HMRC evolved from relying on a simple batch system in the 1960s for performing simple data-processing tasks to adopting an open-source reporting technology, Extensible Business Reporting Language (XBRL), in 2010. HMRC championed the use of XBRL to standardis
supporting documents (accounts and computations). XBRL aims to improve the efficiency of case management, enhance the data quality, and add value to the evidence-based decision-making at HMRC. This research chronicles the evolution of

version of XBRL). The UK government required all private, limited, not-for-profit and charity organisations to file their tax returns using Inline XBRL from April 2011. This case study captures and analyse
and strategies towards using reporting technologies in processing information in tax filings. In addition, it contributes to the
The
findings showcase the essence of championing reporting technologies, continuously committing to develop them, and strategically engaging with multiple stakeholders (top government, software industry and professional accounting

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Commissioner of Taxation (2014 2015), the ATO estimates that the cost savings of using Inline-XBRL-based SBR amounted to AUD400 million due to the remarkable number of processed SBR transactions, which exceeded 15 million in 2015.[ii] Other international tax authorities have opted for wait-and-see strategy, mainly observing

For example, regulatory authorities in Denmark, Germany, Ireland, Japan and the Netherlands are still investigating the capabilities and functionalities of XBRL to support the tax filing process by private and public companies.[iii] They are also actively working on developing XBRL taxonomies that will incorporate the variations of GAAP and IFRS. The inclination of tax authorities to leverage the power of XBRL is deeply rooted in those authorities, such as in the Netherlands, which strive to minimise the compliance burden of providing financial and business information reports by filing companies to the governments (Monterio, 2011a). This also works in for streamlining and processing business and financial data filed by millions of companies.

In the United States (US), the Internal Revenue Service (IRS) is still investigating X

Computer Sciences and Pactel, were signed at the beginning of 1981 to review the implementation of the COP Project (NAO, 1987, 15).

The COP P
procurement policy favoring British IT service suppliers.g (en-US)>BDC BT1 0 ementcyenentar 3

data in the attachment. The IR normally conducts two types of tax enquiries in such cases (HoC, 2005). *Full Enquiries* focus on the disclosure of accounting for the entire income and assets of a business, and this is typically associated with small companies. *Aspect Enquiries* examine the accuracy and tax treatment of one or more particular features of complex CT600 tax returns, which is associated with larger companies. However, *Aspect Enquiries* could be also applied to smaller companies if only limited aspects of the tax returns are considered necessary to examine. Enquiries may result in securing additional Corporation Tax or profit adjustment for IR.

The IR found that even though *Aspect Enquiries* generated lower yield than *Full Enquiries*; they produced a higher payback rate because they are much less costly than *Full Enquiries*. Table 1 presents a comparison between the *Full* and *Aspect Enquiries*.[xxiii]

Table 1: Cost/Yield Analysis of Full and Aspect Corporation Tax Enquiries

	Full Enquiries	***Aspect Enquiries***
Number completed	4500	39 200
Average Yield	GBP 26 700	GBP 12 300
Average Staff Cost	GBP 5600	GBP 500
Average Yield/Cost Ratio	4.8:1	22.6:1
Proportion of enquiries resulting in a tax or profit adjustment	81%	58%

This variation in yield and cost of case enquiries prompted the agency to deploy additional resources into the processing of *Aspect Enquiries* which deal with Corporation Tax for the large companies (HoC, 2005). It explored different options to improve the risk assessment techniques to expedite the processing of the case enquiries. One such way would to allow companies to submit their accounts and computations in a structured format that could facilitate risk assessment process. The worked on identifying a functional reporting medium, which would accommodate processing the non-structured complex data structure of the The agency developed its Corporation Tax portal and started the adoption of an XML-based reporting technology, the XBRL. During the decision-making process, the then-Chancellor of the Exchequer, Gordon

HM Customs and Excise into a single entity, HMRC. The HMRC was established in 2005 as the UK government agency responsible for the administration of income tax, corporation tax, capital tax gains as well as custom duties and a number of other types of taxes.[xxiv]

XBRL is an extension of XML, which was initially mandated by the UK government to be used for delivering all government online services (Cabinet Office, 2000]). XBRL was technically developed to possess the same tagging feature of XML by using XML schema to describe the structure of business and financial reports. This

tag data in business and financial reports to describe their use and their relationships with other data in the report. This would provide better data integration and easier access to information (Cabinet Office, 2001). XBRL also introduces additional business semantics or meanings, which were not provided by XML alone (Hoffman and Strand, 2001). These semantics can link each data element with multiple resources (such as definitions and calculations) and can be communicated to, and used

10. XBRL TESTING: MID 2006

During an XBRL UK conference in 2006, a live demonstration of XBRL filing was

business partners in XBRL adoption process.[xxxi] CoreFiling played an important role in assisting HMRC by introducing its True North validation and processing engine. This tool was necessary in validating and processing XBRL content. CoreFiling also provided specialised support in
preliminary taxonomies prepared in Microsoft Excel, into a fully compliant XBRL taxonomy. [xxxii]

-based
accounts and computations. HMRC conducted several live XBRL demonstrations with tax software vendors, after which, it was determined that tax inspectors would face some difficulties in viewing the submitted data in a human-readable form. In March 2006, HMRC provided a viewer of the XBRL tax computation, which would be used by potential corporate users. However, the process of generating XBRL style sheets was very slow and computations were not easily understood due to the poor
In addition, many data elements were omitted from the computation style sheets.[xxxiii]

se it for risk assessment purposes. He indicated that the human element is essential to the risk assessment process along with the assistance of technology to run assessment checks on certain companies. He also pointed out that in some cases, risk assessment services do not work according to risk rules, which require human intervention to solve such a problem. Another difficulty was faced because the information reported in the accounts and

systems. This necessitated the need to render XBRL data in a way that it can be

in Inline XBRL format. In December 2009, the approval was granted and was included in the amendments of the law governing electronic communication and data handling techniques employed by HMRC. [xxxix]

previously limited internal access and ability to use CT600 filings to facilitate the risk assessment process. *always* been L as a potential filing solution for CT600 accounts and computations.

-Revenue project initiated in 1999 (NAO, 2002).
team members were diligent to promote XBRL potential as not just a government-mandated electronic filing medium, but also an e-filing solution that would facilitate The use of technology in tax reporting contributes to reducing tax preparation time (Hampton, 2005).
the agency prioritised the need for achieving efficiencies through the development of ELS and FBI to provide additional processing power and reduce the compliance burden on taxpayers.

As government agencies are often faced with limited financial resources, especially during tough economic conditions, careful spending cuts have to be undertaken to alleviate the financial burden. In that regard, HMRC was not any different from financially-strained tax regulators. HMRC perceived the adoption and mandating of XBRL technology as an innovative response to manage its administrative costs. The agency made a strategic decision to use XBRL after it identified the variation in yield and cost of case enquiries, which motivated the agency to deploy additional resources into the processing of *Aspect Enquiries* of the Corporation Tax. This strategy ile maintaining lower operating staff costs.

HMRC was also essentially driven by the need to receive and process CT600 accounts and computations in standardised form. HMRC realised accommodate the complexity of the rich data structure of CT600 accounts and computations, which were traditionally filed in non-standardised formats by tax agents and companies. XML (a form-based reporting language) has been used effectively for filing CT600 tax returns. However, the non-standardisation of the accounts and computations did not work efficiently with XML. HMRC believed that XBRL would have an advantage over XML because XBRL would allow tax inspectors to have electronically tagged data in the computations, which can be easily linked to the main tax returns. XBRL has been perceived to enhance the readability and processing of business and financial data by tax inspectors and companies and support the risk assessment process. Peter Calvert of XBRL UK pointed out that regulators receiving XBRL information will be able to automate and introduce far more wide-ranging and effective analysis than they can achieve now (Tilbury, 2009, 2). As Wilson and Sangster (1992) indicate, the availability of micro-computers has introduced a paradigm shift in increasing the use of modeling and decision support techniques. XBRL has also introduced a comparable shift in enhancing the human and machine readability of XML-based financial data. This has contributed to the enhancement of quality data, which would greatly support the risk assessment process. Effective risk assessment adds value to the evidence-based decision-making process that could determine whether a company has to be audited.

by the software industry.
IT consulting firms to develop the COP Project. The collaboration was also central to the implementation of the self-assessment system when HMRC selected EDS as the

sole information technology provider for the self-assessment system at the time. During the adoption of XBRL, HMRC ensured that all XBRL-enabled software packages are vetted before offering them to the general public. It worked extensively with Adobe Systems and CoreFiling to develop the technical infrastructure of XBRL taxonomy, which is the most difficult task in XBRL adoption process due to the complexity of the data in accounts and computations filings.

HMRC has also strengthened its ties with government bodies, XBRL UK, accounting firms and professional entities. Stakeholder participation is regarded as one of the success factors in the adoption of any electronic government initiative. For example, Hirschheim, Klein and Lyytinen (1995) argue that the adoption of new technologies by government agencies is contingent on the ability of government agencies to collaborate and meet the needs and expectations of stakeholders. In particular, stakeholder engagement in the XBRL adoption process has been depicted in XBRL literature (Doolin and Troshani, 2007; Troshani and Rao, 2007; Mousa and Chen, 2012). HMRC was initially aware of the potential of XBRL through their meetings with representatives of ICAEW during the first global meeting of XBRL International organisation in February 2001. The ICAEW played a major role in forming a broad-based steering group in London to develop, in cooperation with the software industry, the UK XBRL taxonomy for financial reports.
evident when it discussed the practical applications of XBRL for HMRC. In addition and i

traditional XML-based filing facility. The key difference between XBRL and any another electronic reporting technology is that XBRL is widely agreed upon by accountants (Hamscher, 2002). In addition, as the case with any technology adoption, there is always a potential resistance to change, which could be lessened by realised benefits.

The case study shows that most important obstacle faced during XBRL adoption was The sheer number of financial data elements that have to be tagged in XBRL, and the possibility of extending the taxonomy to incorporate company-specific tagging added an additional challenge. The tagging process is tedious, as it requires great investment in technical resources and expertise. A UK-based research conducted by Dunne et al. (2009) indicates that many potential corporate users are deterred by the proliferation of XBRL taxonomy. This was also supported by findings of Cordery, Fowler and Mustafa (2011), who sations.

In the Australian context, large business organisations pointed out the significance of mobilising technical and financial resources to build XBRL taxonomy infrastructure. They were concerned about the sophistication of XBRL as a technology and whether they have the technical expertise to build a taxonomy structure that would accommodate the tagging of hundreds of financial elements in financial reports using XBRL (Doolin and Troshani, 2007). The challenge is amplified as companies would be required to extend certain financial data elements based on their needs to disclose corporate information.

Finally, the case study fosters the importance of project champions in implementing technological innovations in regulatory authorities. The key role of project champions has been acknowledged by prior literature. Turner and Apelt (2004), who have examined the adoption of an electronic filing initiative in Australia, supported the importance of cultivating project championship culture in tax authorities. The existence of XBRL project champions manager of online services and technical architect, has provided a great example of resourceful leadership and technical excellence. Their rich experience (amounting to a combined 60 years) was one of the most success factors that supported the process of building XBRL taxonomy structure. They worked with their IT partners to build, tag and define 12°000 data elements in the accounts and computations documents. Championing the technology and possessing the right IT skill-set for XBRL set the tone of XBRL adoption process. It also steered the process of XBRL development into the right direction when HMRC faced rendering issues with the older version of XBRL, which affected the data presentation of the XBRL-based accounts and computation.

CONCLUSIONS

computations). In addition, the agency embraced the technology to standardise the presentation and processing of tax data, add value to the risk assessment process and accelerate the corporate tax revenue collection. Furthermore, the case study reveals the pivotal roles of the stakeholders (top government bodies, software development partners, XBRL UK organisation and UK accounting professional organisations) in the adoption process.

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17. END NOTES

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