INTENTION TO ADOPT XBRL-BASED DIGITAL REPORTING IN MALAYSIA

BY

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ABSTRACT

Standards for electronic recording, processing and dissemination of financial and other corporate reports (digital reporting) can provide benefits both for external regulation and investor relations and for internal financial management and decision-making. As far as available technologies for such purposes are concerned, XBRL is recognized as one of the best currently available today. Although this technology, which in itself is an innovation in the way financial information is stored and distributed, is actively being discussed and implemented at an international level, little effort is made towards its implementation in Malaysia. In light of this, one of the main objectives of this study is to examine a selected group of Malaysian listed companies' intention to adopt XBRL-based Digital Reporting (DR) systems. In addition, this study sets out to assess the capacity of the DoI theory's innovation attributes in measuring the Intention to Adopt in the context of a new innovation, which is XBRL in this case. Therefore, this study endeavors to evaluate which of the postulated innovation attributes are significantly influential in deciding the respondents' intention to adopt (or reject) the XBRL-based DR models proposed to them. This study uses the Three Levels of Digital Reporting Progress framework and the Diffusion of Innovation theory as the backbone mechanisms to find the solution for the research issues. Data were gathered by sending out questionnaires to selected companies listed on the main-board of Bursa Malaysia. The findings reveal that majority of the sample companies were still undecided over the plan of adopting XBRL-based DR systems. Moreover, there were more respondents who were skeptical about adopting the systems than those who felt positive about adopting them. The findings also reflect that the companies have already grasped the perceived effectiveness of the XBRL-based systems. However, they also made it clear that they were perturbed about the potential costs to be borne out of the systems' implementation. Furthermore, the findings from the correlation analyses confirmed the hypothesized positive relationships between a trio of Effectiveness, Compatibility and Trialability, and the intention to adopt. Meanwhile, despite being not significant, the assumed negative correlation was confirmed between the costs and the intention to adopt. Moreover, the results of linear regression analyses showed that trialability, compatibility and effectiveness of the models were significant, at various levels, in explaining the intention to adopt the innovations proposed.

ملخص البحث

إن المعايير الخاصة بالتسجيل الإكتروني ومعالجة ونشر التقارير المالية الخاصة بالشركات وغيرها (التقارير الرقمية) يمكن أن تفيد في العلاقات بين القوانيين الخارجية و المستثمر و كذلك تفيد الإدارة المالية الداخلية و عملية أتخاذ القرار. وبقدر ما تكون وسائل التكنولوجيا المعنية متاحة لهذه الأغراض ، ومن المسلم به أن (XBRL) يعتبر من أفضل ماهو متاح حالياً. وعلى الرغم من قدم هذه التكنولوجيا ،التى فى حد ذاتها تعد ابتكارا فيما يتعلق بالمعلومات المالية وتخزينها وتوزيعها ، فإنه قد تم مناقشتها وتنفيذها بشكل واسع على المستوى الدولى، وبالنسبة لماليزيا حتى الان فقط القليل من الجهد تم بذله من أجل تنفيذ ذلك النشاط. في ضوء هذا فإن أحد الأهداف الرئيسية لهذه الدراسة هو دراسة مجموعة مختارة من الشركات المدرجة فى البورصة الماليزية من حيث تطبيقها لنظام (XBRL) . وبالإضافة إلى ذلك ، فإن هذه الدراسة توضح القدرة على تقييم قدرة الابتكار الجديد. ولذلك ، تسعى هذه الدراسة لتقييم أي من سمات الابتكار المفترضة التى تؤثر بشكل كبير فى تحديد نية المشاركين فى قبول أو رفض (XBRL). وهذه الدراسة تستخدم المستويات الثلاثة الإطار الرقمى للتقارير المرحلية، ونظرية نشر الابتكار واللاتى بدورهما تعتبر من الآليات الاساسية لحل للقضايا فى البحث . وقد تم جمع البيانات عن طريق إرسال استبيانات لشركات مختارة مدرجة ضمن القائمة الرئيسية للبورصة فى ماليزيا. وتكشف هذه النتائج أن معظم الشركات المشاركة في الدراسة لم تحسم رأيها بعد فيما يتعلق بخطة اعتماد النظم (XBRL). وعلاوة على ذلك، كان المشاركون الذين كانوا يشككون فى اعتماد النظم أكثر من أولئك الذين أظهروا إيجابية نتيجة اعتمادها. وتعكس هذه النتائج أيضا مدى أستيعاب الشركات لجدوى تطبيق نظام (XBRL) ومع ذلك ، الشركات أواضحت أيضا مدى قلقها إزاء التكاليف الكبيرة المحتملة التى يجب ألا تغيب عن بال منفذي الأنظمة. وعلاوة على ذلك ، أكدت النتائج المستخلصة من تحليل العلاقات وجود علاقة أيجابية بين الفاعلية الثلاثية والتوافق والقدرة على المحاولة من جانب و من جانب أخر عزم الشركات فى تطبيق هذه النظم. و برغم من أن النتائج لم تكن ذو أهمية كبيرة إلا أنها أشارات إلى وجود علاقة سلبية بين عزم الشركات فى تطبيق النظام و التكاليف. وعلاوة على ذلك ، أظهرت نتائج التحليل العلاقات السببية، أن الفاعلية الثلاثية والتوافق والقدرة على المحاولة يؤثر بشكل كبير على مختلف المستويات في تفسير عزم الشركات في تطبيق النظم المقترحة.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Sciences (Accounting).

………………………………………….
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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Norazmi Ashari

Signature ……………………………… Date ………………………....

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

DECLARATION OF COPYRIGHT AND AFFIRMATION OF FAIR USE OF UNPUBLISHED RESEARCH

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LIST OF ABBREVIATIONS

AAA	American Accounting Association
AICPA	American Institute of Certified Public Accountants
AIS	Accounting Information System
ANOVA	Analysis of variance
APRA	Australian Prudential Regulation Authority
BRRP	Business Reporting Research Project
CA	Continuous Auditing
CFO	Chief Financial Officer
CICA	Canadian Institute of Chartered Accountants
DCFR	Digital Corporate Financial Reporting
DoI	Diffusion of Innovation theory
DR	Digital Reporting
EPS	Earnings per Share
ERP	Enterprise Resource Planning
FASB	U.S. Financial Accounting Standards Board
FR	Financial Reporting
GAAP	Generally Accepted Accounting Principles
GUI	Graphic User Interface
HTML	Hypertext Markup Language
ICAEW	Institute of Chartered Accountants in England and Wales
ICR	Internet Corporate Reporting
IFAC	International Federation of Accountants
IFR	Internet Financial Reporting
IRB	Malaysian Inland Revenue Board
IT	Information Technology
KLSE	Kuala Lumpur Stock Exchange
MASB	Malaysian Accounting Standards Board
MIA	Malaysian Institute of Accountants
RTR	Real-Time Reporting
SC	Securities Commission
SCARF	Systems Control and Audit Review Facility
SEC	U.S. Securities and Exchange Commission
SEM	Structural Equation Modeling
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
U.K	United Kingdom
U.S	United States
WSSA	Web Service Security Architecture
XARL	Extensible Assurance Reporting Language
XBRL	eXtensible Business Reporting Language
XBRL GL	XBRL Global Ledger
XML	Extensible Markup Language
XSLT	Extensible Stylesheet Language

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Growth of the internet network during the 1990s has opened a new realm for communication, marketing and information dissemination. Since then, the internet has expanded into various areas such as an entertainment hub, a marketplace for e-commerce and a channel for accessing database of an organization (Debreceny and Gray, 1999). People can access the internet anywhere as long as there are internet connections and www-enabled devices, such as computers, PDAs, and hand phones. This feature is probably the most attractive feature of the internet that tempts the corporate reporting authority in promoting the internet as the channel for communicating a better level of reporting, quantitatively and qualitatively.

This practice of disseminating corporate financial information through the internet is variably termed as Internet Reporting (IR), Internet Corporate Reporting (ICR), Internet Corporate Financial Reporting (ICFR), Internet Financial Reporting (IFR) or Digital Reporting (DR), depending on the context or scope involved. However, considering the scope of this thesis, the term "Digital Corporate Financial Reporting" (DCFR) is used to refer to this practice throughout this thesis. This is because this thesis focuses on the corporate financial reporting (CFR) by Malaysian Listed Companies in digital mode.

Nowadays, there is an increasing trend among corporate organizations to use the internet as a medium for discharging moral and legal accountability to their stakeholders; thus, increasing the amount of corporate financial information available

to non-specialist investors at a wider scope and lower cost (FASB, 2000 and Amernic, 1998). Accompanied by the advancement of other information technologies such as the enterprise resource planning (ERP) system, the web security and assurance techniques, and the Extensible Business Reporting Language (XBRL) especially, it is not impossible that the real-time electronic corporate financial information could eventually be supplied to the users of the internet in the near future (Rezaee and Reinstein 1998; FASB, 2000 and Boritz & No, 2005).

The users of the financial information need the latest information that is timely and reliable. The concern is that the information may no longer be useful if it takes some time to arrive at the users. As criticized by Baker and Wallage (2000), the current actual financial reporting model, which takes at least a few weeks and even up to 9 months to reach the targeted audience, is deemed inefficient in serving the needs of the main users of the financial statements i.e. global capital markets community who require almost instant information. As Williams (1996) argued, the belief is that current investment decisions are made based on the financial analysts' forecast, unaudited interim earnings announcement and privately obtained information, thus implying no value is placed on audited annual reports published by the companies (Baker and Wallage, 2000). This situation, on the other hand, has vindicated the need for the Real-Time Reporting (RTR) to supply financial information on a real-time basis. As argued by its supporters, the Digital Corporate Financial Reporting (DCFR) can help materialize RTR using such technologies as the internet, the XBRL, the Web Service Security Architecture (WSSA) (Rezaee et. al., 2001; FASB, 2000 and Boritz & No, 2004).

However, due to limited resources and time, the scope of this study will only focus on the subject of XBRL. The XBRL is a powerful version of the Extensible

Markup Language (XML) which is used mainly to exchange the digital financial and business information electronically. Nicknamed as "interactive data", annual reports filed this way can be read by computers effortlessly, allowing investors to pull revenue, net income or any other item on the financial reports into a spreadsheet automatically without having to grind through pages and pages of dry text and numbers. The XBRL is defined specifically to meet the requirements of the business and financial reporting authority for financial and business reporting. It is also one of the main enabling factors in DCFR that can help materialize RTR (Rezaee et. al., pp.150, 2001; Institute of Chartered Accountants in England and Wales [ICAEW], 2004 and Garthwaite, n.d.). The reason the XBRL is chosen as the research topic is not only because it is a new topic in Malaysian accounting research environment, but also I felt compelled, as an academic student, to assess the possibility of its acceptance here in Malaysia after seeing its practicality which is already on show among the public corporations in the US capital market and Australia (SEC website, 2007 and Williams et al, 2006).

The Business Reporting Research Project (BRRP) has listed a few benefits for companies in disclosing digital financial information on the Internet (FASB, 2000):

- Supplementing traditional disclosure practices

- Increasing the amount and type of data disclosed

- Improving access to potential investors for small companies

- Communicating with previously unidentified consumers of information.

However, in a wider perspective, despite all the good reasons of having the internet and the XBRL for the financial reporting, there are certainly counterarguments against it. Before financial information can be disclosed to the public through annual reports, it must firstly be verified by a third party e.g. the

auditors. In addition, for its novelty, there is still lack of regulation and guidelines for both auditors and companies with respect to publishing accounts and reports through the internet (Hussey, 2000 and Wagenhofer, 2003). Moreover, it should be noted that the issue of security in DCFR is also another issue that needs to be addressed seeing that many problems relating to security of the website such as hacking, intrusion, and website cloning remained unresolved (McHugh, 2001). All these will become an issue in the internet reporting era as a result of the different medium, environment and regulation involved which will be discussed later on.

Before going further into discussing the issues relating to the practice of the XBRL-based DCFR, let's first try to get a refined idea on the problem that this study tries to resolve and its scope, what is the motivation behind resolving the problem and the potential significance of this study based on its findings. The following subsections will discuss these matters.

1.1   RESEARCH PROBLEM

The DCFR is quite a novel application for FR[1], even though its application has already been going on for some time. On the other hand, the XBRL is a newly emerging technology[2] that can be applied to complement the DCFR for a new mode of FR model. Hence, both are innovations in the way the constituents of the accounting profession disseminate financial information to their stakeholders. Evidence of voluntary application of these innovations can now be seen, especially in the developed western countries' capital markets and certain other parts of the world like

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[1] Its application in the contemporary internet-based FR framework is not even fully covered by the current FR regulatory framework, yet its application is growing rapidly across the world.
[2] The New Oxford Dictionary of English defines technology as "the application of scientific knowledge for practical purposes especially in industry".

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Australia. Rogers (1995) described an innovation as "an idea, practice or object that is perceived as new by an individual or another unit of adoption" (Vollink et al, 2002). These two technologies, especially the XBRL, are widely considered as surreal until recently.

Indeed, the XBRL has now been dubbed as the reporting language of the future (Wallace, 2001 and ICAEW, 2004). The XBRL and the DCFR, when combined together form the XBRL-based DCFR, and along with their associated benefits of technological independence, interoperability and efficiency in financial statements preparation and manipulation plus the ability of reaching wider audience at lower cost and wider geography, both can revolutionize the way corporations communicate with their stakeholders.

As it has always been, the introduction of new technologies has always made corporate people wonder about their advantage, complexity, and compatibility to their organizations – as compared to those of the predecessor technologies; hence creating a question mark with regard to their acceptance of the technologies. This problem occurs because the general trend is that as the technologies are growing, so are the skills and knowledge to manipulate them (Colby and Parasuraman, 2003). Unfortunately, with human beings, there is no other way to prematurely uncover this information or predict their perception except by asking them directly.

Therefore, it is important for us to know the perception of the accountants working in Malaysian corporate organizations on the idea of using the XBRL as the standardized data format and framework for preparing and disseminating digital financial information to their stakeholders. If investigated using an established theoretical framework, I believe we are not only able to predict the intention of the potential adopters with regard to these new technologies but also identify certain

attributes or characteristics of the innovation that are influential in deciding their intention to adopt or reject the technologies. One of many theories that have been prevalently used in technology adoption studies is Rogers' (1995) Diffusion of Innovation (DoI) Theory[3]. Thus, this study will employ the Rogers' technology diffusion framework to identify those enabling and impeding attributes of the innovations that significantly influence the possible adoption or rejection decision by the companies as this study simulates that decision making process by the respondents from those companies. Furthermore, with a couple of extra questions, we would also be able to uncover (if there are) other driving or inhibiting factors that might influence the respondents' decision to adopt the innovation in the future. Hopefully, the information solicited this way can complement the information gained previously using Rogers' (1995) Diffusion of Innovation theory and, thus, shed some light on the uncertainties surrounding the acceptance of such XBRL-based innovations among the respondents. Using this information, hopefully, would enable any interested parties to have better guiding lights in addressing the problem of low adoption rate in the DR revolution, especially in its second stage[4].

However, considering that operationalization of a research normally occurs at two levels: at an empirical (occurring in the real world, involving variables and hypothesis) and abstract (occurring in the books, intellectual discourse and all, involving concepts and propositions) levels (Zikmund, 2003), it is unavoidable that the uncertainty surrounding the acceptance of the XBRL innovation in the real world would conceptually cause another collateral problem to arise at the abstract level – which is a new gap in the IFR and DoI literature (the latter was solely subject to the

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[3] The framework of the DoI theory will be explained in detail in the fourth chapter of this thesis.
[4] ICAEW (2004) divided the progress of the DR into three stages. This will be discussed later in the second chapter.

theory chosen for this study) (Babbie, 2007). It arises in parallel with the other problem mentioned earlier, both as a result of the emergence of XBRL, but both can be solved simultaneously by conducting this study – which is like "killing two birds with one stone".

This new gap created in the literature needs filling – so as to account for questions like 'what factors cause users' intention to accept or reject the innovations?', 'what are its benefits?', 'what is its effect on the current DCFR practice', 'is DoI able to explain (or be extended to) the phenomenon of XBRL adoption?' or anything else in a way that can be generalized across many circumstances. Therefore, new researches need to be done to provide exhaustive answers to such questions – in the context of the XBRL-based innovation, how its adoption could be justified and facilitated – and, thus, creating new knowledge to fill those gaps at the abstract level. On a specific note, in the Malaysian context, most prior researches were just examining the extent of the IFR disclosure in general (Arfah et al, 2001; Hanifa, 2004; Fathilatul Zakimi, 2005 and Khadaroo, 2005). Due to the novelty of XBRL in the Malaysian IFR landscape back then, none has investigated the XBRL issue. Therefore, XBRL opens a new gap in the local accounting literature and it needs filling; to account for its acceptance and research methodology used, particularly in the local context.

Having explained the research problem that moved me to conduct this study, the next section will specify the objectives of this study in detail, and later, accompanied by the research questions used to translate those objectives into queries to be answered by this study.

1.2   RESEARCH OBJECTIVES

One of the main purposes of this study is to examine a selected group of Malaysian listed companies' intention to adopt two types of XBRL-based Digital Reporting (DR) models[5]: firstly, a basic XBRL-based DR model and secondly, an XBRL-based DR model with Audit and Security assurance features. In addition to that, this study also tries to measure the current adoption rate of a Conventional DR model[6] among the sample companies. These three models are designed out of deduction from the characteristics of the first two stages of the DR progress framework[7] – as described by the ICAEW (2004). The measurement of the companies' intention to adopt the models will be done within the scope of the DoI theory's framework.

On the other hand, in extending the knowledge related to the DoI, this study also strives to add further evidence to the robustness of the DoI theory by experimenting it with a new innovation, XBRL. A new innovation brings along with it new techniques, benefits and issues, which requires assessment from the potential adopters to compare it to the current technology they are using. Thus, as the potential users are assessing it, and since the XBRL is a totally new innovation in the area of DR and is yet to be tested using the theory of DoI before, then this study will take this opportunity to also try to measure the degree of correlation between the DoI theory's innovation attributes and the decision to adopt or reject the innovations (as proxied by the two aforementioned XBRL-based DR models) – thus, providing further evidence on the robustness of the DoI theory.

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[5] These models of XBRL-based DR systems will exploit the XBRL to provide interactive corporate financial information that can be manipulated effortlessly by users across all software and technological platforms.

[6] Using a conventional digital reporting model, a company will provide digital corporate information to its stakeholders in various non-standard data formats such as *.doc, *.xls and *.pdf through its corporate website or any other internet-based mediums. The information provided is normally the same as the one previously made available in an analogue or paper-based format.

[7] The DR progress framework will be explained in detail in the second chapter of this thesis.

In addition to that, this study also endeavors to evaluate which of the postulated innovation attributes are significantly influential in deciding the adoption or rejection decision of the two XBRL-based DR models by the selected group of Malaysian listed companies. This effort is tested based on the Rogers' (1995) proposition that the decision to adopt or reject an innovation is significantly influenced by certain DoI theory's innovation attributes. Hopefully this effort can enlighten us with some knowledge regarding the attributes or factors that are influential in an innovation adoption or rejection decision by the local companies – which, in turn, would help us tackle certain issues related to the possible implementation of the XBRL-based DCFR in this country soon; notwithstanding the models accepted or rejected.

Furthermore, since the input of the industry is also important in standard setting, this study also tries to solicit their input regarding the obstacles possibly faced by Malaysian corporations in fulfilling the second level of DR and what they think are needed in order to spur them to fully adopt the second level of the DR.

1.3   RESEARCH QUESTIONS

In order to accomplish the objectives of this study, the following research questions are set out in order to be answered by this study:

1. What is the current rate of adoption of the Conventional DR system among the sample companies?
2. Are the companies willing to adopt the proposed DR models for the second stage of DR, i.e. both of the XBRL-based DR models?
3. To what extent is the companies' intention to adopt (or reject) the innovations correlated with Rogers' (1995) proposed innovation attributes?

4. Which of the innovation attributes are significantly influential in the companies' intention to adopt (or reject) either of the XBRL-based DR models presented?

5. What other factors are obstructing the companies if they are to adopt XBRL-based DR systems in the future?

1.4 MOTIVATION OF THE STUDY

One of the events that have sparked my motivation in studying this topic is seeing the tsunami-like emergence of the XBRL especially in the developed countries and around the globe generally. The XBRL has since been hailed as the universal language of the financial reporting, yet there is hardly any sign of its ripple in Malaysia. In just about eight years, starting from the turn of this century, the idea of an automated and interoperable accounting data sharing has grown from a mere fantasy into now a reality. The practical implementations of it can be seen currently in Australia (APRA Project) and in the U.S. (SEC Filings) (Williams et al, 2006 and AccountingWeb.com). Therefore, thinking from the Malaysian context, it is interesting to know how the local companies perceive this innovation of the financial reporting technology.

Also, with the vast benefits of the XBRL plus the already widespread internet network infrastructure in Malaysia, it is curious to know whether the local companies would want to go a step further by adopting this new XBRL-based financial reporting technique. After all, the practice of disseminating corporate information online has been already growing rapidly in Malaysia since Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange (KLSE)) had made compulsory the requirement of filing the electronic form of the financial statements for display on the Bursa Malaysia's website since November 1999 (Arfah et al., 2001) and the introduction of