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# Issues around firm level classification of IT investment

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## Issues around firm level classification of IT investment

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### Abstract

*This paper describes two stages of research-in-progress studying the classification of IT investment from the accounting perspective. It addresses the overlooked input side of IT business value research and explores how firms report and classify IT asset and expenses. In the part of the study, we found only 8% of firms report their IT expenditure separately from other forms of expenditure, a finding inconsistent with the increased reliance on IT in modern business practice. In the second part, we further explore the accounting and financial reporting standards that lead to the first finding. The research highlights issues related to inconsistency in reporting of IT at the firm level.*

### Keywords

Accounting Information Systems, IT assets, Financial Accounting, IT investments, IT classification

## 1. INTRODUCTION

During the early years of IT Business Value research (ITBV), researchers questioned the benefits firms could realize from IT (Bharadwaj et al. 1999; Dewan and Min 1997; Im et al. 2001; Tam 1998). In later years, ITBV research evolved to focus on how IT brings benefits to firms. Key themes that were highlighted were the concept of complementarities (Aral et al. 2009; Aral and Weill 2007; Lin and Shao 2006; Ramirez et al. 2010; Yu et al. 2006) and the resource-based view (Bharadwaj 2000; Rivard et al. 2005; Wu et al. 2005). Both the early and later research in ITBV tried to assess the impact of input factors (IT investment and other input variables), on output such as productivity, market performance and profitability. However the difficulties in the measurement made this assessment difficult.

Exploring the "IT paradox" dominated early ITBV research after researchers found no correlation between IT investment and firm performance, e.g. (Loveman 1994; Brynjolfsson and Hitt 1996). Strassmann (1997) in particular found no correlation between IT spending and firm performance indicators such as Return on Asset (ROA) or Return on Equity (ROE). Brynjolfsson and Hitt (1996) claim to have resolved the "IT paradox" in their 1996 paper titled "paradox lost" but inconsistencies in the relationship between IT and business value have not been fully reconciled (Lin and Shao 2006).

The reasons for the inconsistency between IT investment and benefits realization were categorized and explained as problems of mismeasurement, mismanagement, lags and redistribution (Brynjolfsson and Hitt 1996; Jon-Adriid et al. 1999; Willcocks and Lester 1996). However, the input factor, especially how much a firm really spends on IT, is crucial in this analysis and has not been examined closely by researchers in this field. Clearly if the input is not measured with any reliable accuracy, our ability to determine ROA, ROI or contribution to firm performance is compromised.

In this paper, we attempt to identify the problems that cause the inconsistency in measuring IT investment input at firm level from a financial accounting angle. We highlight Different issues that cause the difficulty in measuring IT investment from the accounting data in financial report. This paper is organized as follows. First, the summary of the related Australia Accounting Standard (AASB) show how firm should classify and report the expenditure in IT investment. Second, the literature reviews discuss different factors that could impact the reporting of IT expenditure in financial report. Third, the preliminary data shows that majority of listed firm in Australian Stock Exchange (ASX) did not report IT investment. Then, how firm classify IT investment is explored. Lastly, the conclusions are drawn and future research directions proposed.

## 2 LITERATURE REVIEW

### 2.1 Australian Accounting Standards - classification of IT investments

Australian Accounting Standard 101 "Presentation of Financial Statements" paragraph 9, AASB 101.9, states there are five categories of information that need to be reported in financial statements. They are "(a) asset, (b) liability, (c) equity, (d) income or expense, (e) contribution by and distribution to owner in their capacity as owners and (f) cash flow". AASB 101.10, specifies five statements requiring to be reported in the financial statement. These are the Balance Sheet, Income Statement, Statement of Change in Equity, Cash Flow Statement and The Note to Financial Statement.

IT investment can potentially be classified as Asset or Expense. The investment can be capitalized as asset if it meets the recognition criteria set by Australian Accounting Standards (AASB Framework paragraph 53 to paragraph 59, AASB Framework paragraph 89 to paragraph 90). A short description provided in AASB Framework paragraph 89 states "An Asset is recognized in the balance sheet when it is probable that the future economic benefits will flow to the entity and the asset has a cost or value that can be measured reliably". If expenditure does not meet the criteria set by AASB to be recognized as "Asset", it needs to be recognized as an expense and reported in the "Income Statement".

The Australian Accounting Standards do not precisely prescribe the categories to be used for reporting or the minimum threshold amount for categories to be separately reported. Only a few categories are required to be reported as the line items on a balance sheet. One line item is "Property, Plant and Equipment" (PPE) consisting of expenditure capitalized as asset (AASB 101, AASB 116). The minimum subclass of PPE required to be disclosed in The Note to Financial Statement is "PPE in the course of construction". Another line item that has to be reported is "Intangible Asset" (AASB 101, AASB 138). Apart from these specified line items, firms can create any classes, categories and use any terms as appropriate for decision making according to the nature of the operating activities of the firm.

When IT investments are reported as "Expenses" in the Income Statement, firms can create line items and use any terms as long as they are relevant to the decision making of users. There are some categories of expenditure that must be reported, but none of these categories are particularly relevant to IT investment.

In addition to the rules described above, it is relevant to note that a firm should also create and report on another class of expenses: costs in a research phase (AASB 138.54 to AASB 138.56). Note however, expenditure on training staff to operate an asset cannot be included as cost of asset, and must be recorded as an expense (AASB 138.67, Interpretation 132). This means, some IT costs, for example software development and training, can be found in many different expense categories and be described by a variety of terms in the Income Statement.

Expenditure needs to be classified separately according to their nature and function if they are material (AASB 101.29 to AASB 101.30, "Materiality and Aggregation"). If the amount of IT expenditure is not material for a firm, then a firm can group the IT expense with other expenses that are similar in nature and function to the IT expense. The implication of this is that IT may often be reported in a category such as PPE, but it cannot be assumed that reported PPE includes IT expense.

Add to the accountings standards, there are other factors that could impact on how firm report IT investment. The following section describes different factors identified from literatures that could be used to explain the decision to report IT investment and the inconsistency in reporting IT investment.

### 2.2 Reporting or Not Reporting IT

#### 2.2.1 Materiality and Voluntarily

The concept of materiality is an important concept in financial accounting and reporting. Information is considered material if its omission and misstatement could have an impact on the user of information for decision-making. For example, information is considered as material if it is required by law and could alter the stock price (Heitzman et al. 2010). AASB 101 requires firms to report expenditure separately if it is material. An AASB 101 test of materiality is to divide the amount of expenditure by a base amount. The base amount could be the total assets, total revenue or net income. If the result of that calculation is bigger than a certain ratio, the materiality threshold, the item is material. However, the materiality threshold can be varied by firm size and by who defines the threshold (Cho et al. 2003; Eilifsen et al. 2005).

Voluntary Disclosure is another concept that explains the behaviour of firm in disclosing information. A firm's managers may decide to disclose a particular item even if the expenditure of that item is not material, if they believe the benefit exceeds the cost (Heitzman et al. 2010; Lo 2010; Wiedman 2000). Benefits could include an increase in stock price and stock return, or future access to equity and loans (Haggard et al. 2008; Heitzman et al. 2010; Wiedman 2000). With IT, there is consistent research demonstrating that IT Investments and IT investment

announcements have a positive relationship and impact on firm market value (Aral and Weill 2007; Bharadwaj et al. 1999; Brynjolfsson and Yang 1997; Im et al. 2001; Ramirez et al. 2010; Tam 1998). Cost is the proprietary cost. One cost that could be incurred from disclosing information could be an increase in competitive threat. When an organization discloses their spending on technology in their financial statements, they might worry that a rival competitor could identify and invest in the same technology and negate any competitive advantage that could have been gained (Wyatt 2005).

### 2.2.2 IT project failure

A reluctance to voluntarily report IT might relate to investor opinion about firm's future performance and market value. ITBV research has shown that IT investment is important for organizational success but it also implies that organizations face risk and bankruptcy with bad management (Keil et al. 2003; Keil et al. 2000; Nulden 1996). Evaluating IT performance by senior management and investors should therefore be an important part of evaluating a firm's overall management and future performance. However suggestions of project failure might give investors a negative view of firm performance and their managers.

According to the accounting standard AASB 116, a firm shall also disclose the property, plant and equipment under construction. Nomura (2004) recommends software in a project development state should be recorded and classified as software in progress and written off as an expense if it fails. However if an expensive IT project was written off as an expense or disposal and reported in the financial statements it could negatively impact on firm market value.

The Standish Group suggests that only 32% of projects succeed, 44% are problematic and 24% fail (Wright and Capps 2010). There are two types of failed project: the project that has already failed and is terminated and the run-away project. A run-away project refers to a project that has already failed but keeps draining resources without any prospect of delivering any benefit back to the organization. It is reported that 30% of IT projects are run away projects (Powell 1992). The run-away project occurs because the people who are responsible for the project do not report the problem. It refers to as IT project escalation (Keil et al. 2003; Keil et al. 2000; Nulden 1996). Other research also suggests a high rate of project failure and run-away projects (Tom and Len 2008; Wright and Capps 2010).

Four different psychological theories might explain this behaviour. These theories are proposed as the main drivers of project escalation: self-justification theory, prospect theory, agency theory and approach theory (Keil et al. 2000). Self-Justification Theory refers to the condition where people commit to a course of action in order to justify their previous behaviour. Prospect Theory posits that the individuals throw extra money and resources after the bad, so called sunk cost effect. Agency Theory explains that people's quality of decision-making is affected when they fear of losing their job and people resist reporting bad news to their superior in organizational cultures that tend to accept only good news. Approach Avoidance Theory suggests people adopt the approach that avoids the most conflict based on size of reward, cost of withdrawal and proximity (Keil et al. 2003; Keil et al. 2000; Nulden 1996). Consistently, the research suggesting managers will only spend 20% of their time to kill an escalating IT project (Wright and Capps 2010).

## 2.3 Inconsistency in reporting IT investment

### 2.3.1 Definitions and classifications

The Australian Accounting Standards allow firms to classify assets and expenses according to the functionality of an item. The description the aggregation of information in financial report can be amended by a firm according to the nature of firm and the transaction (AASB 101.71). This provides the possibility of classifying IT asset and expenses with the other type of firm's asset that performs similar function. For instance, Property Plant and Equipment (PPE) is defined as the type of asset that supports the organization in production and services if according to the accounting standard AASB 116. In ITBV research, IT investment has the similar role in organization. Thus, IT and Non-IT asset could be classified under the same class. Brynjolfsson and Hitt (1996) raised this problem when they questioned whether IT expenditure was reported in non-IT expenditure categories.

Others have also reported a lack of consistency of the way firms classify their IT investment (OECD 2004). In earlier examples it was suggested software embedded in an aircraft might be capitalized as part of the aircraft (OECD 2004). The difference in classifying and defining IT investment including the component in each class can also be seen at the national level by comparing the OECD guidelines with the Australian Bureau of Statistics reporting of IT investment (ABS 2006; OECD 2009).

### 2.3.2 Difficulty complying with accounting principles for capitalization

ITBV researchers have argued that many intangible assets arising from IT investment have been ignored by accountants in this way (Brynjolfsson and Yang 1997; Corrado et al. 2007; Yang et al. 2002). These intangible

assets include new worker skills, improved business processes, new organization structures, etc. Wyatt (2005) has pointed out that it is possible for intangible IT assets to be capitalized in a way that is consistent with AASB requirements. The capitalization could be based on the cycle time for an asset to reach operation, the level of firm control over an asset, and the level of profitability that is likely to be realized. However, these three properties are quite hard to assess in a rigorous way (Wyatt and Abernethy 2008).

With cycle time, a shorter time frame to realize a benefit from an investment increases the probability that a benefit will be realized and determines whether an investment should be capitalized. With IT, there is normally a long period of time or lag between the investment and when benefits are realized. Evidence suggests that the lag is between 2 to 6 years which is relatively long and the benefits are therefore less certain (Bharadwaj et al. 1999; Brynjolfsson and Yang 1997; Devaraj and Kohli 2003; Dewan and Min 1997; Im et al. 2001; Shin 2006; Tam 1998; Weill 1992). The second accounting consideration is control. Knowledge Assets arising from IT investments can be gained when staff is trained to operate a system. However, according to the AASB, the expenditure on staff training must be recognized as an expense. The reason is, the skill training of staff is embodied with the staff and a firm has no certainty of control in relation to realizing the benefits from this expenditure, because staff might leave the firm. If the first and this second accounting consideration are hard to meet, then criteria to meet the third consideration of profitability are not met. It is a legitimate accounting principle to require conservatism in the recognition of profits. Thus, there are legitimate gaps between how an IT practitioner and an accountant might believe an IT investment should be capitalized.

Literature reviews has discussed different factors that could vary the measurement, classification and reporting of IT investment at firm level. The following section describes the preliminary data collection process in order to understand how IT investments are classified by real firm.

### **3. METHODOLOGY AND DATA COLLECTION**

The primary objective of the first part of the study was to investigate how IT expense is reported by firms in general. This allows us to evaluate the quality of the input data being used by ITBV researchers to evaluate how IT impacts on organizational performance. The problem we want to address in this paper forms part of our data collection.

The primary data source for the research was FINANALYSIS.COM. All of the annual reports containing the financial statements of ASX listed firms can be downloaded from this data source. Firms that trade their stock on the ASX are required to publish annual reports. The financial data in a firm's annual report is required to be externally audited before being published. For this reason this primary source is the most appropriate data source of financial information that is available. The research was divided into two stages.

In the first part of the study, information was collected systematically from the 1990-2007 annual report to gain initial insight into how IT is reported by firms in general. This provided an understanding about the accounting practices carried out in firms to account for investments in IT. It also allowed an examination of the quality of input data being used by ITBV researchers to evaluate the impact of IT on organizational performance. The problems addressed in this paper forms part of the data collection.

In the second part, an understanding of how IT investments were treated and classified by firm was developed. Detail in the financial reports of firms was reviewed for those that reported IT in 2007. On 13 April, 2011, 2,298 were firms listed on the ASX, a small increase from the 2,224 listed in 2007. Firms were excluded if their annual reports were not available for the whole five year periods from 2007 to 2010. Firms who were delisted from the ASX were also removed from the study due to incomplete sets of annual reports available. After exclusions, the study has collected the data from the annual reports of 50 firms.

The annual report contains different component including the Balance Sheet, Income Statement, Note to Financial Statement and The Note to Significant Account were examined carefully. The following information was taken from annual reports including the term, the location, and the dollar amount of the IT asset or IT expense in the financial statement. If IT investment was not found on the balance sheet or income statement, the Note of Financial Statement was examined to locate the expenses or assets that could be recognized as IT related investments. If an IT term was found on the note, this was traced back from note to the balance sheet or income statement for the parent class of asset and expense that firm classified those IT investments in base on the aggregated disclosed balance figure. The balance and the descriptive term of the parent class of asset or expense on the balance sheet or income statement as well as the balance and term of the IT asset or expenses on the note was recorded. The location and year of the disclosed term in the annual report were also recorded. It was found that some firms changed their terms of disclosure. Since firm usually disclose their financial statements in a comparative format comparing the current period with the previous period published, the IT asset or expense were traced in case the term changed throughout the period, by comparing the balance disclosed between period.

## 4. RESULTS

This section presents the findings on how IT investment data is reported in practice. The findings are presented firstly from a historical perspective from 1997 – 2007 and then a representation of current practice between 2007 and 2009.

### 4.1 Financial Reporting of IT investment 1990 - 2007

Our research is using 2008 as the baseline and we have focused on the 2,224 firms that were listed on the ASX in 2008. Our input variable, the amount of IT investment, was constructed by systematically collecting data from their annual reports for the financial periods: 1990, 1994, 1995, 1997, 2002 and 2007. The number of listed firm varies between 1990 and 2007, so does the firm that report IT. Three firms had annual reports in 1990. Four, five, 47, 178 and 2,224 had annual reports in the financial periods 1994, 1995, 1997, 2002, 2007 respectively.

In 1990, only one third of firms separately reported IT investment in their financial report. Three out of four firms separately reported IT in their 1994 financial report. The number of firms separately reporting IT was four out of nine in 1995, nine out of 47 in 1997, 47 out of 178 in 2002, 178 out of 2224 in 2007. Of these firms, only 47 had data across all periods from 1997 to 2007. We believe it is a significant and surprising finding that in 2007, the 178 firms that separately reported IT investment in their financial reports represent only 8% of the 2,224 firms listed on the ASX. One assumes the other firms reported their IT investment in an aggregated form mixed with other non-IT asset investments in the category Property Plant and Equipment because it was not considered material. However it is impossible to know if this was the case without more research following a different methodology. A second finding in addition to the small percentage of firms separately reporting IT expenditure, is the wide number of terms (15 in total) used by the 47 firms that reported their IT investment across the period of study. Figure 1 shows the terms and number of firms (in parentheses) that used these terms to report their IT expenditure.

1990	1994	1995	1997	2002	2007
Data processing (1)	Data Processing (0)	Data Processing (0)	Data Processing (0)	Data Processing (2)	Data Processing (2)
	Computer (1)	Computer (1)	Computer (8)	Computer (25)	Computer (25)
	Computer System (1)	Computer System (1)	Computer System (4)	Computer System (4)	Computer System (2)
	IT equipment (1)	IT equipment (1)	IT equipment (1)	IT equipment (1)	IT equipment (6)
	Software (1)	Software (1)	Software (6)	Software (30)	Software (30)
			Data Communication (3)	Data Communication (3)	Data Communication (4)
			Rental & Repair (1)	Rental & Repair (1)	Rental & Repair (1)
			IT Services (3)	IT Services (3)	IT Services (6)
			IT Project (2)	IT Project (2)	IT Project (1)
			Other technology (1)	Other technology (1)	Other technology (1)
			Technology Costs (1)	Technology Costs (15)	Technology Costs (15)
			Hardware (1)	Hardware (1)	Hardware (2)
				Database (3)	Database (3)
				Maintenance (1)	Maintenance (1)
				Website (2)	Website (2)

Figure 1. Evolution of IT related terms used in the financial reporting of IT investment

### 4.2 Financial Reporting of IT investment 2007 – 2009

In attempt to understand current practice in reporting IT investments, we decided to review the same data for the four years after 2007 for the 178 firms that were found to report IT separately in the initial study. The Annual reports were for the financial accounting periods 2007, 2008, 2009, and 2010.

At the current stage of our research, we have analyzed the subsequent three years' (2007, 2008 and 2009) annual reports. Total of 50 reports randomly selected from the 178 firms that had separately reported their IT investment in 2007 for further assessments in 2008 and 2009. Figure 2 and Figure 3 shows the categories that were used in either the Balance Sheet or Income Statement to report an IT investment or expense. The number in parentheses represents the number of annual reports counts that an item was found in the years 2007, 2008, 2009 respectively. For example: Intangible (1,1,1) means the category was used in one firm's annual report in 2007, one in 2008, one in 2009. At the balance sheet level, only one category was found, "Intangible assets – software", that was easily identifiable as being related to IT. Another eight balance sheet categories were identified as being relevant only after reading the Notes to Financial Statements to look for references to an IT investment. These eight categories related to intangible assets classified under AASB138 and AASB116 relating to "Plant and Equipment, Premises and Equipment", "Property, Plant and Equipment". The Notes to Financial Statements used many IT related descriptive terms to report IT assets, and often used the words software or hardware.

<b>Balance Sheet</b>	Goodwill and intangible asset (1,1,1) Goodwill and other intangible assets (3,3,3) Intangible assets (20,22,21) Intangible assets – other (0,0,1) intangible assets – software (1,1,1) Intangible assets and goodwill (3,3,3)	Intangibles (1,1,1) Other intangible assets (6,6,5) Other intangibles (1,1,1) Plant and Equipment (0,2,2) Premises and Equipment (1,1,1) Property, plant and equipment (15,11,11)
<b>Notes to Financial Statements</b>	Acquired candidate databases (1,1,1) Candidate databases (1,1,1) Databases (1,1,1) Acquired software (1,1,1) Acquired software intellectual property (1,1,1) Capitalized computer software (1,1,1) Capitalized software (1,1,0) Capitalized software development costs (1,1,1) Project Development Costs (1,1,1) Internally generated software (1,1,1)  Communication equipment (1,1,1) Computer & telecom equipment (1,1,1) computer and office equipment (0,0,1) Computer equipment (4,4,4) Computer equipment and software (1,1,0) Computer Hardware (1,1,1) Computer Software (11,12,11) Computer Software and Infrastructure projects (1,1,1) Computer Software Costs (1,1,1) Computer technology (1,1,1) Computer/IT & Telecommunication equipment (1,1,0) Computers (1,1,1)	Credit software (0,0,1) Data processing equipment (1,1,1) Design Technology (0,1,1) Development Costs (0,1,1) IT & Telecommunication equipment (0,0,1) IT equipment (1,1,1) Office equipment and computers (1,0,0) Office furniture and computer equipment (1,1,0) Other intangible assets (1,0,2) Plant and Equipment (0,0,1) Purchased software and other intangibles (1,0,0) Software (11,12,13) Software and database (1,1,1) Software and licenses (1,1,1) Software and other intangible assets (0,1,1) Software development costs (1,1,1) Software under development (1,1,1)  Technology infrastructure (1,1,1) Value of development software (1,1,1) Web development (1,1,1)  Website (1,1,1)

Figure 2. Reporting of IT assets on the Balance Sheet or Notes to Financial Statement (2007, 2008, 2009)

<b>Income Statement</b>	Amortization and depreciation expense(1,1,0) Amortization of acquired intangible assets (1,1,1) Amortization of software development (1,1,1) Depreciation and amortization and impairment (0,0,1) Depreciation and amortization expense (13,12,13) Depreciation expense (1,1,1) Depreciation and amortization (3,3,3) Communication and technology (1,1,1) Communications and computing (1,1,1)  Communications and IT expense (1,1,0) Communications and MIS expenses (1,1,1) Computer Costs (1,1,0) Computer expenses (1,1,1) Technology and communication expenses (1,1,1) Technology expenses (2,2,2) Telecommunications (1,1,1) Telecommunications expense (0,1,1) Information technology and communications costs (1,1,1) Information technology expenses (1,1,1) IT & T (1,1,1) IT costs (1,1,1)	Expenses (2,2,2) Expenses – derived from operating activities (1,1,1) Expenses from continuing operations (1,1,1) Administrative expenses(1,1,0)  Operating costs (1,1,1) Operating Expenses (8,8,7) Other charges (0,1,0) Other expenses (3,3,3) Total expenses excluding interest (0,1,0) Total expenses from ordinary activities excluding interest (1,0,0)  <b>Sub class of expenses on balance sheet:</b> Amortization of intangibles (1,1,1)  General expenses(1,1,1) Non-salary technology expenses (1,1,1) Other (1,1,1) Other operating expenses (1,1,1)
<b>Notes to Financial Statements</b>	Non-salary technology expense (1,1,0) System maintenance expense (1,1,0) Administration expenses (1,1,1) Communication expenses(1,1,1) Communications (1,1,1) Communications and computing (1,1,1) Computer (1,1,1) Computer Costs (1,1,1)	Data communication and processing charges (1,1,1) Depreciation: communication equipment (1,0,0) Equipment and occupancy expense (1,1,1) Information services (1,1,1) Information technology (1,1,1) Information Technology Services (1,1,1) IT maintenance (1,1,1) Other expenses (2,2,2)

Computer equipment and software (1,1,1)	Other non-salary technology expenses (1,1,1)
Computer maintenance and support (1,1,1)	Software supplies (1,1,1)
Website (1,1,0)	

Figure 3 Reporting of IT expenses on the Incomes Statement or Notes to Financial Statement (2007, 2008, 2009)

## 5 DISCUSSION

The result from the first part shows that only 8% of firms reported IT separately at any level in 2007, with the majority of IT investments only identifiable by poring through the Notes to Financial Statements. From literatures, there are different difficulties for firm to identify and capitalized IT asset. Thus it is possible that 92% of the firms in our study may be facing difficulties in finding a reliable way to measure and identify IT investments. Firms that are reporting their IT investments may be the ones that have good accounting procedures to help them identify and capitalize IT assets in a way that is consistent with accounting principles.

From what we learnt from the second part of the study, IT assets are mainly classified under the Property, Plant and Equipment category seen at the top level. When it is reported at lower levels, IT assets are often classified with other assets of a firm such as office equipment (Computer and office equipment, Office furniture and computer equipment) and Plant and Equipment. A similar situation occurs with expenses; most firms aggregate IT expenses into the broad category of operating expenses. This show the possibilities of hidden cost occurrence due to the lack of ability to clearly define what are IT investment. The data described in the second stages of study also increase the possibility that IT investment were classified under the other asset, thus not seen to be reported by 92% of firms in 2007.

It was found many firms in their Balance Sheet, Income Statement and Notes to Financial Statement had capitalized their internal development software assets (i.e. successfully completed projects), but only 5 firms reported the software development in progress and its movement. This finding suggests that Australian managers are unwilling to voluntarily report IT investment until it is successful. It also raises a question of whether or not they might be manipulating the materiality rule in order to avoid having to comply with AASB116 and report work-in-progress. There is a strong support from evidence and theory that people responsible for projects are normally motivated psychologically to avoid reporting the failed and run-away IT project to their manager (Keil et al. 2003; Keil et al. 2000; Nulden 1996). If only one third of project succeed, then the undisclosed amount of IT projects in progress cannot be explained by its materiality. In a financial report, a failed IT project could also be classified under other expenses and remain unseen in financial report.

## 6. CONCLUSION, LIMITATION AND FUTURE RESEARCH

Research in IT business value seeks to identify the relationship between the input (IT investment and other complementary factors) and the output (the return that an organization gets from IT). There is much research into the effect of different input and output factors, but research also needs to consider factors that could lead to inconsistency in the analysis of the IT pay off. Many of the different factors that could lead to inconsistency have been studied to some degree, but the measurement of input has rarely been studied by research in this field. This paper describes research in progress that attempt to explore the accuracy of the financial reporting of IT inputs following official accounting standards.

Our findings showed that as low as only 8% of 2,224 firms listed on the Australian Stock Exchange in 2007 reported their IT investment in any discernable way at all. This finding does not reflect the increased reliance on IT in modern business practice. We have explored the accounting and financial reporting practices in an attempt to identify the reason for the inconsistent in reporting of IT investment. Data from 50 firm's annual reports for four financial accounting periods from 2007-2010 showed that IT assets and expenses are sometimes identified in firms financial statements, but mostly in The Notes to Financial Statements rather than clearly in a Balance Sheet or Income Statement. Our current finding is that IT Asset are not reported separately and generally aggregated and reported with other types of assets such as Property Plant and Equipment (PPE) and Intangible Assets (in a way that is consistent with AASB 116 Property Plant and Equipment and AASB 138 Intangible Asset). IT expenses are also aggregated and classified under Other Expenses consistent with the AASB Standards.

No obvious answer was found to explain why IT is not separately reported given its importance as a General Purpose Technology. It is possible IT expenditure is not separately reported in financial statements because the accounting standards allow them to be considered not material and not to matter to investors in evaluating a firm's market value. However, this treatment is inconsistent with research on IT investment and firm market value.

A second reason a firm may not want to voluntarily disclose IT expenditure is because it could negatively impact to the firm market value. In addition to the proprietary cost that is normally considered in voluntary reporting, the high likelihood of IT project failure appeared to present a significant obstacle to reporting of IT investment. While AASB and researchers suggest disclosing software development in progress, only one of 50 firms in our study reported this information. Firms showed much less reluctance to report and capitalize IT Investments once they had been completed.

A third reason for the inconsistency is because the Accounting Standards allowed many ways to classify, define and report IT investment. Firms had the freedom to classify IT according to how it was used (i.e. function) and this could vary significantly across firms and industries. A final reason was that there were legitimate difficulties in justifying the capitalization and identification of IT assets.

This paper presents research in progress. At the current stage, two main contributions can be drawn from this paper. First, it helps to explore how we might improve constructing the input variable for IT business value research. Second, it highlights several critical issues for practitioners and investors related to inconsistencies in reporting IT investment.

This paper is limited by its small scale data collection. Firstly the analysis was informed mainly by Australian Accounting Standards. These Standards are expected to be representative of commonwealth countries but they are changed and updated annually. The paper has been informed by Standards published in 2007, 2008, and 2009. Secondly, the terms, definitions and elements used to report IT were varied. Some terms used by firms might have been outside our realm of knowledge and some IT assets/expenses might not have been identified. To try to reduce risk of missing IT terms itemized in a financial report, we read all the notes provided by firms, especially the short descriptions of line items in their annual report. Third, the findings from the preliminary data reported in this paper is limited to the annual reports of 50 firms from 2007–2009. Data collection will continue to cover over 178 firms over a five year financial period from 2006 to 2010.

In addition to the continuation of data collection, a few new research directions could be started from this point. The information collected from the annual report only show the classification problem at the financial statement level. Firms possibly classify IT expenditure separately but not report at financial statement levels. An accounting exercise contain different IT elements in an IT project could be used for experimenting on accounting practitioners to see how they classify those elements. This could provide stronger verification on different issues of the classification of IT investment from accounting angle. Secondly, a research at another direction could study materiality and factors leading to voluntary disclosure of IT investment in financial statements. This would be a good contribution to the ITBV field from a market approach. Lastly, a research can verify whether the four psychological theories discussed in literature reviews has impact on the report of IT in financial statements.

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