Accounting for Intellectual Capital

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Abstract

The authors review accounting standards for recording intellectual capital (research and development) using Amazon.com as a model. An international perspective of the United Kingdom, the Japanese, and the United States indicates similarities and differences among these countries and the International Accounting Standards. The authors discuss the advantages and disadvantages of expensing versus capitalizing these expenditures with specific emphasis on e-tailing. The impact of dual treatment is equally confusing to external as well as internal users of this financial information.

Introduction

Amazon.com reflects little in the way of assets in its financial statements, because the software expertise (its intellectual capital) is expensed through its annual income statements. Domestic accounting standards require that computer software products be charged to expense when incurred as research and development costs until technological feasibility has been established for the product. This rule is found in both *Statement of Financial Accounting Standards* 2 and 86 (SFAS 2, 86). Even though the intellectual capital required to facilitate consumer shopping online represents tremendous creativity and potential for future cash flows, the accounting standards do not recognize it as such. The nature of intangible assets is difficult to measure by definition, but it is not impossible. Issued in September 1998, *International Accounting Standard 38: Intangible Assets* (IAS 38) follows two prior related exposure drafts. The AICPA Accounting Standards Executive Committee (AcSEC) commented that it would support the international standard, but its letter contained seven pages of questions and concerns. Part of the concern stems from a fear

of overcapitalization of expenditures by unscrupulous individuals. The purpose of this paper is to examine IAS 38, review different accounting treatments (national/international), and the effect on the financial performance of Amazon.com.

International Accounting Standard 38: Intangible Assets

Expenditures incurred for the purpose of designing methods of instantaneous written communication without leaving home or office requires creativity and risk. To access an infinite inventory of books-in-print and have a book delivered to your door the next day is nothing short of a bibliophile's dream. The imagination required should not be classified as an expense; it represents an asset—representing future economic benefits. The accounting profession just has to figure out how to measure it. The International Accounting Standards Committee (IASC) has taken the lead in establishing this premise.

IAS 38 is effective for annual financial statements covering periods beginning on or after 1 July 1999. It applies, among other things, to expenditures on research and development

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(R&D) activities. IAS 38 supersedes IAS 9 (its predecessor). IAS 38 does not apply to financial assets, insurance contracts, mineral rights and the exploration for and extraction of minerals and similar non-regenerative resources. Investments in, and awareness of the importance of, intangible assets have increased significantly in the last two decades.

The main features of IAS 38 are:

- an intangible asset should be recognized initially, at cost, in the financial statements, if, and only if: the asset meets the definition of an intangible asset. Particularly, there should be an identifiable asset that is controlled and clearly distinguishable from an enterprise's good will;
- it is probable that the future economic benefits that are attributable to the asset will flow to the enterprise; and
- the cost of the asset can be measured reliably.

This requirement applies whether an intangible asset is acquired externally or generated internally. IAS 38 also includes additional recognition criteria for internally generated intangible assets and the requirements reflect those of IAS 9.

If an intangible item does not meet both the definition, and the criteria for the recognition, of an intangible asset, IAS 38 requires the expenditure on this item to be recognized as an expense when it is incurred. An enterprise is not permitted to include this expenditure in the cost of an intangible asset at a later date. It follows from the recognition criteria that all expenditure on research should be recognized as an expense. Some development expenditures may result in the recognition of an intangible asset (for example, some internally developed computer software).

After initial recognition in the financial statements, an intangible asset should be meas-

ured under one of the following two treatments:

- benchmark treatment: historical cost less any amortization and impairment losses; or
- allowed alternative treatment: revalued amount (based on fair value) less any subsequent amortization and impairment losses.

Intangible assets should be amortized over the best estimate of their useful life. The standard does not permit an infinite useful life. It includes a refutable presumption that the useful life of an intangible asset will not exceed 20 years from the date when the asset is available for use. Required disclosures on intangible assets will enable users to understand the types of intangible assets that are recognized in the financial statements and the movements in their carrying amount. IAS 38 also requires disclosure of the amount of research and development expenditure recognized as an expense during the year (IAS 38).

IAS 38 is applicable to an entity's external acquisition or internal generation of R&D costs—a major hurdle. A twenty-year life of intangible assets limits the notion of an infinite life; yet, it allows for a more reasonable recovery time for the investment.

Lack of Comparability in Accounting Standards for Research and Development Costs

The British, the United States, and the Japanese each have definitions and accounting treatment of research and development costs that differ from the international standards and from each other. The United States is reluctant to capitalize an entity's intellectual capital, as are the British.

United States

The AcSEC comment letter related to the IAS exposure draft on R&D, while purporting to agree with the International Accounting Standards Committee, included some seven

pages of issues. Internally generated intangible assets should be expensed. The AcSEC current Exposure Draft Statement of Position (SOP), "Accounting for the Costs of Computer Software Developed or Obtained for Internal Use," supports requisite analysis and appropriate criteria for the capitalization of costs relating to internal use software. If software is purchased from a third party, an entity may capitalize it; if developed internally, the entity must expense those costs. AcSEC is critical of the IASC because it uses the same measurement technique as in IASC 16 for property, plant, and equipment. The nature of intangible assets differs significantly from physical assets and measurement methods should be decided on an individual basis. The final comment in the letter suggests that AcSEC does not support IAS 38 as the exposure draft was written. AcSEC believes its SOP to offer superior accounting treatment for intangible assets (R&D costs).

Confirming support for expensing in-house research and development costs includes the following thoughts:

- Free market, capitalistic system exists.
- Everyone plays by the same rules in the US.
- Development of software costs does not fit the category of an asset defined.
- No exceptions are allowed for innovation or creativity.
- Don't capitalize a current expense.
- Period cost is not a product cost when delivering service to customers; thus, electronic commerce costs should not be capitalized.
- Historical costs consider internally used labor as expense.
- Ignore intellectual capital because it is too difficult to measure.

Capitalizing the research and development costs as an asset rests upon the following properties:

- Intellectual capital has value.
- Expensing stifles innovation and creativity

by driving down the earnings statement.

- Expensing supports monopolies and oligopolies, driving out the entrepreneur and/or small businesspersons.
- Expensing destroys comparability of divisions within a company and among companies.
- Expensing creates two different fruits from the same tree.

British

The British, on the other hand, think that disclosure is much more important than the accounting treatment of research expenditures and that the financial statements are not viewed as the primary channel of communication for information on research (Nixon, 1997). The UK accounting regulators need to move beyond a focus on the narrow technical issues of research in order to consider the role of financial statements in the wider communication process that occurs between companies and accounts users. Nixon's article states that "most" senior accountants prefer to expense all research and development costs immediately for the theoretically sound reason that the *ex ante* benefits are too uncertain. Obviously investors have already taken intellectual capital into account judging from soaring prices at Amazon.com in late November 1998.

Japanese

The Japanese define research and development in a new exposure draft as follows:

- Research is a planned search and exploration for discovering new knowledge while
- development is a process of translation of research findings and other knowledge into a plan or design for new products, services, and processes.

The cost elements of research and development include labor, material, and allocation of depreciation and other overhead costs consumed by such research and development activi-

ties. Elements of software production costs for research and development activities should be charged to expenses as research and development costs. Charges to expenses would be included as either current administration expenses or production expenses; i.e., they are period costs, not product costs (*Japanese Exposure Draft*).

Accounting for software that does not meet the research and development definition follows:

stock dropped from \$142 to \$91.19 in one day (InternetFinance). Amazon didn't release any new information nor do an about face. Why would investors fear Barnes & Noble? Because investors, well read and intelligent folks, know Barnes & Noble is an industry giant, the biggest in the United States book business (Barnes & Noble Financials). Is Barnes & Noble returning a profit to its shareholders? Does it have lots of assets in the balance sheet? Yes, and yes. Barnes & Noble has lots of hard assets, like

Exhibit 1

Illustrations	Accounting Treatment
Software for providing services (if used for externally providing services to assist customers' administration and it is obvious that it will raise revenues)	Aggregate and capitalize as Intangible Fixed Asset
Software for internal use: If purchased from a third party Otherwise	Capitalize Expense

The total amount of research and development costs included in current administration expenses and production expenses should be disclosed in the financial statements. The standard is not applicable to exploration or excavation for natural resources. Why? Natural resources are a scarce resource and thus enjoy a more favorable accounting treatment.

Amazon.com—Where are its assets?

Amazon.com is first in building a real-time library of books for sale online. What started with Amazon.com as a just-in-time inventory system through using its distributors' wholesale inventories has moved into an enormous in-house inventory with enhanced speed of customer delivery.

More costs? Sure! Amazon wants to beat the competition, and it wants to delight the customers. Repeat customers are estimated at 60 percent. When Barnes & Noble, Amazon's major competitor, entered bookstore *e-tailing*, investors may have been scared off. Amazon's

property, plant and equipment. Accountants can touch them; accountants can measure them. Is a building worth more than a brain? Apparently, accountants think buildings are easier to measure; procedures exist for that purpose.

Did anyone look at Amazon's financials and start bidding lower market prices (Amazon Financials)? The answer is a definite "no." In late November 1998 when Amazon.com announced a 3:1 stock split, share prices rose 18 percent to \$180.625—an all time high. How can an outside user comprehend financials when even in-house managers have difficulty given the current different accounting treatments for research and development. If research and development is funded in-house or through independent contractors, the company must expense it. If the company purchases it from a third party, the expenditure must be capitalized and amortized over a period of years (AcSEC Exposure Draft) Where is the incentive for a start up company to foster innovation and creativity? How can an entity effectively outsource its own creative ideas?

Current Confusion among Internal Users

If Amazon.com buys software from Bill Gates, it can capitalize the expenditure as an intangible asset and amortize it over a period of years. If Amazon develops software through its own research and development, then the company must treat those activities as a period expense and let it flow through the income statement. Not only does this differential treatment in the external financial statements confuse external users, but also it further confuses managerial accountants. When a manager receives an allocation at a fraction of purchased research and development costs for one division and an expense for the in-house research and development at 100 per cent of costs in another division, the manager's ability to compare operating performance of the two divisions is seriously impaired. For example, if the best sellers' division has a \$5,000,000 expense for a new competitive product that consumers need, the year's revenues of \$4,000,000 will show at least a (\$1,000,000) loss. Another division, the rare books division, may have \$4,000,000 annual revenue with only \$3,500,000 expenses because nothing was spent on developing new products or because only 1/40 of the purchased cost of needed software was amortized during this period. If \$40,000,000 was the purchase price of that software, then this division need recognize only \$1,000,000 amortization expense per year. A \$500,000 profit for the rare book division versus (\$1,000,000) loss in the retailing division paints a poor performance for the manager of the best sellers' division.

Implications for *e-tailing* with Amazon.com

How does this affect Amazon.com? The impact is exactly the same. They have taken the bold and risky step to be first in the electronic market with innovative strategies for delighting the customer and delivering almost any book desired by the consumer--all at a tremendous cost. Because all the expenditures for electronic development of web pages, an infinite

real-time inventory, and secure credit card payments are expensed, few intangible assets for these activities are on the balance sheet. The rationale is that those expenditures do not represent certainty of revenues (AcSec Exposure Draft.) *E-tailing* on the web requires a business have three key attributes:

- a strong business model
- value-added content and services
- a commodity product to sell

Amazon certainly has initiated a company with all those attributes. To delight the customer, the Web merchant needs to be sensitive to customer needs:

- Customers want a wide variety of merchandise; Amazon gives them an infinite variety.
- They want ease of use in shopping; the shopper simply clicks the mouse.
- They want competitive pricing; Amazon gives heavy discounts of up to 40%.
- Amazon must, and is, spending aggressively on marketing, advertising, and product development; so profits can't be far behind.

Recent Debt Issue

While a major bond rating firm, Standard and Poor's, conceded that Amazon is a leading online retailer of books with rapid growth in an evolving marketplace, they rated Amazon's new debt issue as "junk." The innovative entrepreneurial entity must contribute high levels of investment in technology, logistics and marketing, and the potential for heightened competition; such expenditures require huge amounts of cash which will take years to turn profits or a positive cash flow (Red Herring Online). Amazon's initial public offering of capital stock and its recent bond offering of \$530 million (10 % senior discount notes due in 2008) provided huge amounts of cash. The cash evaporated quickly. Even though these investments in software assure ease of marketability on the web, the investment is designated an expense. Why can

these investments not be written off over a period of years rather than expensed in this year? Because accounting rulemaking bodies are not sensitive to the financial environment. What incentive is there for any organization to invest in innovative technology when the expensing of such expenditures will destroy current earnings and related market price as well as bond ratings? IAS 38 would recognize these expenditures as an intangible asset to be written off over a period of not more than 20 years.

If Amazon needs \$1 billion in annual sales to breakeven (according to the Ice Group consultants), that number is a major shift from the June 1998 second quarter of \$115,977,000 (*Amazon Financial Statements*). How can Amazon start to enhance its profits? According to managerial accounting theory, there are five ways to enhance returns on investments:

- Increase sales
- Decrease operating expenses
- Decrease fixed assets
- Increase inventory turnover
- Decrease inventory returns

Increasing sales and inventory turnover are major areas for continuous improvement. Increasing the sales will generate the potential for profits and build market share. Higher inventory turnover will enhance profits. Additionally, the death knell in the book industry is inventory returns. If a book has not sold in 90 days or less, the remainder is sent back to the publisher. The bookstore has paid the entire shipping cost to its store without opportunity to recoup those costs. And finally, what is the impact on the independent bookstore—noted for its uncensored inventory? In November 1998, Ingram's (the largest book distributor in the United States, if not the world) bought Barnes and Noble. It is little wonder that the Feds have stepped in to question this transaction of giants. If you want to buy a copy of any questionable published writing, would you find it at Barnes & Noble. No! The giant retailing stores censure

that sort of work. Where did you say the independent bookstore is?

If Amazon had chosen to issue more equity as opposed to debt, its net income might have been higher (less negative) without interest payments; but the increase in stockholders' equity dilutes the per share earnings and per share value of the company. While Standard and Poor's has categorized the bonds as "junk", investors'/creditors' demand for the bonds has remained high. Ryan Jacob, portfolio manager for the Internet Fund, believes the Standard and Poor's low rating reflects the current negative cash position, not the future potential (Internet-Finance). A future upgrade of the bonds may be dependent on Amazon's ability to execute its strategies and achieve enough scale to leverage fixed costs and marketing expenses.

The UK Accounting Standards Board, the AICPA, the Japanese GAAP, and the International Accounting Standards Committee each prescribe a different treatment for the same development expenditures. Electronic commerce globalizes the business world, but it has not brought consistency in accounting standards among countries. Perhaps it is time to initiate the international standards. The FASB is bowing to pressure to international standards on corporate mergers and acquisitions (*Wall Street Journal*, 1998). It has decided tentatively to allow a maximum of 20 years (not the traditional 40) to write off the intangible asset goodwill.

Following are some selected items from Amazon.com's income statements over the last four quarters:

Sales are increasing in huge dollar amounts, outpacing the relative increase in product development. Marketing and sales expenses, if possible, need to be curtailed until the sales revenues come into line. Faster inventory turnover would also generate more profits. Moreover, Amazon.com could return to using its distributors' inventories and make them pony up the

Exhibit 2
Amazon.com Selected Financial Items (000s)

	6/98	3/98	12/97	9/97
Sales	\$15,977	\$87,375	\$66,011	\$37,887
Product development	8,060	6,729	4,520	3,582
Amortization of goodwill & other purchased intangibles	5,413	NA	NA	NA
Marketing and sales expenses	26,452	19,503	16,306	10,979
Total operating expenses	43,187	28,195	22,746	16,364

books to customers in a more timely fashion.

Conclusions

As the environment of business changes, so must the philosophy and related accounting issues. Cyber space points out the notion that just because you can't touch or feel an asset, you cannot ignore it; it doesn't come for free. Accountants should be able to quantify the value of an asset. If exploration and excavation of natural resources are excluded from this expensing of expenditures of research and development, why can't exploration of electronic methods of creating value for the consumer fit into the same category? With electronic commerce, the consumer doesn't need the automobile (transportation), the gas and oil (fuel) to run it, nor the building (brick or wood) to provide storage or point of sale for the consumer. Physical demands of transportation, brick and mortar, and fingering the inventory disappear into the consumer computer. Doesn't that convenience make it more valuable?

In summary, IAS 38 applies if the intellectual capital were acquired internally or externally, limited to a twenty-year life. If Amazon.com were a British company, it might capitalize most of its expenditures for research and development--making a significant impact on net income and intangible assets. Full disclosure in the notes to its financial statements would explain that fact to users. In Japan or the United States, no such choice exists; the rule is to expense. The new international standard (38)

would capitalize those expenditures; and regardless of internal or external acquisition of intangible assets, there would be comparability among companies and within a company. Amazon would compare more favorably against its competitors who rest upon their brick and mortar as a security blanket. The investor/creditor has already discounted this fact in its purchase of both stock and bonds in the financial markets. The fair market value of Amazon's stock seems to bear little relationship to its accounting "book" losses.

Implications For Further Research

As service-oriented companies, especially high technology and Internet service-based companies continue to grow, the implications for the accounting and reporting of intellectual capital and intangibles will become an increasingly important issue in business. There are several important further areas of research in this area. Obviously, the continued debate as to whether to expense or capitalize costs associated with intellectual capital will be of importance. Currently, in business acquisitions, we see alternative accounting methods being applied in accounting for goodwill, which is in many cases an extension of the intellectual capital issue. The first area of research is to further refine valuation models that can assist analysts and others in valuing the intellectual capital in business decisions. Also, there is an opportunity to investigate the stock prices and the impact of those prices for companies rich with intellectual capital but meager accounting and finance variables. Perhaps the in-

vestor or creditor is instituting other methods for stock valuation. The free market system offers opportunity for further examination of the relationship of traditional accounting criteria and valuation of financial instruments. Lastly, this area is rich with opportunities to push the traditional areas of accounting theory and identify the purpose of financial statements and the related elements. The area of intangibles has always been a controversial in defining assets and the equity of a business. As companies become richer in these types of resources, the question will continue on how to account and report them in the financial statements. In short, there is an abundance of further research opportunities in the intellectual capital area because of its increasing significance to organizations and the capital market system.

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