Measuring and Reporting of Intellectual Capital:
With Special Reference to Commercial Banks in Sri Lanka

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Abstract

Importance and growing pressure from shareholders on Intellectual Capital (IC) have been increased over the past decades since managing, measuring and reporting of IC is becoming recognized as an important strategy for transparency and more complete information on the potential profitability and growth of organizations in competitive environment. However, Sri Lankan companies still give little importance for the measuring and reporting of IC. Thus, the objective of this study is to develop a measuring and reporting framework for IC in Sri Lankan contexts. This study is conducted over five limited liability commercial banking companies currently operating in Sri Lanka. Study found that measuring and reporting framework for IC was developed in western countries could be applied in Sri Lankan contexts with required adjustments based on stakeholders' prospective and available information.

Keywords: measuring, reporting, Intellectual Capital, competitive environment

Introduction and Significance of the Study

Intellectual capital (intangible investment) is gaining attention at both the national and the corporate level. Countries such as Singapore, Malaysia, Japan, India and China have placed a high premium on improvement in education and training of work force, technological progress and better management systems etc. As a result of that they have achieved high productivity growth rate and, now their GDP per capita income have overtaken that of developed countries like UK and USA (Booth, 1998).

Developing country like Sri Lanka, which is experiencing with law growth rate, proposed budgets of last two years i.e. 2003 and 2004 have mainly focused on employment creation, human capital development and improvement of an information technology, which intended to set the platform to increase overall national productivity, improve competitiveness in the global market, improve quality of life, share resources and knowledge etc. by integrating all the government and private sector institutions through well laid information and communication net work (Perera, 2002 and

Ratnayake,2003).

In a recent study, Margaret Blair of the Brookings Institute in Washington shows that the 'missing value' has grown from 38% in 1982 to 62% in 1995. Dzinkowski, (1999) found that the difference between book value and estimated market value i.e. intangibles comprise 75% of the value of these companies. In other research the value of tangible and intangible assets as a percentage of total corporate assets are:

	1978	1998
Intangible assets	17%	31%
Tangible assets	83%	69%

Source: *Brookings Institute; Washington, D.C*

Therefore, intellectual capital has become far more important than the tangible assets measured by traditional financial accounting. However, traditional accounting methods do not have precise methodologies for placing a value on intangible assets like policies and procedures, the knowledge of the staff and relationship with customers. Rather these methods have traditionally lumped such assets in a line item designated 'good will' for which

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there is no exact calculation. As businesses are increasing self services rather than goods, and as their primary inventory increasingly becomes expertise rather than parts, traditional accounting methods can no longer provide an accurate measure of the financial value and health of a business. For many software and Internet companies' intangibles represent large part of their value. For example: When IBM bought Lotus in 1993, IBM paid $3.5 billion, even though the value of Lotus's tangible assets (called book value) was only $250 million. The difference between book value and the amount paid for the business was the perceived value of the intellectual capital in Lotus at that time. The fourteen-fold difference between the book value of Lotus and its sale price, a ratio typical of many sales in the high technology sector, has caused great concern in the financial community (Carliner, 2000). Thus it is worth to examine how intellectual capital can be measured and reported as an additional information which will be useful to interested parties of business information

Although many empirical studies have been conducted in the western country on the subject of intellectual capital, relatively little or no empirical studies have been conducted regarding this subject in Sri Lanka. Therefore, this study attempts to replicate those studies conducted in western countries (especially UK and Scandinavia) and see their applicability in Sri Lankan contexts and to pave out the way to corporate sector in Sri Lanka to increase their competitive advantage through improving their intellectual capital (IC).

Objectives of the Study

As mentioned in the introductory paragraph the intellectual capital is very crucial to both at the individual as well as the national level. This importance attached to the subject had a significant bearing when formulating the objectives of the study. The primary objectives of this study are as follows:

To identify the existing measuring and reporting practices of IC of corporate sector in Sri Lanka.

To identify how measuring and reporting practices of IC developed by western countries can be applied in Sri Lankan contexts.

To suggest about the further developments or adjustments required making for these IC measuring and reporting practices to make them suit in Sri Lankan contexts.

Methodology

This study basically attempts to examine and provide a clear picture of how to measure and report intellectual capital of commercial banking industry in Sri Lanka. As the sample of this study, five commercial banking institutions operating in Sri Lanka were selected. They are Sampath Bank, Commercial Bank, Hatton National Bank (HNB) and Seylan Bank. Random sampling method was used in selecting the sample in this study in order to measure the value of IC and the bank with the highest IC value was selected to develop an Intellectual Capital statement by forwarding a questionnaire to the personnel who are involving in Human Resource function, Information Technology, Marketing and Corporate Management. This study basically depends upon the primary data gathered through the stock market information published in the Daily Newspaper, the financial statements of the selected banks and the administration of a questionnaire to the bank with the highest IC value in the sample. In addition various institutional publications such as HNB Stock Brokers monthly research report, Quarterly internal publications of banks, Colombo Stock Exchange website and publications of professional institutes like the Institute of Bankers of Sri Lanka, Chartered Institute of Management Accountants U.K (CIMA) etc. were used as secondary data sources.

Measuring and Reporting of Intellectual Capital

Intellectual Capital

Dzinowski (2000) states that the total value of IC consist of individual values of following components.

1. Human Capital indicators: Reputation of company employees with head-hunters, yeas of experience in profession, rookie ratio (% of employees with less than two years experience), employee satisfaction, proportion of employees making new idea / suggestions, value added per employee and value added per salary dollar,

2. Organizational capital indicators: No. of patents, income per Research & Development expense, project life cycle cost per dollar of sales, no. of times the data base has been consulted, contribution to the data base, upgrades of the database, and volume of information system (IS) use and connections, cost of IS per sales dollar, income per dollar of IS expense, satisfaction with IS service, no. of new product introductions, new product introductions per employee, no. of multi functional project teams and value of new ideas (money saved, money earned).

3. Customer & relational capital indicators: Growth in business volume, proportion of sales by repeat customers, brand satisfaction, customer complaints, product returns as a proportion of sales, proportion of customer's (supplier's) business that your product (service) and represent (in dollar terms).

Reporting of Intellectual Capital

According to Larsen, Bukh, and Mouritsen (1999), even if there are differences between firms. it is possible to construct a more generic model of the structure of IC statements. Following diagrams in Table 1 and 2 illustrate how the metrics are defined and connected with a set of management arenas, and how they in turn together connect with a scenario which makes them relevant. These three elements are highly coupled, although in different ways in different firms.

Review Empirical Studies

Although research in the area of IC is comparatively low (Larsen, Bukh, and Mouritsen, 1999), a resent research conducted by the University of Ulster, Ireland (2001) has taken in to consideration for an example in this study in order to see how companies' responses for reporting of IC. Its main aim was to see what stage they had reached when it came to measuring IC. A mixture of traditional manufacturing firms and new economy companies such as telecom, software etc., were used in this survey (Wall, 2002/03). According to the findings of the survey the highest ranked elements of IC were application of software, customer satisfaction and workforce expertise, which can be broadly categorised as organisational capital, customer capital and human capital respectively. Elements of these three categories of IC can be further being measured and ranked according to their importance as follows;

Table 1: The idea of the Intellectual Account

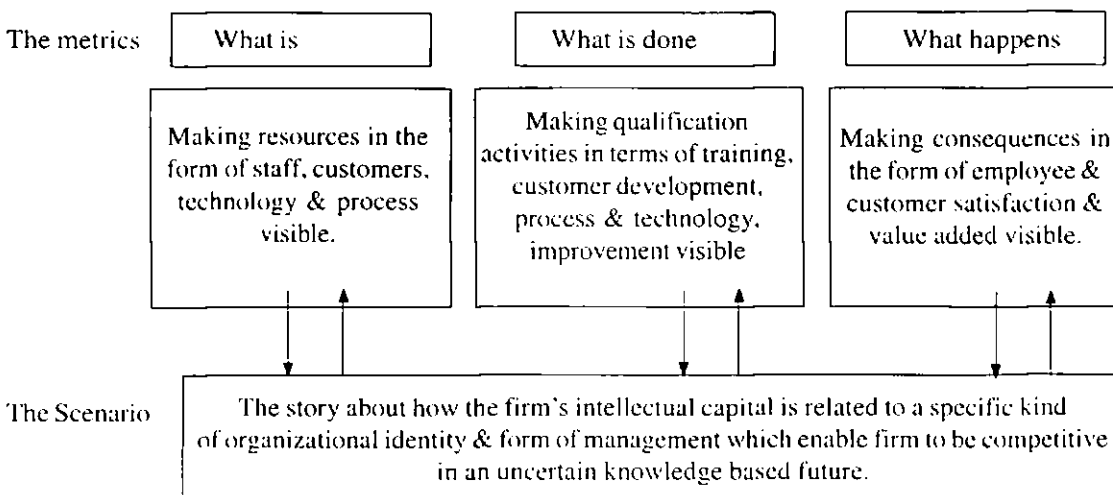| The metrics	What is	What is done	What happens
	Making resources in the form of staff, customers, technology & process visible.	Making qualification activities in terms of training, customer development, process & technology, improvement visible	Making consequences in the form of employee & customer satisfaction & value added visible.
The Scenario	The story about how the firm's intellectual capital is related to a specific kind of organizational identity & form of management which enable firm to be competitive in an uncertain knowledge based future.		

Table 2: Metrics in Intellectual Capital Statements

	What is' Statistical Information.	'what is done' Internal key indication.	'What happens' Effect measure
Staff	No. of employees Distribution of sex. Length of employment. Formal education & training.	No. of employees with personal development plan. Expenses for training & education. No. of training days per employee. Expenses for training & education per employee.	Employee satisfaction. Employee turnover ratio. Human Resource accounting. Value added per employee.
Customer	Sector & market turn over. No. of customers per employee. Distribution of revenues on markets & products. Pcs per employee . Portable Pcs per employee.	Marketing expenses. Marketing expenses per $ revenue. Administration expenses per $ marketing expenses.	Customer satisfaction. Customer loyalty. Percentage of long term customers. Company reputation.
Technology	Share of internal to external IT customers.	Invesments in R&D & infrastructure.	IT Qualifications IT licenses
Process	Expenses per process. Distribution of staff processes	Expertise Development cost. Quality improvement cost.	Errors: Waiting time. Quality. Through put time. Product Development time Telephone Availability.

Human Capital

1. Employee loyalty – ie, length of service & staff turnover, which were both measured by more than two thirds of the respondents.

2. No. of employees with professional qualifications.

3. Value added per employee & new ideas generated.- measured by small No. of respondent companies.

Customer Capital

1. No. of customer complaints - 90% of the respondents were keeping track of the No. of customer complaints they were receiving.

2. Effectiveness of advertising campaigns.

3. Some of the businesses still aren't taking note of the No. of customers they have.

Organizational Capital

1. Organizational capital was the one that companies measured the least.

2. Expenditure on research & development & IT spending as a percentage of administrative costs are the only two elements of OC which were measured by more than half of respondents.

3. Two thirds of the respondents were measuring employee and customer satisfaction, but fever than a third were monitoring any changes resulting from the feed back.

One of the objectives of the Ulster university (2001) research was to ascertain formal approaches / systems which companies use to evaluate their IC. It found that, just over one third of respondents do not use a formal system at all. But the most popular method was the balance scorecard, which was being used by 28% of the sample companies. Although the remaining companies listed a variety of methods such as key performance indicator systems, employee opinion surveys and value chain analysis, follow up interviews revealed that they were general measurement

system that focused on one particular matter, such as recruitment or procurement and they were not covering all aspects of IC. Apart from those using the balance score card, only one organization seemed to be using a comprehensive measurement system, which it called a business benefit score card. Further more author found that, although nearly all of the sample companies were familiar with the term IC, only a tiny proportion of them work with it.

Intellectual Capital and its Impact

Measuring Value of Intellectual Capital in Sri Lankan Context

From the analysis made under the preceding section, it was found that all five leading domestic commercial banks operates at Sri Lanka's stock market possess certain amount of intellectual capital (see Table 3). However, the worth of the companies bears little relation to the value of tangible assets, as it can be clearly seen even though both the Sampath Bank and Seylan Bank are having relatively similar amount of tangible assets (approximately Rs 2.8 million), Sampath Bank's market value is two times larger than it's tangible worth, while Seylan Bank's market value is 2% more than it's tangible worth. Even though the amount of tangible assets possessed by NDB Bank is approximately 27% of Seylan Bank's tangible asset value. Commercial Bank and Hatton National Bank are having the highest net asset value out of all five banks, however Sampath Bank's IC

value is higher, when compared with both the companies.

Thus it can be generalized the gap between the market value and net asset value represent the value of intellectual capital or the intangible assets of the banks, which does not move in relation with the tangible assets of the banks. Therefore, the above market to book value ration can be used as a comparative indicator of measuring IC value in Sri Lankan context.

Positive Relationship between the Market Value and the Intellectual Capital Value

According to the Table 3 it can be clearly identified that there is a positive relationship between the market value and the IC value of the firm. ie - When the market value of Sampath Bank increases, it leads to an increase in the IC and vice versa.

Therefore, the value of IC calculated based on the market to book value method, consist of both the indigenous factors as well as exogenous factors that can influence the market value of a firm, such as deregulating, supply conditions and general market nervousness, as well as the various other types of information that determine investors perception of the income generating potential of the firm, such as industrial policies in foreign markets, media and political stability, economic stability, rumour etc. However, the value of IC is merely expected to determine by the indigenous factors relating to each individual

Table 3: Measuring Value of Intellectual Capital

Name of the Company	Market Value[3] (Rs. 000)	Net asset Value[4] (Rs. 000)	Value of IC[5] (Rs. 000)	IC value as a percentage of MV (%)
Sampath Bank	4,207,066	2,886,357	1,320,709	31
Commercial Bank	8,662,820	7,754,657	908,163	10
Hatton National Bank	7,112,875	6,235,063	877,812	12
NDB Bank	1,437,141	771,069	666,072	46
Seylan Bank	2,896,740	2,847,046	49,694	2

[3] Number of shares * Market value per share at 25th June 2003
[4] Net assets as at 31st March 2003
[5] Deference between Net assets and Market value

company. For example, Investment in new information technology, knowledge of workers, superior customer service etc., which will give an accurate value on the intangible assets of the company.

In the recent past the "Bull" run at Colombo Stock Exchange, led to an increase in stock prices through out the period of 20th June to 26th June 2003. It was mainly due to the success of Tokyo Donor Conference, LTTE's willingness to arrive at a political solution through negotiated settlement and prevailing low interest rates etc. During this period, the market value of most of the companies (specially banks) operate in Sri Lanka's stock market got increased, not because the investor see the amount of IC owned by each individual company increases, but investor feel safety and increase in performance in overall market (see Table 4). Therefore the market value calculated based on current stock prices will place an inaccurate value on the IC of the firm, which is actually not there. Thus, to avoid or minimize this limitation in this method, the current market price calculated based on dividend growth model can be used to determine the value of the firm and there by we can eliminate the effect of unnecessary fluctuations in the market value due to exogenous factors on IC value.

Movements in Market value and IC value of Sampath Bank according to the movements in All Share Index of Colombo Stock Exchange (CSE) over the period of from 9th May to 26th June 2003 as shown below.

Table 4: Relationship between Market value and IC value

Date	All Share Index	Market value	I C value
9th May	852.3	3,254,940	368.583
22nd May	845.3	3,188,513	302.156
30th May	858.7	3,210,656	324.299
6th June	903.1	3,232,798	346.441
13th June	934.7	3,542,792	656.435
20th June	995.0	3,996,712	1,110.355
26th June	1100.0	4,172,852	1,287.495

Dividend Growth Model and Value of IC

$$P_0 = \frac{D_0(1+g)}{(K-g)}$$

Where; P_0 - Current stock price.
D_0 - Dividend paid in the current year.
g - Expected growth rate.
k - Cost of equity or expected rate of return.

Use of the above dividend growth (DG) model for the purpose of determine current intrinsic price of a share of Sampath Bank as at 25th June 2003, resulted with an IC value of Rs. 656 million which is almost 50% less when compared with the IC value of Rs. 1320 million calculated based on the previous market to book value method. (ie-Use of current stock market prices to determine the market value of shares)

The value of IC calculated based on the above two methods are significantly different from one another. And it may be due to significant fluctuations in share prices at the stock market due to exogenous factors, which won't have effect, when the share prices are calculated using the dividend growth model. Therefore, elements of price increases or decreases due to exogenous factors won't include in the share price calculated based on divided growth model.

Use of DG model to measure the intrinsic value of a share, will lead to a better valuation of IC, as it takes into account indigenous factors such as the future potential earnings, growth rate of earnings of the company and expected return by the investors, where all of them are important factors which an investor should take into consideration, when deciding in which company to invest. At the same time the above factors are effected by human capital, quality of customer service, information technology etc. Therefore it will give a more realistic valuation of the company's IC. However, still it is alarming from an accounting perspective that a change in accounting rules would produce a different intellectual capital values, even though current stock price was calculated based on the dividend growth model instead of getting it

directly from the stock market information, as a result of using net asset value for the purpose of valuing IC. For example, if the items that could be capitalized in the balance sheet changed or if the depreciation of fixed asset were accelerated, will lead to different IC value which indicates in both methods since the IC is a function of accounting rules which used to construct the book value, and this will limit the usage of the two methods as a comparative indicators of the firms within the same industry, which can be identified as a limitation common to both the market to book value method as well as, suggested intrinsic value to book value method.

Reporting of Intellectual Capital in Sri Lanka

According to the intellectual capital statement made under the previous section, it can be clearly seen that there is no set model for this statement, and it can be adopted according to the characteristics of the individual firm. Sampath Bank is one of the leading banks in Sri Lanka, which is having a best IT system and a very competent, well trained staff, therefore more weight is given for the information about IT and human resource in the IC statement.

As it can be clearly seen that the IC statement of Sampath Bank do not provide a bottom line indicator of the value of IC, but it justify the value of IC calculated base under any other method. However, IC statements disclose the aspects of the bank knowledge management activities and will offer a means to check and monitor whether knowledge management programs in the bank are actually being pursued. The given IC statement is a story of how the bank implements its competence strategies. Therefore providing IC statement along with the financial statement of a company in Sri Lanka, will enable the potential investor to determine the value of IC by referring to the given financial figures and current stock market prices and then to justify, whether it is reasonable to pay an extra amount of money to buy shares of respective companies. This will provide a clear understanding for investors to decide at what price they should buy the shares and they will be able to ensure about the future growth potential of the company and safety of their investment.

Sri Lankan companies should provide a separate IC statement along with their financial statement, as a mean facilitating the potential investor to calculate and compare IC values, competencies, growth potential of each different companies and select the most profitable company to invest.

The calculated IC value of the Sampath Bank as at 25th June 2003, was Rs. 1321 million and since it was the highest IC value of the sample companies the IC reporting statement shown in 4.1 (and its sub sections) has been developed based on the related data of Sampath Bank.

Intellectual Capital Statement of Sampath Bank as at 25th June 2003
Human Capital

Table 5: Staff strength as at 25th June 2003

Corporate Management	
Managing Director	1
Senior Deputy General Manager	1
Deputy General Managers	2
Assistant General Managers	6
Senior Managers	14
Executives	
Managers	14
Senior Executives.	49
Executive Grade i	56
Executive Grade ii	62
Staff Officers	86
Staff Assistants	
Staff Assistants i.	273
Staff Assistants ii.	549
Trainee Staff Assistants	156
Secretaries	
Senior Executive secretaries	8
Executive Secretaries	33
Senior Secretaries	29
Secretaries	73
Others	
Customer Relations Officers	11
Cash Floating Officers	11
Drivers	12
Electricians	7
Operational Assistants	6

Formal Educational Qualifications of the Staff:

a. Graduates + Professionally qualified   150
b. Professionals   1434
c. Graduates   150

Effect Measures of Human Capital

Absence due to sickness	2.5days
Staff turnover	4.5
	(Rs' 000)
Gross income per employee	3,700
Profit per employee (before tax)	358
Asset per employee	29,283
Personnel Cost per employee	509
Financial value added by an employee	1,024

Training & Education

Training programmes are carried out every day.
Overseas training.

E-Learning:

- This is implemented for the first time in the banking industry in Sri Lanka.

- This facilitate the staff to be trained on line, with no necessity to visit the head office training centre and hence cause minimum disruption for day-to-day customer services at branches.

- This comprises of:
  * Highly interactive training sessions.
  * Tracking training hours of staff members.
  * Online evaluation.
  * Post training tracking & even the facility to receive the feed back from the learner back to the training centre.

Number of employees with personal development plan is 205 employees. (ie-14 % of total no: of employees).

Number of training hours per employees: Minimum 45 hours.

Expenses for training & education - Rs. 27 million

Share of employees with appraisal interviews 100%.

Expenditure on employee welfare - Rs. 8.8 million.

Employee Ownership

20% of the share capital is now being held by employee funds, which will improve employee

Table 6 Service Analysis of the Staff as at 25ᵗʰ June 2003

No. of years	Corporate Mgt.	Executives	Staff Officers	Staff Asst.	Trainee SA	Secretaries	Others
10-16 years	24	167	–	–	–	53	23
5-9 years	14	–	86	273	–	68	11
2-4 years	–	–	–	549	86	12	8
0-1 years	–	–	–	–	70	10	5
	38	167	86	822	156	143	47

Table 7 Age Analysis of the Staff

Age group	Corporate Mgt.	Executives	Staff Officers	Staff Asst.	Trainee SA	Secretaries	Others
Above 56	2	–	–	–	–	–	–
46-55	22	–	–	–	–	–	–
36-45	14	111	86	–	–	41	12
26-35	–	56	–	822	–	65	27
18-25	–	–	–	–	156	37	8
	38	167	86	822	156	143	47

commitment and motivation significantly, as they will enjoy profit sharing.

Customer Capital

Number of Customers	700,000
Number of customers per employee	477
Number of branches	53
Number of Auto mated teller machines (ATMs) Sampath Banks	70
ATM's of Bank of Ceylon	80
(BOC ATM's are linked with Sampath Bank ATM system under Memorandum of Understanding)	
Marketing expenses (Rs' 000)	94,000
Marketing expenses per customer (Rs.)	134
Marketing cost per turnover(Rs.)	0.017

Effect Measures of Customer Capital

Company reputation 16 years	Growth of advances 7.5%
No. of customers lost 300,000	Growth of income 3.1%
Growth of deposits 13.9%	Rate of bad debts 16%

Organisational Capital

Information Technology and Electronic Data Processing Division

No. of employees in the division	60

PCs per employee- one
PC for two employees

Portable PCs per employee -
four laptops in IT department

Number of internal IT customers	1386
Number of external IT customers	5000
Total IT customers	6386

This division provide support services to 53 branches, saving and pawning units and departments of the Head Office.

This division maintains and administer over 30 servers.

Expansion and Network

44 online branches.

9 online saving and pawning units.

Network of 70 ATMS & over 1000 POS machines that are linked to the global Maestro & cirrus Network.

Introduction of concept centres in urban areas and provincial capital;

- Provide internet banking.
- Phone banking.
- Self service facilities on a 24 hour basis.

Bank's current IT system is capable of handling it's IT requirements for the next two years.

Investment in IT system during the year 2002. (Rs. 000) Rs. 100391

Investment in IT as a % of total investments in fixed assets during the year 2002 is 47%.

Effect Measures of Organizational Capital

Operating expenses	Rs.1,682.000
Operating expenses per turnover	Rs. 0.31
Operating expenses per asset	Rs. 0.04

Findings and Conclusions

This study has stepped into measure the IC of five leading commercial banks in Sri Lanka and presenting a statement of intellectual capital of the bank with the highest IC value as a mean of justifying the calculated value of IC. The main findings and conclusions drawn there of can be cited briefly as below;

All the companies in the sample have a positive IC value, which bears little relation with the tangible worth of the company. Among them Sampath Bank which is always being the initiator in introducing the state of the art technology in banking sector is having the highest IC value among the five commercial banks. There is a positive relationship between the movement in the market value and the IC value of Sampath bank.

Stock market in Sri Lanka is not in a stable position and highly fluctuates directly due to exogenous factors. Therefore, in such an unstable market condition, use of broad comparative indicators such as market value

to book value is less important, as there is a positive relationship between market value and IC value of the company. However, as result of the effect of exogenous factors other than factors relating to the individual company the calculated IC value may not be represented the accurate IC value. Thus, instead of using market value, which is calculated based on current stock price prevail in the market, it is better to use the value of a share calculated based on Gordan's dividend growth model to value the company and there by arrive at a more accurate IC value, by comparing it with the book value of the company.

Although, the IC is still function of accounting rules and it does not provide a bottom line indicator of the value of IC, it would be able to justify the value of IC calculated based on any other method. Therefore, IC statement along with a firm's financial statement will enable the potential investors to take their investment decision more accurately. It will also disclose the aspects of its knowledge management activities and the effectiveness of such knowledge management activities to its existing and potential shareholders. Thus, the concept of measurement and reporting of can be accommodate with existing financial statements to communicate better information to enrich economic and management decision in future.

Finally, measuring and reporting framework for IC developed by western countries can be applied in Sri Lankan with required adjustments based on the stakeholders' prospective and availability of information. Thus, further research is required to determine stakeholders' specific information requirements in Sri Lankan context. However, the suggested method will provide a better comparative indicator as it had been developed from the investors' perspective.

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