A Scope of Implementation Intellectual Capital Accounting and Supply Chain Management in Telecommunication Companies: Evidence from Iraq

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***Abstract*- Research positioned in the intersection between management accounting and supply chain management is increasing. So, the core purpose of this research study is to identify the range of harmonization between theoretical concepts of Intellectual Capital (IC) around the three aspects and empirical practices required from international and local accounting standards (IAS).**

The current research follows the positivist paradigm and quantitative in nature. Secondary data was used to measure the compatibility between the theoretical concepts of intellectual capital and the items that were accepted in international accounting standards across ratios, and to test these variables with TIST between the average actual practices of companies and the objective value (theoretical concepts of intellectual capital). The items will later include the items in the International Accounting Standards and the actual practices of telecommunications companies in Iraq.

The results show that there are significant differences between the theoretical concepts of IC in International Accounting and Reporting Standards - IAS 38. The areas where there is no match related to items that do not meet the condition of the concept of assets or do not achieve the rules of proof of accounting or measured to be reliable. The results were derived from the analysis of the financial statements of Zain and Asia Cell and its annual reports, including analytical tables and explanatory notes.

The confidentiality of some data related to the work of companies is one of the difficulties of conducting such research, as some of these data are linked to the competitiveness of companies and tax matters, as well as the lack of companies operating in this sector in Iraq.

This research is the first modest attempt on social environment of Iraqi knowledge economy, which represents telecommunications companies one of its components and associated components of intellectual capital. This study makes a contribution to the literature by conceptualizing the elements of management accounting in a context of the supply chain and by relating it to supply chain strategy and supply chain relationship structure

***Keywords*-** *Intellectual Capital, IFRS, Structural Capital, Intangible assets*

1. Introduction

The implementation of management accounting information is related to these key managerial concerns in a supply chain. The advent of the modern era and adoption of novel practices raised the interest in intellectual capital significantly due to a direct correlation between IT and the performance of organizations [1], [2],[3].Intellectual capital has become the core factor in decision making and strategizing factors of production to attain the competitive advantage by creating the distinctive value for the organization to survive in the competitive world. [4] Considered knowledge that creates, originates, converts and reflects value is the most valuable asset for an entity.

Three decades earlier, the accounting standards were related to intellectual capital. [5],[6] viewed the intangible capital, and existing tangibles along-with the research and development expenditures for shop

advertisement has been accounted for. The measurement of the intellectual capital of the three components of human capital, structured capital and customer capital is subject to accounting measurability, which is determined by the extent to which it conforms to the conceptual framework of accounting; in particular, the standard for financial statement elements and the measurement method that is reflected in monetary measurement, and then the reliability of this measurement [7]. These limits have been removed from international accounting standards, particularly the IAS 38 Intangible Assets (Recognition of Intangible Assets).

Iraq's economy was characterized by agriculture during the first half of the last century, followed by light industry in the second half of the year. The entry of service companies, especially telecommunication companies began to grow significantly after 2003. With the establishment of the Board of accounting and control standards in Iraq in the nineties of the last century, which issued a number of standards, including the rule of accounting No. 2 (R & D), and later revised this rule to be called (the base of intangible assets).

2. Research Problem

International and domestic accounting standards have allowed for broad personal judgments in the field of measurement and disclosure that are included in intellectual capital, and have given extensive flexibility to companies to use multiple terms. Therefore, this research study attempts to identify the areas of compatibility between theoretical concepts of intellectual capital the items included in IAS 38, and then the reality of practices and disclosures in telecommunications companies in Iraq.

Literature Review

Intellectual capital (IC) has versatile and distinctive approaches as it stems from accounting and financial viewpoint. Many researchers attempted to answer questions again raised by Sharabali and Shawqi

1. What are the factors raising the firm's worth more than their book value?

2. What includes under umbrella of intangible asset?

The previous researches can be segregated into two arrays. One side examines the effect of IC on firm's performance, and the second trend studied financial reporting and recording of IC.

[8] Determined the relationship between the level Intellectual capital efficiency in terms of Human capital, capital employed and structural capital with performance in Malaysia. The results showed the relationship between two aforementioned variables. [9] Studied and analyzed the annual reports of ten thousand Canadian companies. A list of IC related terms was searched within the annual reports yielding thirty nine terms; a substantial small number of instances in which IC disclosure took place. Only seven terms were disclosed from total set of 39 IC terms. Most IC terms were disclosed only once in each annual report. An IC has significantly strong impact on the future earnings derivers, but is largely of the future earnings, but is largely ignored in financial reporting.

[10] Examined the three elements of IC (Human Capital, Customer Capital, and Innovation Capital) and their relationship with business performance in the Athens Stock Exchange. The results of this study revealed that human capital is important and has positive relationship with customer capital in service and non-service industries [11]. Sharabali and Shawqi studied and tested the relationship between IC and business performance with in the pharmaceutical sector of Jordan and the results revealed the strongly positive relationship among them. This not only occurs at industrial or domestic but also in national contexts.

[12] Provided a definition for intangibles derived from the resource based view (RBV) of the firm for usage in academic research and practical applications. In this paper various definitions for intangibles are included and tested against the RBV framework. This paper is intended to be first step in triggering the discussion. Therefore, the researchers and practitioners refer to the same concepts when investigating the measurement, management, and disclosure of intangibles. Łukasz determined types of intangible assets are identified by polish companies

and analyzed the intangibles that help in determining the true value of the company.

The research contributes to develop the understanding of the phenomenon of intangible assets and enhance the investment decision making. This research encircles around the Iraqi telecommunication companies practices to disclosure IC and the extent to which these practices converge with IFRS; especially the Iraqi companies are in transitional move to adopt IFRS in the near future.

3. Intellectual Capital (IC) Concept

The researchers dealt with the concept of intellectual capital in several directions: the first direction can be directed towards the creation of value where he sees. [13], Sharabali and Shawqi highlighted that the intellectual capital as the intellectual material that has been formalized, captured, and leveraged to create wealth by producing a higher-valued asset. [14] Has viewed intellectual capital as an asset, represents all the stock of what matters to the creation of enterprise value of an enterprise that is not represented on its traditional balance sheet as monetary or physical assets. Additionally, IC is the sum of everything everybody in the company knows that gives a competitive edge in the market place [8].

Bondgar defined IC as knowledge that may be converted into value; it may be considered as hidden or invisible assets, which considered as hidden or invisible assets, which drive stakeholders, value addition in company and proceed to competitive edge; others consider IC as an intangible assets; therefore, the non-physical value drivers in the organization that represent claims to future benefits [5].

IC is used interchangeably with intangible assets. While the later term refers to assets that allow accounting standards to be recognized in the Statement of financial position of organization. Some connect the concept of knowledge with knowledge [14] as the final product of knowledge transformation process or knowledge that has been converted into IC. [15] Argued that IC Identified intangible assets addition purchased good will.

In the same frame [15], [16] adopted the Resource Based View (RBV) and uses the term synonymously, claiming that they refer essentially to the same thing anon-physical claim to the future benefits. They set properties for intellectual capital components that are capable of generating returns that are more than the cost of the resources immobile or should not be obtained from non-substitutable markets and vary in distribution between companies, and that this variation is constant over time[17].

4. Intellectual Capital Components (Elements)

According to [13] IC can't be detached from other kinds or categories of capital. Several scholars allocated IC into four categories:

- **Human Capital -** represents the individual Knowledge asset of a company's employees.
- **Customer Capital -**the Knowledge that is developed to customer- supplier relationship when conducting business.
- **Structural Capital** - contains all the non-human storehouses of knowledge in organizations, which included the data base organizational charts, process manuals etc.
- **Innovation Capital -**the ability build on previous knowledge generate new knowledge.

Components of Intellectual capital

Figure1. Categories of Intellectual Capital [18]

Figure2. Kinds of Structural Capital

5. Intellectual Capital Measurement & Disclosure

[9] Said that there are number of reasons why decision makers includes IC while disclosure of financial reports. It includes:

1. The pursuit of quantification of intangible assets.

2. The timelines of human behavior as a proxy of performance.

3. Defense against the distortion of GAAP related financial conclusions.

There are several models to measure and evaluate the intellectual capital, both of which have been developed by [13] designed Balanced Scorecard including nonfinancial measures in four directions:

1. Internal process measures

2. Customer measures

3. Financial measures

4. Learning and Growth measures

The scale and another measure is called performance prism, which is measured by Grandfield School in collaboration with Accenture Consultancy. The

flexibility in this model allows application in any organization, and it focuses on intangible performance. The focus on intangible performance drivers makes the framework useful for companies attempting to measure their IC. Skandia navigator, developed in 1994 and known for its application in Swedish companies, can be considered. It reflects four key dimensions of its business:

1. Financial focus

2. Customer focus

3. Process focus

4. Renewal and development focus

At the heart of these is human focus, which drives the whole model [18]. [9], [19]. Reviewed the major issues of IC disclosure and summarized them as follows:

1. The information asymmetry gap
2. Long term information.
3. Standards and comparability
4. Value creation models

Epstein and Jermakouia said that the IAS 38 explains the concept of class of intangible assets as a grouping of assets of similar nature and in an entity's operations. Examples of intangible assets that could be reported as separate classes are:

- Brand names
- Licenses & franchises
- Mastheads and publishing tittles
- Intangible, assets under development, etc.

6. Methodology

The current study follows the quantitative paradigm and explanatory approach has been followed. Data has been analyzed through descriptive statistics and content analysis. Data is collected from the published financial statements of targeted population. The understudy area for investigating is the telecommunication industry from which the two main companies are taken for current research study. The intangible assets were taken from the financial statements of the two sample companies and for four years (2014-2017) Formal by the two sample study companies. The focus of the test of intangible assets in the telecommunications sector in the Iraqi environment, and when the disclosure of companies to be studied shows that there are three companies operating in this sector, two of them are joint stock companies and traded shares in the Iraqi market for securities, namely (Asia-Cell and Zain Iraq). The third company was excluded from the study because it did not disclose its financial statements officially in the stock exchange as a non-contributing company [20]. The most important indicators of the companies surveyed in table - 1

Table1. Sampling Subjects Detail

No. of companies	No. of industries covered	Total revenue (mil IQD)	Total assets(mil IQD)	Total capitalization (mil IQD)
2	1	2718020215	6659518292	2139782653

*The financial statements of the two companies were approved for 2017

The two companies were considered the largest companies controlling the communications sector in The Iraqi environment and represented by market share in Fig – 3.

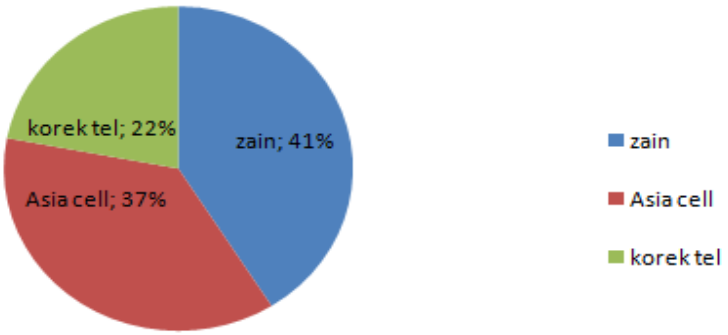

Figure3. Market share

It is clear from the above figure that Zain Iraq has the largest market share of 41%, followed by Asia-Cell and owns a market share of 37%, the two samples chosen for the study, while Cork has the lowest market share of 22% and was excluded from the study for not disclose its financial statements Because they are not listed on the stock exchange.

7. Findings & Results

Management accounting in the SC is designed to produce information for control and decision making of processes and activities optimizing activity in and between firms in dyads, chains, value streams and networks. The study was carried out in two stages. In the first stage, the values of the total assets and the total intangibles were determined for all the years studied (2014-2017). The value of the intangible assets was also calculated as the total assets in Table - 2: Intangible assets for all years studied (2014-2017). The value of intangible assets was also calculated as total assets as shown in Table – 2.

Table2. Value of the intangible assets (2014-2017)

Particulars	2014	2015	2016	2017	Mean
Intangible assets	3420	3170	2888	2587	**3016**
Total assets	7380	7554	7101	6659	**7174**
Intangible to tangible %	0.863	0.723	0.685	0.635	**0.725**
Share of intangible asset in total assets	0.463	0.419	0.406	0.388	**0.419**

From the analysis of the data to the above table, the total value of the two companies' IQD is estimated at IQD 3420 in 2014 and decreased to IQD mil2587 in 2017, as shown by the ratio of intangible assets to total assets of 0.463 in 2014 and 0.388 in 2017 The ratio of intangible assets to tangible assets fluctuated to 0.863 in 2014 and declined to 0.635 in 2017.

The share of intangible assets to total assets was decreasing at a high of 0.463 in 2014 and began to decline gradually to reach 0.388 in 2017. The arithmetic mean was 0.419. The second phase of the study examined the disclosures about the intangible assets of the two companies. The study sample is detailed according to the type of intangible asset. The percentages of the most exposed intangible assets were analyzed as in Table – 3.

The analysis of the financial statements of ASIA Cell revealed that the companies followed the consolidated accounting system and the historical cost basis in the preparation of their financial statements and accounts in general. A separate account was included in the deferred income expenses which included goodwill, license fees, and third-generation license fees. Deferred charges have been disclosed in the statement of financial position as well as details in the analytical statements. The notes to the financial statements do not indicate how accounting for Items included in deferred or deferred income tax expense are not included in IAS 38 or

other standards or are reconciled with IFRS 2 Accounting for Intangible Assets.

The analysis of the financial statements of Zain Iraq, which is one of the branches of Zain Kuwait Holding Company, and when reviewing the annual report of the company and the financial statements disclosed, it shows that the intellectual capital is accounted for as intangible assets (as a separate paragraph in the balance sheet) It is stated in the notes to the financial statements that the non-monetary assets identified in the financial statements that are acquired in the business combination and have expected future benefits are considered intangible assets and include (license fees for telecommunications, contracts and customer relations.

In terms of the operations of acquired networks whose operations are subject to specific licenses, the amortization period is determined as the basis of the license period and terms of renewal. The license fees of the mobile telecommunications system shall be amortized in a fixed rate manner over the lifetime of the license and amortization of computer programs and rights to exploit computer programs in a way that provides a five-year fixed rate of rights to exploit computer programs over the period of exploitation of operating leases.

Customer contracts and relationships are amortized over a period of 4-5 years. The cost of the phones sold to customers is accounted for by the provision of service agreements with the equipment at subscriber costs and is recognized as intangible assets and amortized over the period of the contract. The non-reversible usage right is that it is entitled to use part of the land or sea transmission capacity and is granted for a specified period.

The annual report on intellectual capital was unveiled in a series of programs that would support intellectual property and the company's staff including: OCSAR Program, Gifted Programs Initiative, Training Programs, and Accountancy Integration

Table3. Analysis of the results of the application of telecommunications companies to intellectual capital

Ideal Measure(s) of IC concepts	**Scale**	**IAS &IFRS**	**IT companies**		**Disclosure & presentation methods**	
			Zain company	**Asiacell company**	**Zain company**	**Asiacell company**
Human Capital	6	3	2	2		
Knowledge & Skills	1	0	0	0	-	-
Education & Training	1	1	1	1	C	C
Work-relate Knowledge	1	1	0	0	-	-
Work-related competencies	1	1	0	0	-	-
Proactive &reactive abilities	1	0	0	0	-	-
Communicates & practice	1	0	1	1	A	A
Intellectual Property	6	4	3	3		
Patents	1	1	1	1	A	A
Copyrights	1	1	0	0	-	-
Design rights	1	1	1	1	C	C
Trade secrets	1	0	0	0	-	-
Trademark	1	1	1	1	B	B
Service marks	1	0	0	0	-	-
Infrastructure Asset	5	3	3	2		
Management philosophy	1	0	0	0	-	-
Management processes	1	1	1	1	C	c
Corporate culture	1	0	0	0	-	-
Information systems	1	1	1	1	A	A
Financial relations	1	1	1	0	B	-
Customer Capital	7	5	4	2		
Customer relations	1	1	1	0	C	-
Customer loyalty	1	0	0	0	-	-
Distribution channels	1	1	1	1	C	C

Favorable contracts	1	1	1	0	C	-
Franchising agreements	1	1	1	1	B	B
Business collaboration	1	1	0	0	-	-
Repeat business	1	0	0	0	-	-
Total scores	24	15	12	9		

Table – 3 shows the scope of application of intellectual capital. The theoretical concepts were considered the ideal measure of money. The items were divided into four main components. Each component included a set of items. Each item was given a score of 1 and a total of 24. The items in IAS. To measure the extent to which the International Accounting Standard approaches the ideal measure of intellectual capital and to give each item in Standard 1 and the item that did not meet the criterion of 0 and the results showed that the International Accounting Standards are approaching the ideal standard of capital by (24/15) 62.5%.

In the final step, the items disclosed by the Iraqi telecommunication companies on intellectual capital have been identified in comparison to both the Standard and IAS 38, whether in their basic financial statements, analytical tables, and explanatory notes, also give the item applied 1 degree and not applied 0 degrees. The results show that Zain has applied 80% of the international accounting standards, 50% of the ideal standard, in its application of 60% of the international accounting standards and 37.5% of the ideal scale. As for the four main axes, the following figure shows the degree of approach and distance between them and international accounting standards and the ideal scale.

7.1. Measuring compliance by adopting the theoretical concepts of capital

In terms of scale, we consider the four main variables of the four axes of the scheme. Figure - 4 Zain was better than Asiacell in the field of customer capital, infrastructure asset and the two companies in the fields of human capital and intellectual property.

Figure – 4:

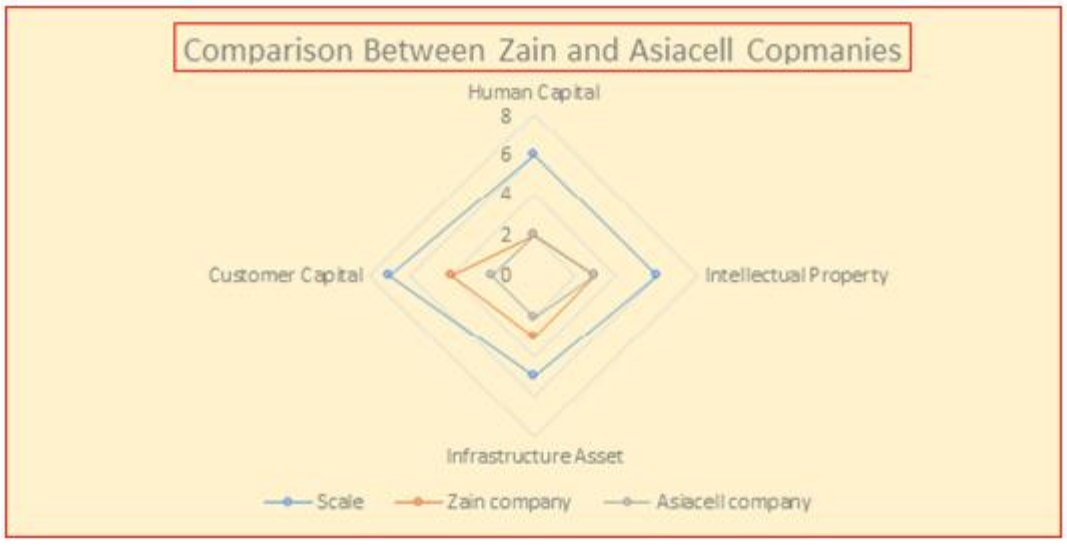

Figure4a. Comparison between Zain and Asia Cell Companies

7.2. Comparing compliance with international accounting and reporting standards

By adopting IAS & IFRS as standard or basic values for comparison, we note that in this diagram, the four main variables represent the four axes of the scheme, from which we note that Zain was better than Asia cell in the field of customer capital, infrastructure asset and the two companies in the fields of human capital and intellectual property

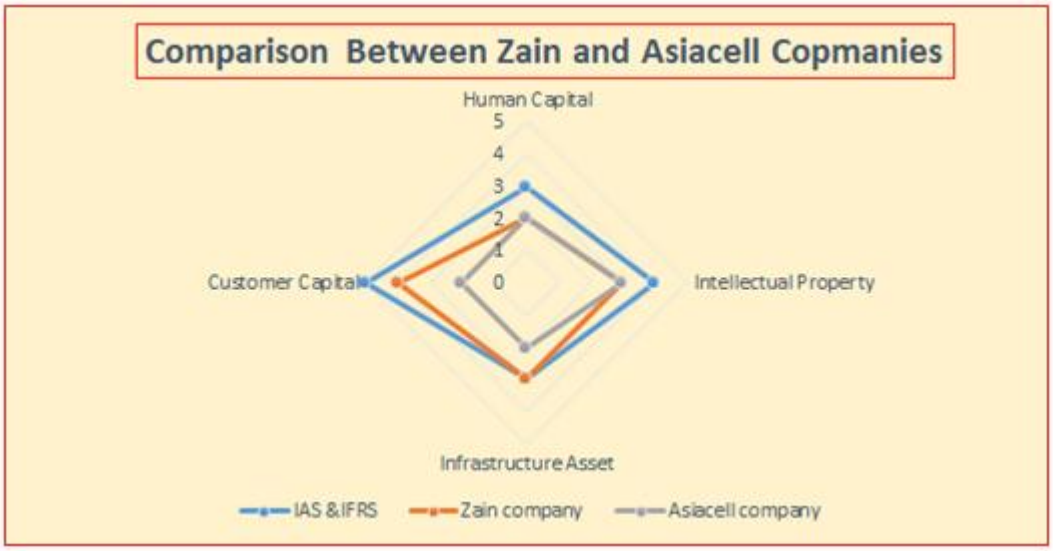

Figure 4b. Comparison between Zain and Asia Cell Companies

The difference between the objective value and the mean measurements of the two companies was

Table 4a.T Statistic Testing

One-Sample Test			
	Test Value = 24		
	T	df	Sig. (2-tailed)
Zain	-51.439	3	.000
Asia Cell	-87.000	3	.000

The difference between the objective value and the average measurements of the two companies was significant by means of a T-Test between the average of the responses and the objective value (15) of IAS & IFRS.

Significant by means of a T-Test between the average practice and the objective value of the scale (24).

Table4b. T Statistic Testing

One-Sample Test			
	Test Value = 15		
	t	df	Sig. (2-tailed)
Zain	-29.394	3	.000
Asia Cell	-51.000	3	.000

8. Conclusion

The present study sheds light on the theoretical concepts of intellectual capital, its components, measurement models, and the accounting practices and the system attempts to reflect the afore-mentioned concept through international financial accounting and reporting standards (IFRS), and the

existence of different terms between the intellectual and accounting aspects. The Iraqi environment for its intangible assets, and the study of the companies controlling the telecommunication sector.

The details and availability of financial statements from the Stock Exchange only for a limited period from FY2014 to FY2017 is the core reason for a limited scope of research. This restriction has been imposed by the accounting and tax rules in Iraq and the competitive environment in the telecom sector, which forces corporate giants and private companies to maintain the secrecy of the data and they don't allow them to disclose except some necessary data. This practice leads that the process of the disclosure will affect the decisions of the investors and restricts the strategic partners to see the actual current situation. This leads to burden of responsibility on the shareholders to put more attention towards the process of disclosure of intangible assets because and make situation transparent. It will lead in the future to study the impact on future cash flows or on revenue and revenue or on the assessment, the administration's performance and other variables. Managerial recommendations for investment in supply chain capital are included, as are future directions for research in the area of supply chain networks.

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