

The Role of Accounting Measurement and Disclosure of Intellectual Capital in Rationalising Managerial Decisions

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The accounting treatments for the measurement and disclosure of problems of intellectual capital controlled by contemporary economic units are considered the most important issues facing accountants. This research aims to find the appropriate accounting treatments to measure intellectual capital. The financial data of the General Company for Electronic Industries has been selected as a sample for the research. Various financial and non-financial measures of intellectual capital were considered. The research reached some important conclusions: many of the elements and components of intellectual capital are not treated with specific accounting entries. Thus, they are estimated in a rough and non-objective way. Moreover, an important part of intellectual capital is human capital that is not measured and determined easily.

Key words: *Intellectual Capital, Intangible assets, Accounting Measurement, Accounting Disclosure, Financial Measures, Non-Financial Measures, Iraq.*

Introduction

The knowledge-based economy is characterised by an increasing demand for expertise and knowledge. Therefore, contemporary economic units face the challenges of transforming knowledge into financial gains using information technology. These units are also characterised by the fact that they combine physical tangible assets with intangible assets represented by human cognitive assets well as intellectual property assets to achieve growth and value creation. Human cognitive assets involve skills, knowledge and ideas stored in the human mind. Intellectual property assets include patents, trademarks copyrights etc. The subject of measuring such assets occupies a growing importance in the field of knowledge management and accounting. Hence, some economic units in the world have developed and

are still developing models to measure intellectual capital, such as Skandia, Microsoft and others.

Therefore, economic units today recognise that what they possess in knowledge and intellectual property represents their most important assets. These units are also trying hard to turn this recognition into better managerial decisions because of the difficulty of determining accounting and quantitative methods for the measurement and disclosure of human cognitive assets and intellectual property.

Since the need emerged clearly in accounting, it is necessary to change some of the concepts that reflect the new reliance of economic units on cognitive assets and intellectual property. The most important measures proposed in the world involve the difference between market value and the book value of a company. Some believe that the growing difference between the two values is the direct measure of cognitive assets and intellectual property.

General Framework of the Research

The Problem of the Research

The problem of the research is embodied in how to find appropriate accounting treatments to measure intellectual capital due to the problems and difficulties that accountants face regarding the lack of tangible physical entities and the high degree of uncertainty that surround future benefits. This represents the biggest challenge facing accounting in today's knowledge economy, while international and local accounting bodies and professional economic units have taken it upon themselves to deal with this new accounting concept.

Objectives of the Research

The research aims to achieve the following objectives:

- 1- Reviewing the theoretical and practical framework of measuring and disclosing intellectual capital.
- 2- Focusing on rooting, investing and considering human resources as cognitive assets for economic units.
- 3- Developing a number of conclusions and recommendations that represent a summary of the research in order to be a theoretical and practical guide for the subject of accounting treatments of cognitive assets and intellectual property.

The Importance of the Research

The importance of this research represents an academic attempt to shed light on intellectual capital and its increasing importance in economic units in particular and the economy in general. It also focuses on how these units can develop, maintain, measure and address intellectual capital in the light of prevailing theories, fundamentals as well as financial and

accounting procedures in a manner that provides management and other stakeholders with appropriate information.

Hypothesis of the Research

The research is based on one main hypothesis that states, ‘Accounting standards and measures can be applied to measure, determine and disclose the intellectual capital in the financial statements of the economic unit in a manner that helps management to rationalise their decisions.’ In this context, financial and non–financial measures are considered part of the solution.

Sample of the Research

The General Company for Electronic Industries was selected as a sample for the research. This company is one of the formations of the Iraqi Ministry of Industry and Minerals. The research was applied using the financial data for s 2016 and 2017.

Theoretical Framework of the Research

This part discusses the main concepts of intellectual capital and cognitive assets.

Concept of Intellectual Capital

The concept of intellectual capital is a modern concept that is still the focus of debate, controversy and disagreement among scholars and practitioners. There are those who believe that intellectual capital is the mental capacity representing the real wealth of economic units that are not tracked by accountants, as they track tangible assets such as cash and other assets (Westphalen, 1999, p. 2). Thus, intellectual capital is an intangible asset and its value exceeds the value of other assets appearing in a balance sheet. There are two types of intellectual capital: human and structural. The human element represents a source of innovation and renewal, while the structural element supports the human, such as information systems, market channels and customer relations (Edvinsson, 1997, p. 3). Furthermore, intangible assets have the potential to transform technology from research into manufactured goods with outstanding success. This is considered the main indicator of the long-term success of economic units in domestic and international markets (Endres, 1997, p. 161). Therefore, intellectual capital represents the mental resources that are formed, controlled and prepared to create assets of greater value for a company. Intellectual capital also consists of human cognitive assets and intellectual property (Daveport & Prusak, 1997, p. 2-4).

Intangible assets are considered the most important assets of an economic unit. They represent the inherent difference between book values and market values. This involves a wide range of things, such as intellectual property represented by patents, copyrights and cognitive assets

(Dzinkowski, 1999, p. 10). Moreover, intangible assets perform the process of creative and strategic development based on innovation and renewal. This is considered the key that leads to survival in the rapidly changing business environment (Hansen, 1999, p. 106).

It should be noted that there are many designations of intellectual capital, such as intangible capital and cognitive capital. All these designations are subtended by the concept of physical capital. Intangible assets subtend physical assets. The researchers differed in the classification of intellectual capital and determination of its components. The researchers presented three elements of the intellectual capital:

1- Human capital: Human capital possesses the mental capacity, skills and experience necessary to find practical solutions appropriate for the requirements, needs and desires of customers, because they are the source of innovation and renewal in economic units (Malackowski, 2002, p. 4).

2- Structural capital: This is embodied by an organisational economic unit's capabilities that regulate, meet market requirements, contribute to transference and enhance knowledge through intellectual and structural assets. These are assets are represented by information systems, patents, copyrights and the extent of the protection of a trademark. This represents the personality, value and identity of economic units. Furthermore, the value of a trademark represents the interest that an economic unit grants to customers. The value of a trademark increases when an economic unit invests in it. When the value rises, both the customer and the economic unit benefit (Nick, 2001, p. 44).

3- Customer capital: This represents the value of relationships between economic units and customers. It can be increased through increasing customer satisfaction, loyalty and the extent to which they are retained. This can be done when an economic unit gives attention to customers' suggestions, listens to their complaints and finds effective solutions for them as quickly as possible. On the other hand, customers can participate in economic units' businesses and transactions or establish strong cooperative relations (Koenig, 2000, 1).

Stewart points out that these three elements work together in a way that makes the detection of hidden or buried wealth and achievement valuable for economic units. Hence, there is a correlation between these three components. For example, structural capital can sharpen the mind of an engineer. Customer loyalty is when employees and systems in an economic unit become incapable of keeping pace with technological change and when employees do not feel responsible for their role in the economic unit, interact directly with customers and know the quality of knowledge and skills desired by customers. This reduces the value of intellectual capital. Hereby, it becomes useless unless the three components interact with each other (Stewart, 1999, p. 75).

Measuring Intellectual Capital Methods

There are a range of financial and non-financial methods that can be used to measure intellectual capital and its elements. These methods can be clarified as follows:

1- Exclusion Method

This method is used to evaluate intangible assets and measure the economic effects of knowledge. It is based on excluding expected income from financial assets and tangible assets from the previous and expected returns of knowledge in organisations. The discount rate on the average return after tax is applied to certain industries, such as manufacturing computer software in order to obtain intellectual capital. This method relies on the calculation of return on assets (ROA) that is calculated by dividing the earnings before tax by the tangible assets of an economic unit (Malackowski, 2002, p. 4).

2- Multiple Indicators Method

Edvinsson and Malone use a multi-indicator model to measure intellectual capital. This model contains 140 indicators related to intellectual capital. Presumably, sufficient aspects of intellectual capital necessary to understand this phenomenon can be obtained (Edvinsson & Malone, 1997, p. 1).

3- Cost Models Method

Cost models are widely used in accounting and management.

The use of an activity-based costing system to understand the extent of knowledge contributions in a company's productivity has some difficulties. Nevertheless, such a system can be used for this purpose. The cost models method assumes that to understand the value of knowledge, its cost has to be calculated. Stewart has another opinion where he stresses that there is no meaning regarding the correlation between the cost of acquiring knowledge and its value. The value of intellectual capital does not necessarily follow its acquirement cost. The investment model in human resources and Tobin's Q model are considered the best models for this method (Stewart, 1999, p. 75).

4- Descriptive Models Method

This method works to determine the features and characteristics of required performance by focusing on opinions and trends according to surveys. These are important in their indirect effect on the performance of knowledge processes and achievement of the results desired by relying on their own experience and the self-assessment of those in charge of a survey or authors of a model. Management knowledge evaluations and balanced scorecards are included in these descriptive models (Malharta, 2002, p. 32).

5- Focusing on Output Method

Some scholars in the field of knowledge management believe that it is difficult to develop direct and meaningful measures of intellectual assets. It is also believed that knowledge outputs can only be measured by relying on the assumption that the definition of knowledge is unspecific. It is concluded that knowledge is responsible for outputs without a specific common unit of output to be measured. Thus, only the effects of knowledge are measured. However, an identified unit of knowledge will facilitate predictions about the extent of use of intellectual assets and, at the same time, this will cause more specific complexities of determining how knowledge contributes to organisational performance (Miller, 1998, p. 4).

6- Knowledge Commensurate with Value Method

Some scholars may assume there is a direct relationship between knowledge and the value created by this knowledge. The proponents of this view suggest several methods of research aiming to track the conversion of knowledge to valuable outputs. Through this method, knowledge is not consumed when used in the creation of added value changes. For example, Microsoft has an estimated book value of about 20.3 billion dollars, while its market value amounts to 300-400 billion dollars. This represents the sufficient capacity of Microsoft and its use value of knowledge embodied within processes, technology and personnel staff. The models of this method include the market value model, book values, patent model and value estimation model (Koenig, 2000, p. 1).

Disclosure of Intellectual Capital

Accounting thought focuses on the importance of economic unit and its ability to disclose human resources and cognitive assets, which must be documented to strengthen financial positions in the competitive market. It focuses on the measurement of events by completing a chain of knowledge in preparation for storage and retrieval to extract underlying knowledge. This is reflected in the decisions taken in developing these strategies (Manasco, 2004, p. 16).

The main problem facing accountants when presenting intellectual capital and its components include human cognitive assets and intellectual property in the financial statements being the possibilities of work turnover. Individuals are not owned by economic units, although some economic units require their employees' to sign contracts that restrict their movement, such as sports clubs. In these cases, it becomes the right of economic units to buy, sell or swap individuals' contracts, but the uncertainty still exists (Mertins, et.al. 2001, p. 208).

In general, there are three methods that can be used to display the data of intellectual capital and its components. These are represented by human cognitive assets and intellectual human property in annual financial statements. They also represent the presentation within the annual reports of management, the presentation in supplementary published financial statements

and the presentation within published financial statements. The following is a clarification of these methods:

1- Disclosure in the Annual Report of Management

The annual report of management usually includes data on investment in human cognitive assets. These are represented by data of expenditure on these resources during the current fiscal year. For example, an airline company must announce its spending on training. This information will benefit investors and financial analysts in identifying management's interest in human resources development as an important factor in achieving long-term profitability. The report should also include information on business turnover both in terms of cost, rates or disclosure of information on financial statements and accounting policies. The annual report of management includes several paragraphs, the most important of which concerns data on the total number of employees in economic units. These are distributed according to administrative and technical levels; the total amounts spent on research and development; the evaluation of their realised and expected effects; the efforts exerted by an economic unit in the transfer, localisation and development of knowledge; and technological development and improvement of means and ways of using them (John, 2002, p. 112-113).

2- Presentation within a Supplementary List of Published Financial Statements

This is intended to display the information on investment in human cognitive assets in a form of initial financial statements supplemented to the annual financial statements audited by an external auditor. In this case, the report must state that these statements are not prepared according to the principles of traditional accounting. These statements are also not externally audited, and some of the economic units have applied this method. For example, in the R.G. Parry Company, for several years in the seventies it these lists remained enclosed within published financial statements. In the Abet Company, this method was also adopted. Its financial statements for 1971 contained the social budget, the social income statement and the investments in training workers. Nevertheless, the company's statements are viewed as a report on the extent to meet their social responsibilities rather than being a financial report presented to investors (Koenig, 2000, p. 1).

3- Presentation within Published Financial Statements

This method includes listings of the financial investments of an economic unit in cognitive assets and intellectual property within the published financial statements. Standard No. 142, issued by FASB regarding goodwill and other intangible assets, indicated a number of examples, including companies such as the Omega Company and the Theta Company. Their financial statements disclosed intellectual capital (cognitive assets of human and intellectual property) and considered them within the published financial statements. Furthermore, Standard No. 142 suggested that cognitive assets are treated as part of goodwill,

while intellectual property assets are included in the financial statements within the intangible assets.

Moreover, international accounting standard No. 38, related to intangible assets, concerns the disclosure of certain intellectual property assets as follows (John, 2002, p. 114):

- a- Useful ages or amortisation rates used.
- b- Amortisation methods used.
- c- The total recorded amount and accumulated amortisation at the beginning and end of a period.
- d- The income statement regarding the amortisation of intangible assets.

Paragraph 108, mentioned above, indicates that the categories of intangible assets (intellectual property) that must be disclosed are as follows (Endres, 1997, p. 12):

- a- Commercial names (Trademarks) and managerial data and publishing addresses.
- b- Computer programs, licenses and franchising rights.
- c- Copyrights, patents, industrial property rights, service and operating rights.
- d- Recipes, formulas fees and prototypes.

The researchers believe that this method is the most appropriate method in the presentation and disclosure of cognitive assets and intellectual property. The reason for this is that these assets, as we mentioned above, are intangible assets. Therefore, as stated in the accounting standards, they can be included within the category of intangible assets after tangible non-current assets. This is because of their relative importance, and the inclusion gives them necessary and important information for users of financial statements as well as in assessing the performance of an economic unit as a whole.

The Applied Part of the Research

Outline of the General Company Electronic Industries

The current research will be applied to the General Company for Electronic Industries using the data of 2016 and 2017. The company is one of the formations of the Iraqi Ministry of Industry and Minerals. It was established in 1977 and is specialised in the production of electrical appliances, household and industrial equipment and its accessories. The number of employees in the company amounted to 1500 employees and staff in 2016. In 2017, 200 persons were appointed, so the total amounted to 1700 employees and staff of whom 780 individuals have rare skills and experiences. The number of individuals who resigned were 16 in 2016 and 25 in 2017. The company is concerned with development and investment in its human assets, so it cares very much to develop the abilities of its employees. The company also

has a specialised R&D department comprising specialised engineering, technical staff and experts in the field of electronic appliances.

Measurement and Disclosure of Intellectual Capital in the General Company for Electronic Industries and Its Use in the Rationalisation of Managerial Decisions

A range of methods are used and applied in the General Company to measure its intellectual capital. The methods that can be used in this company are the exclusion method, multiple indicators method and cost models method. These methods can be clarified as follows:

1- Exclusion Method

This method includes a number of measures, which are as follows:

a- Return on Value Added

Value added is calculated by the difference between net sales and the cost of raw materials and other production costs. Return on added value is calculated according to the following equation:

Return on value added = net profit before interest and taxes ÷ value added

Value added of the company = Net of sales - Cost of production

Value added for 2016 = 65,000,000-25,000,000 = 40,000,000 million dinars

Value added for 2017 = 86,000,000-30,000,000 = 56,000,000 million dinars

Return on value added for 2016 = $\frac{35,918,745}{40,000,000} * 100\% = 90\%$

Return on value added for 2017 = $\frac{48,359,288}{56,000,000} * 100\% = 86\%$

This ratio indicates that the company achieved an operating profit for the total value added. If the ratio in 2017, amounting to 86%, is compared with the ratio of 2016, amounting to 90%, we find that the company maintained the level of its performance in achieving profits through the intellectual capital that it possesses.

b- Return on Intangible Assets

This ratio measures the productivity or profitability of the company's investment in its intangible assets:

Return on intangible assets = Net profit before interest and taxes ÷ Total intangible assets

Return on intangible assets for 2016 = $\frac{26,939,059}{64,878,745} * 100\% = 41.5\%$

Return on intangible assets for 2017 = $\frac{36,269,466}{76,111,288} * 100\% = 48\%$

This ratio indicates an improvement in the productivity of the company in 2017 when this ratio is compared with the ratio of the base year, 2016. This demonstrates the efficiency of the investment and operational management policy, resulting from the large amount of investment in intellectual capital. As can be seen in the calculations above, the company achieved a net profit by 48% of total intangible assets.

2- Multiple Indicators Method

This method includes a set of indicators:

a- Trademark Protection Expenses Ratio

This ratio measures the extent of attention to the protection of the trademark, establishes it in the minds of customers and protects it from fraud and deception. This ratio is calculated through the following equation:

Trademark protection expenses ratio = Advertising Expenses ÷ Total Marketing Expenses

$$\text{Trademark expenses ratio for 2016} = \frac{1,900,000}{4,500,000} * 100\% = 42\%$$

$$\text{Trademark expenses ratio for 2017} = \frac{2,285,000}{4,000,000} * 100\% = 57\%$$

This ratio indicates that the company's products are facing moderate demand because of alternative products in the market. This is what explains why the ratio of trademark expenses in 2017, amounting to 57%, exceeded the ratio of 2016, which was 42%. This ratio indicates the interest of the company in protecting its trademarks and maintaining them.

b- Patent Turnover Rate

This ratio is used to demonstrate the efficiency of the company and its management in the exploitation of its intangible assets to generate sales. This rate can be applied to the company through the following equation:

Patent turnover rate = Net sales ÷ Patent cost

$$\text{Patent turnover rate} = 86,000,000 \div 31,100,000 = 3 \text{ times}$$

This turnover rate indicates the interest of the research sample company to invest in patents, which have the ability to generate revenues estimated about three times, i.e., the ratio of each dinar invested in patents results in three dinars of sales.

c- R&D Expenditures Ratio

This ratio is used to identify the extent of interest in the company's research and development operations in order to enhance knowledge and ingrain it. This ratio is calculated using the following equation:

R&D expenditures ratio = R&D expenditures ÷ Total intangible assets

$$\text{R\&D expenditures ratio for 2016} = \frac{5,500,000}{64,878,745} * 100\% = 8\%$$

$$\text{R\&D expenditures ratio for 2017} = \frac{5,800,000}{76,111,288} * 100\% = 7\%$$

This ratio indicates that the General Electronic Industries Company attaches great importance to research and development, which shows that the ratio is maintained between 2016 and 2017 due to the presence of a specialised staff and research and development department in the company.

d- R&D Revenue Ratio

This ratio reflects the amount of revenue generated for the company from R&D. This ratio is calculated as follows:

R&D Revenues ratio = R&D Revenues ÷ Total Revenues

$$\text{R\&D revenue ratio for 2016} = \frac{15,000,000}{65,000,000} * 100\% = 23\%$$

$$\text{R\&D revenue ratio for 2017} = \frac{25,000,000}{86,000,000} * 100\% = 29\%$$

This ratio indicates a rise in investment in research and development in the company, reflected positively in its revenues, which amounted to 29% in 2017.

e- Information Technology Investment Expenditures Ratio

This ratio is used to identify the extent of the interest of the company to introduce technology in the field of production and administrative work. It is calculated by the following equation:

Technology investment expenditures ratio = Purchase Expenditures of technological machinery and appliances ÷ Total purchase of machinery and furniture

$$\text{Technology investment expenditures ratio for 2016} = \frac{32,000,000}{40,500,000} * 100\% = 79\%$$

$$\text{Technology investment expenditures ratio for 2017} = \frac{34,000,000}{43,000,000} * 100\% = 79\%$$

This ratio indicates that the company has allocated sufficient funds to invest in information technology, since it achieved expenditures amounting to 79% of the total purchase of machinery and furniture expenditures in 2016 and 2017.

f- Employee Productivity Ratio

This ratio shows the extent of the contribution of employees to the achievement of value added. It is also an indicator to evaluate the productivity of each employee. This ratio is calculated by the following equation:

$$\text{Employee productivity ratio} = \text{Value added} \div \text{Average number of employees}$$
$$\text{Employee productivity ratio for 2016} = \frac{40,000,000}{1,500} = 26,667 \text{ dinar/employee}$$

$$\text{Employee productivity ratio for 2017} = \frac{56,000,000}{1,700} = 32,941 \text{ dinar/employee}$$

This ratio indicates an improvement in the productivity of the work component in the General Electronic Industries Company. It also shows the amount value that each employee adds to the company as a whole.

g- Intellectual Capital Turnover Rate

This rate is used to determine the extent of retention of assets of the research sample company. It is calculated through the following equation:

$$\text{Intellectual capital turnover rate} = \text{Number of resigners and job abandoners (from intellectual capital)} \div \text{Total number of intellectual capital}$$

$$\text{Intellectual capital turnover rate for 2016} = \frac{30}{780} * 100\% = 4\%$$

$$\text{Intellectual capital turnover rate for 2017} = \frac{25}{780} * 100\% = 3\%$$

This rate indicates the ability of the company to maintain intellectual capital. It is noted that the low turnover rate of the company is due to the existence of a good policy of motivation. The existence of a favourable climate helps to promote innovation and renewal during the years of research.

h- Number of Employees Representing Cognitive Assets Compared to Total Number of Employees

This ratio is used to identify the intellectual capital ratio in the company. It is calculated using the following equation:

$$\text{Intellectual capital ratio to total number of employees} = \text{Cognitive assets} \div \text{Total number of employees}$$

$$\text{Intellectual capital ratio to total number of employees in 2016} = \frac{780}{1,500} * 100\% = 52\%$$

Intellectual capital ratio to total number of employees in 2017 = $\frac{780}{1,700} * 100\% = 52\%$

It is noted from the above results that the ratio of cognitive assets compared to the total number of employees is a good ratio because of the existence of management's effective policies. These attract, train and motivate human cognitive assets well.

3- Cost Models Method

This method includes several models to measure intellectual capital. Of these models is Tobin's Q model, which compares the market value of intangible assets with the costs of their production. If the value of Q is less than one, this means that the market value of a particular product will be less than its production cost. When the Q value is high (more than one), this means that the company has high income and it generates significant profits with assets not owned by other units.

To apply this model to the General Company for Electronic Industries, we can say that this company has designed computer programs and developed them to include new technology. The flow of future economic utility has been evaluated depending on the personal judgment of the company's management. When the useful life of an intellectual asset developed internally is 15 years and it is intended for sale to another company, its market value amounts to 5,300,000 dinars, while production and development costs can be explained by the following:

- a- The cost of materials and services used to generate the intellectual assets amounted to 988,000 dinars.
- b- Employees' salaries, wages and other costs related to those directly involved in the generation of the intellectual assets amounted to 1,560,000 dinars.
- c- Fees for registering a legal right and the amortisation of patents amounted to 1,200,000 dinars.

Thus, the total cost of generating intellectual assets amounted to 3,748,000 dinars.

Tobin's Q model = The cognitive asset's market value ÷ Cost of producing and developing the cognitive asset

$$\text{Tobin's Q model} = \frac{5,300,000}{3,748,000} = 1.414$$

This result indicates that the company is making high profits from cognitive assets not owned by other companies.

For the purpose of applying the previous models, the financial data of the research sample company was used. This financial data was represented in the income statement and balance sheet. This company is based on knowledge, as we mentioned above. It discloses intellectual capital and corresponding human cognitive assets and intellectual property. The following is a list of the proposed income, the proposed statement and proposed balance sheet of the research sample company for 31/12/2017.

Table 3

Income statement of the General Company for Electronic Industries for the period ending 31/12/2017

Details	Partial amount	The total amount
Sales revenue		86,000,000
Production costs	30,000,000	
Beginning finished goods inventory	5,000,000	
-Ending inventory of finished goods	(20,000,000)	
Cost of production sold during the period	15,000,000	
+Marketing costs	<u>4,000,000</u>	
Sales cost		<u>19,000,000</u>
Gross profit		67,000,000
-Administrative costs		(5,000,000)
-Depreciation and amortisation		(13,640,712)
Net profit before interest and taxes		<u>48,359,288</u>
-Income taxes (tax rate) (25%)		(12,089,822)
Net profit		<u>36,269,466</u>

Table 4

Balance sheet of the General Company for Electronic Industries ending on 31/12/2017

<u>Non-current Assets</u>		<u>Liabilities and Owners</u>	
<u>Intangible assets</u>		<u>Equity</u>	
<u>Cognitive Assets</u>		<u>Liabilities</u>	
		Creditors	21,000,000
Investment in human resources	12,867,000	Short - term loans	11,000,000
-Allowance for the amortisation of investment in human cognitive assets	(321,675)	Long-term loans	<u>19,000,000</u>
Net Cognitive assets	12,545,325	Total Liabilities	51,000,000
<u>Intellectual Property Assets</u>		<u>Owners' Equity</u>	

Licenses	6,100,000	Cash capital	64,219,161
-Allowance for the amortisation of licenses	1,220,000	Intellectual capital	<u>76,111,288</u>
Patents	31,100,000	Paid-in-Capital	140,330,44
-Allowance of patent amortisation	(1,829,412)	Retained earnings	10,880,839
Trademarks	22,785,000		
-Allowance of trademarks amortisation	(569,625)		
Designs	9,000,000		
-Allowance of designs amortisation	<u>(1,800,000)</u>		
Net intellectual property assets	63,565,963		
Total intangible assets	76,111,288		
<u>Tangible non-current assets</u>			
Warehouse buildings and factories	26,000,000		
Lands	8,000,000		
Furniture	9,000,000		
Machinery and Equipment	34,000,000		
Research laboratories	2,000,000		
Less: Allowance of non-current assets	(7,900,00)		
Net tangible non-current assets	71,100,000		
<u>Current Assets</u>			
Inventory	20,000,000		
Cash	11,000,000		
Debtors	<u>24,000,000</u>		
Total Current Assets	55,000,000		
Total Assets	<u>202,211,288</u>	Total Liabilities and Owners' Equity	<u>202,211,288</u>

Conclusions and Recommendations

Conclusions

The research reached the following conclusions:

- 1- Many of the elements and components of intellectual capital are not treated with specific accounting entries and thus they are estimated in a rough and unobjective way.

- 2- An important part of the intellectual capital of companies is human capital. It clearly emerges in companies based on knowledge. It is not easy to measure and determine this kind of capital.
- 3- Accounting and tax rules still deal with physical capital and largely neglect intellectual capital.
- 4- Current measurement models lack the existence of a specific method and technique to calculate the costs and returns of cognitive assets and intellectual property. This involves using discount rates and interest rates when making a comparison of the costs and returns accounts of physical tangible assets. Furthermore, it is difficult to developing a method to deal with this problem due to human knowledge, which is characterised by properties that are non-physical and intangible. Thus, they cannot be directly measured, and the methods used in daily accounting transaction entries (recorded in accordance with accounting rules in the preparation of accounting and financial reporting) are not compatible.

Recommendations

In light of the conclusions reached, the following is recommended:

- 1- Economic units should pay attention to intellectual capital and tackle it. It should be revealed and displayed in financial statements and show corresponding cognitive assets and intellectual property. Balance sheets should start with these assets because of their great importance to companies.
- 2- Researchers suggest the following steps in preparation for the recognition of intellectual capital to achieve benefits:
 - a- Develop great perception and understanding of the role of knowledge and the nature of intellectual capital and what it includes regarding the intellectual property and cognitive assets of the economic unit.
 - b- Develop a measurement model that combines financial and non-financial indicators within a coherent framework that meets users' information needs.
 - c- Use expertise and objective consultations, rewarding, attracting knowledge-bearing employees and conducting numerous tests for them in order to be fully aware of all knowledge and intellectual property assets owned by economic units.
 - d- Achieve effective communication between the elements of intellectual capital whose outputs will be measured.
 - e- Encourage those involved in managing companies to attend training courses that will enhance their knowledge of modern information technology and increase their conviction regarding the importance of activating the use of knowledge.
 - f- The researchers suggest a local accounting rule to be presented to the Iraqi Broad of Accounting Rules and Standards for the purpose of studying and applying it by companies.



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