

MANAGEMENT OF INTANGIBLE ASSETS AND ARC MODEL

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ABSTRACT

In the present based knowledge economy, intellectual capitals have more value and importance for organizations and agencies rather than physical capitals, and as an interpretation, intellectual capitals are discussed as real assets and part of strategic assets of present age. Tangible assets have been confined to an organization and are unable to balance their capitals for the long time and a factor of increasing the value of these capitals is mainly increasing their price. On the basis of published statistics, almost %80 of big companies properties with universal degree and economic agencies have consisted of intangible assets and spiritual values. Therefore, organizations for gaining the stable competitive advantage, required, identifying and consciously and systematic management of their intellectual capitals and intangible assets. As a result, designing and utilization of a proper approach to intellectual assets management and intangible assets, has been studied. In continuation ARC model has been introduced, defined and specified for management and report of intellectual capital. Nevertheless, in present paper the objective is that, with specifying the new conditions before managers of human resources in knowledge economy, identifying the roles and challenges beyond the managers in human resources management as intangible assets identify and in continuation specified the ARC model function for measurement and reporting the intellectual capitals. So that represented a roughly comprehensive image of human resources management status in the beginning of third millennium.

KEY WORDS: Intellectual Capital, Human Capital, Tangible Assets, Competitive Advantage, ARC Model.

1. INTRODUCTION

In agriculture age and past industrial one, two factors of labor and land had an important role in human life. After the beginning of industrial age and until the late of twentieth century, two factors of labor and capital have been considered as the main factors. But, nowadays, information and knowledge find their position in global economy and beside the labor and capital regarded as important assets of production and create value. In fact the speedy growing of information technology and communication (ICT) in late of twentieth century caused to a considerably part of production and entrepreneurship from physical activities impelled toward knowledge-oriented activities. Professor Peter Drucker (1993) the father of new management, many years ago had participated: In a very close future, and in a permanently changing world, knowledge will be the sole assets, best competitive advantage and the sole strategic resource of organizations (Drucker, 1999).

Nowadays information and knowledge so greatly have combined with human life called present age as information age. According to Alvin Toffler statements, the illiterates of 21 century won't be persons who aren't able to read and write, but who can't learn and teach. In these conditions, human role in organizations and looking to him would have an effective share in organization's success or failure. In scientific management of Taylor, humans are considered as labor tools. With emerging the movement of human relationships, changed the type of looking to human and gradually beside the various resources of organization, such as financial, technological, informative resources and ... also represented human resources. Now, talking about human capital is widespread. With beginning the third millennium, every day the role of human resource has been highlighted and now, mentioned it as only factor for gaining stable competitive advantage. Today this more than before comes true, especially in knowledge-oriented economy (Sanei, 2007).

Present age is the evolutions and tremendous changes age. These quick changes in present world have faced organizations with various challenges. Challenge is management of intangible assets or management of intellectual capitals. But among them, the organizations would be successful which with help than managing tools and modern technologies, use than created themselves profit, that management of knowledge is one of that tools. Management of knowledge is the process of making value from organization's intangible assets (human capital). Now days , knowledge has been considered as a valuable assets and a strategic resource and capital in organization , and representing services (productions) with quality and economic, without utilization and management of this valuable resource , is difficult and often impossible (Farhadi Mahalli, 2008).

Intellectual capital rose from knowledge and science. Yet, this term is living in its evolution period. This concept for the first time has been discussed in 1999, when Swedish big company of Scandia began to execution of scientific innovation procedures for special attention to its intangible assets, now enjoyment of information and knowledge management turned to a stable opportunity for continuation of life in dynamic and creative organizations, even competitive power in markets and trade is depend on achieving the development and updating the organizational and individual knowledge. So that, knowledge considered as the main part of capital (Drew, 1999).

Therefore, in economic which is on the basis of present knowledge, competitive advantage, increasingly found in facilitating the informative trends of performing the task, so that in access to resources and special market, knowledge and intellectual capital discussed as the primary basis for attainment to the main and strategic competences for better operation? Along the arriving to stable competitive advantage also with respect to available knowledge, circumstance of effective use than it and making a structure for representation and use than information and new knowledge and most important the management of knowledge-oriented forces, considering an important and vital matter and is one of new challenges of management in century 21, which organization must have a special attention to it, so that could be pioneer in this dynamic competitive variant and ruffled environment.

2. LITERATURE REVIEW

Peter F. Drucker believes that: the only (or at least) the most important resources of wealthy in post-capitalist society are knowledge and information. He has discussed 3 basic changes of knowledge (revolution) during the 20 century. First revolution is industrial revolution, in which there has used knowledge for production than tools, processes and products. Second revolution, is productivity that persons such as Taylor and Ford used than knowledge just for work force. Third revolution is management revolution in which used than knowledge for knowledge itself.

These expressions don't means that the traditional factors of production are removed, but just their position has changed .Drucker believes that; while knowledge is available other factors of production are accessible easily.

Table 1. Three revolutions and basic change of knowledge (Drucker,1998)

	First Revolution	Second Revolution	Third Revolution
Revolution	Industrial	Productivity	Management
Knowledge Applied	Tools ,Processes Productions	Labor Force	Knowledge

The fourth wave of human historical life with entrance to virtual age, some new concepts such as Palladian society, knowledge-oriented economy, knowledge management, intangible capitals and ... are forming. Enjoyment of informative tools and communicational facilities in proportion to new conditions is the survival proviso in this competitive and ruffled period. (Amidon, 1997; Drucker 1998).

Human resources have been considered as the most valuable resources in knowledge management point of view. Organization's professionals and experts, as a base of knowledge during the years, gathering the experiences, trends, solutions, innovations ,... as hidden or tactic knowledge in their mind. Non knowledge-oriented organizations use than these valuable resources just in events moments, don't have any plan for managing these resources. But, innovative and knowledge-oriented organizations spend all of their attempts for increasing of this capital, its extraction and production, and minimization the exchange between them.

The roots of intellectual capitals' concept are very deep. In 1969 an economist namely John Kent Galbrit for the first time used than the term of intellectual capital when before that, Peter Drucker had discussed the concept of aware labor. Although, much more systems are using the concept of intellectual capital but, yet many of incumbent individuals don't have any information about this.

The importance of non-monetary scales is quite clear and obvious. Edward Doming who is the creator of qualitative cycle's concept, criticized than US managers, because they spend %97 of their times for analyzing the statistics and figures and less than %3 of their times for intangible assets which have more importance rather than others. In other word, they spent %97 of their times for studying a duty which theses %3 were created that. Nowadays, from each 3 North American companies, one company has a special attention to the value of software. Intellectual capital has played an important role in this matter. Powerful institutions such as Federation of US auditing Standards or commission of exchange and negotiable instruments in Washington have began moving toward utilization of intellectual capital's concept. Broking's institute paid to this matter quite systematically. In Denmark, government has prepared a bill for ratification of this matter. When Business Week the international magazine, takes action to grade the trade faculties considered the index of intellectual capital. Since, present financial indexes just have been referred to the past create a great gap between final products and long term goals. They provide a proper condition for companies' strategies. Indeed the productivity key in future is identifying the psychology, sociology and political values in entrepreneurship.

For example, from the experiences of implementation the knowledge management in companies (human), we can point to Delphi institution which results of studies in this, show that there is main part of organizations' knowledge in employee's brain and most of organizational processes based on employees' mentality will form. It is obvious that if there is any structure for extraction and protection of knowledge, a main part of organization's intellectual capital will be inaccessible.

Existing of task- related knowledge culture and proper human foundation (culture) is the most important reason for successful implementation of knowledge-oriented management in dynamic and creative organizations. The obtained results from implemented researches indicated that %50 of problems for implementation the knowledge management are related to the culture and human force and the problems relevant to structural and technological scope; everyone just has % 25 roles and effect (Jalali and et al. 2003).

Intellectual capitals included: intellectual materials, knowledge, information, intellectual ownership ... which organization can use them in order to making the value, which consisted of human capital, structural capital and relational capital.

Since human asset is knowledge, skill, competence, experiences, motivation and individual's commitment in organization. And structural asset is something which would be remained after the exiting of employees and personnel's from organization. And relational asset consisted of some cases such as; proper relationship with costumers, providers, investors, shareholders, trade mark of organization and privilege right....

At this moment wanted or unwanted, the necessity to information will increase in our country, and in other side with considering the increasingly trend of globalization all countries are in comparison with global giants in economy, culture and other fields and in fact , globalization encompasses us. In this scope, information management, knowledge and intangible assets are important which gradually will be more important. That in such conditions, identifying the informative necessity, locating the intended information, evaluation power of obtained information and distinguishing the proper information from improper information, considered as the main challenges of organizations which interpret them as informative literacy.

What is Intangible Assets?

In present age, organizations' properties divide to two groups of tangible assets and Intangible assets, which the economy on the basis of knowledge, valuation activities aren't just depend on their visible assets, but nowadays the ability of organizations in utilization of tangible assets from the main power of their valuation. Thus, pioneer organizations in present age; seek their success in utilization of more share than intangible assets and creative and knowledge worker human resources considered as the most important intangible assets and golden key in competitive arena. intangible assets are longevity and intangible which expand by an organization/company and regarded as part of organization's/company's assets. Some of the basic cases in intangible assets which are identifiable and traceable; consist of:

- Brand; trademarks of consuming goods, trademark of company, company's name.
- Publishing right ; magazine and publication, book, artistic works , music, ...
- Licenses; royalties, right and concession of goods and services' distribution.
- Intellectual property; patent, copy right, trademarks, operational and trade knowledge of companies...

Intellectual ownership as it clear, is one of special cases of intangible assets. Intellectual property made by human's innovation and creativity.

As a result, it could be possible to identify and utilize the hidden values which a lot of people ignore it easily. They divide into 2 groups:

- 1) Artificial creative kind: such as; trademarks, software production.
- 2) Innovative creative kind: such as; invention and exploration rights, industrial drawings.

Intellectual ownership in many cases caused to increase or reinforcing the organizations and tangible and intangible assets. But, it seems that

Such properties have some differences in calculation of value and price with tangible assets. In the advanced countries because of some special and unique conditions of these properties, involved governments and organizations more record and protect the properties which are in category intellectual ownership, then set and anticipate some special rights and regulations. These protections inform the inventor about its properties' economy economic value.

Intellectual ownership are the production of investment and spending cost in time, work and capital and in return their output affected by these scopes. In a scientific study, among 500 companies of building and production in 1975 A.D, %60 of market value was related to investment on tangible assets but 20 years later this decreased to %25 and now also this decreasing trend continue

Traditional Approach for Estimating the Countries' Wealth

From a long time ago a country's wealth was considered by combination of the three factors:

Natural resources, hardware resources and human resources. With use than statistic language, we can see that every one of these factors how much are effective in country's development. The share of various resources of countries' total wealth is represented in table 2.

Table 2. Comparison the share of various resources from countries' total wealth

Row	Kind of Resource/Group of Countries	exporter crude material Countries	Developing Countries	Developed Countries
1	Natural Resource	44%	30 %	17%
2	Hardwar Resource	20%	16%	16%
3	Human Resource	36 %	54%	67 %
Share of world total wealth		%4.6	%15.9	%79.5

Comparison the first row of table 1 has indicates the reason of formation a group of countries as crude material exporter. In other word, it is a bitter fact that utilization of full natural resources has provided an easy receiving resource of income for these countries, which are mainly non-renewable and won't have high stability. Maybe most basic reason for non-stop and quite scheduled attempt of advanced countries for considering the stable development and depended cases has been lack of utilization than these resources. Comparison the second column of table 2 is indicative if high amount of our country's natural resource which warrants the necessity of proper use than them.

Second row of table 1 shows that the utilization assumption of developed countries about various kinds of machinery and super advance equipments as quite special- except in some special industries- is no truer.

Third column of table 3, verified that our country has any acute shortage in term of machinery and this is more than 2 times of medium amount of this group's countries.

But from third row of table 1 which devoted to human resources, will be comprehended that main capital of developed countries is in hardware not their natural resources, but is in countries' human resources. Comparison fourth column of table 2 shows that the share of human resource in our country even is lower than medium amount of this group's countries. Anyway, why developed countries have %80 of world wealth both their share of hardware and share of natural resource is lower than our country?

Table 3. Comparison the Share of Various Resources From Total Wealth of Sample Countries.

Country/Kind of Resources	N Natural	Hardware	Human
Japan	%2	%18	%80
Germany	%5	%17	%79
Spain	%9	%13	%78
Turkey	%12	%15	%72
Iran	%29	%37	%34
Average of World	%20	%16	%64

Table 4. Comparison the Portion of Incumbent Individuals In Industry With Various Educations In Iran and World.

Local of comparison/Education	Unskilled Worker	Skilled Worker	Technician	Engineer	Researcher
World	%35	%30	%20	%10	%1
Iran	%57	%38	%2.8	%1.2	%1

Table 4 shows that at this moment the texture of incumbent human force don't have the necessary balance and dynamic for competition with modern industries of world. As simple labors organized a great stratum of incumbent persons in industry (more than half) and lack of efficient human force, especially in pertaining to research level divested the necessary dynamic from country's industry. This problem itself is indicative of remain abandon basic role of investment on human resource for development and lack of proper position for research in country's industry that according to before-mentioned statistics lead to emerging a deep gap between present indexes of country and world. Of course, migration of elite human force to abroad (physical migration) also lack of true management on human resources and disappointing of human force in dynamic cooperation and consequently removed from activities (mental migration) are aggregated the situation and everyone is considerable.

New approach for estimating the nation's wealth

Why some countries' people are so much rich? For example, whether the reason of US people's richness is just their fertile plain or luxurious cities? Implemented studies shows that such natural and human made resources, constitute a roughly little share of countries' wealth. On the basis of these studies, we can consider the nation's wealth as the output of natural asset, produced asset and intangible asset.

Produced asset is the sum of hardware, equipments, structures, substructures, roads and even urban land. And in simpler expression produced asset is something which com into mind, when we think about capital. Intangible asset must be considered as including raw work, human asset and level of trust in society and quality of its formal and informal social institutes. The purpose of human asset is sum of population's capabilities, skills and technical knowledge that of course country's proper characteristics of demographic structure in terms of age can be considered as the advantage or a threat for that. The most interesting aspect of wealth estimation is high value of intangible asset. About %85 of world's countries having intangible asset more than %50 of total wealth. On the basis of World Bank's researches, period of education and index of law sovereignty in all fields can be the reason of %90 changing in intangible assets. In other word, if the population of a country is more educated or its legal system is more fair and honest, that country will be richer (World Bank 1999-2005) and some sample countries' per capita wealth are represented in table 5.

Table 5. Comparison of Some Sample Countries Wealth

Country	Switzerland	United State	The Average of Countries of Member in Development & Cooperation organization	Burundi	Nigeria	Ethiopia
Wealth of per (\$)capita	648/000	513/000	440/000	2/859	2/748	1/965

The procedure of governing the countries can help to intangible assets growth or caused to their falling or even create negative intangible assets. Unruly corruption and inefficient educational systems, means that, countries such as Nigeria and republic of Congo destroyed their wealth and will be poorer in future. While life in US for everybody is similar to utilization than a wealth equivalent with 513000 dollars. For interpretation of half million dollars per capita wealth in US, it should be considered that how much revenue this wealth produce annually? In isn't surprising that, countries with highest per capita wealth produce highest per capita income. For example, in US per capita income in equal condition purchase power annually is 41500 dollars, it means that 8 percents revenue of wealth average .Notice to table 6, for comparison of asset combination in two sample groups of countries.

Table 6. Comparison of Combination the Capital in Two Group of Sample Countries

Group of Countries	Wealth of Total Per Capita	Natural Capital	Produced Capital	Tangible Capital
Low of Income	7.216	2.575	1.150	3.991
The Average of Countries of Member in Development & cooperation organization	353.339	76.193	9.531	440.000

The main part of countries' asset has accumulated in economic and sovereignty institutions and their educational systems. Natural assets in rich countries such as US just comprise a small portion of their total wealth which is between 1 to 3 percent. However these countries in comparison with poor countries utilize than higher amount of natural assets. In other word farms, pastures, forests in rich countries have more value, because with their combination with various assets such as machines and with backing of powerful possession rights can produce more value. In other word, existence of these assets a worthwhile advantage which can be considered as substructure and the motivation of reinforcing the wealth producing techniques not regarded as in depended asset resource (and of course non-renewable).

While hard ware, buildings, roads... comprise %17 of countries' wealth, %80 of rich countries' wealth have comprised f intangible assets. It's obvious that rich countries because of technical, social and cultural skills of their population and institution's quality are mainly supporter of economic activities of wealth/ value producer. Ninety percent of intangible asset comprises of law sovereignty (%57) and education time (%36). A society which have more efficient judiciary, clear possession law, more efficient executive government and institutions, produce more income and with effective use than this, will be added to their wealth. The amount of people's trust and their obedience than regulations will be inserted in index of law sovereignty that its comparison with some sample countries represented in table 7.

Table 7 . Comparison of Law Sovereignty Index for Some Sample Countries (Maximum 100).

Country	Switzerland	United State	The Average of Countries of Member in Organization Cooperation& Economical Development	Ethiopia	Nigeria	Burundi
Index	99	92	90	16.04	4.8	4.3

On the basis of World Bank's studies, ne grade would be added to law sovereignty index, 100 dollars to the wealth of medium income countries and about 3000 dollars to high income countries.

Nevertheless, in present high challenging world organizations would be successful in the protection and reinforcing their competitive advantages which both organization and person are aware of the importance of human resources development. Human resources development in agencies and organization considered as a kind of mutual commitment and bilateral task between person and organization. The unity of human resources development systems means cooperative connection with other systems. Organizations' utilization than strategic program about human resources development with certain goals, can parallel organization's human resource development with organization's total goals. Therefore, the managers of human resource development must be present in heart of the process of drawing and accomplishment of organization strategy. Since real development of organization's human force required organization's parallelism and its human development programs with scientific evolutions and technology and modern tools of human resources management in advanced world.

So, if we are willing of organization's protection and development we must expand the organization's human force, process-leaning approach in discussion of human resource development is an inevitable necessity.

3. STATEMENT OF PROBLEM

Following with scientific and technologic advances, gradually the economic activities of society become more knowledge and form the economy system on the basis of knowledge. One of characteristics of the economy on the basis of knowledge is the expansion of a workforce, which deal with scientific tools. This expansion is both quantitative means that, added to a number of knowledge worker or scientific workforce, and qualitative, means that the scientific quality of mentioned forces will increase. Workforce of Knowledge worker which now comprised the main body of human asset and the knowledge capital of economic systems in present age is the important capital of societies. In the economies on the basis of knowledge, experiences have shown that knowledge asset considerably will surpass of financial and physical capitals .And in these systems, knowledge, understanding and creating the knowledge are the main factors survive and growing the organizations in competitive organizations in competitive conditions (Farhadi Mahalli, 2009).

Informative and human capitals have very important role in digital economy. If in organizations be coincide or parallel with business strategies can make an extraordinary added value. One of the most important management challenges in recent years was making this parallelism between informative and human capital with organizational strategies that know as strategic parallelism. Human and informative capital often discussed as intangible assets, and their measurement is not easy. The informative systems of human resources management are one of the most important organizational intangible assets. Parallelism of intangible assets with strategic objectives of organizations would be caused to creation a unique competitive advantage which would lead to creation the value and gaining profit for beneficiaries.

On the basis of Kaplan and Norton studies, the most important reason for measurement of Tangible assets is that, if an organization could parallel human capitals, such as skill and its staff's knowledge with informative capitals, such as the informative systems of human resources management and organizational assets such as team work and organizational culture will be successful in creation a strong competitive advantage which is not easily du by competitors (Kaplan & Norton, 2004).

Implemented researches shown that two third of all American companies are seeking, finding new methods for gathering and representing non-monetary information such as intellectual capitals. At least one third of US companies decisions in return of investment are related to intangible assets. Statistics express that; the more non-monetary criteria will be lead to more precise predictions about future profit and income. Though in present age, economy which is on the basis of knowledge and knowledge capitals, the most successful agencies are those which use than their intangible knowledge properties optimally and efficiently, but in spite of recognizing the high importance of intangible knowledge assets, and their important role in competitive advantage of these agencies, managers often don't know the value of their knowledge assts or aren't able to their measurement and examination , thus in management of tangible capitals are faced with challenges. Because knowledge capitals don't represent in firm's sheet of balance or annual reports, therefore their evaluation and management seem difficult. But, in addition to the importance of these knowledge capitals' management in term of internal dimensions, this has high importance in term of external dimension. In fact, it turned to a challenge for organizations in century 21. Since, drawings and utilization of proper approach for reporting the knowledge assets have a great importance.

Nevertheless, this question arise that; how the value of intangible assets and intellectual capital has examined? And how can supervise it? Because we can't manage something which is not examined, or how we can manage and developed the value of our intellectual capital?

The Importance and Necessity of Subject

Nowadays, related words with manager in the economy, on the basis of knowledge is differentiated and in many of scientific texts have been used than mental capital, mental power or intellectual power instead of manpower (Drucker, 1990).

Basically, intangible assets divided into three sections: human capital, informative capital and organizational capital. In fact, human capital is the employees of organization. Informative capital consisted of everything which human capital and organization know. Organizational capital is the knowledge and perception of circumstances the implementation of human capitals and use than informative capitals in order to creating value for organizations (Kaplan & Norton; 2004).

Peter. F. Drucker believes that, the only distinction between successful and non- successful business has hidden in their development operation of human resources scope. Therefore, organizations free of kind and the domain of their activity can create value by use than effective management and human capitals development. In global knowledge- oriented economy, intangible assets such as human capitals constitute about %80 of organizations' value. Changing the intangible assets to tangible results is a new approach, which organization use than it. Individuals who have the ability for utilization of such process in human resources can create a stable advantage.

The evolutionary trend of human society life shows that with trust on its knowledge management experiences could with passing from livelihood economy to industrial economy arrange the current of making wealth that with optimum use than resources, create more welfare possibility for humans. Before the beginning of 80s A.D our country with holding %0.6 of universal production, possessed a share equivalent with %1/36 of universal export which the per capita income of our country in that interim, were about 2800 \$. Today, just %2 of universal production of that country, its share of universal export is % 0.23 and country's per capita income decreased increasingly.

During the past 30 years, maybe about 630 billion \$ just from section of oil and gas injected to country's economy. Also another section were resources that consumed freely or sometimes irregular in country and such as oil which its internal consumption are over than 1/5 million barrels every day, that each day added to above-mentioned figure. In spite of the consumption these amount of capital, country's per capita production almost remains stable that indicated the survival of economy but lack of its adequate freshness .In this way today the

power of wealthy production of each country indicated its position in international arena and this power is production of combining the resources.

Comparison the share of various resources from countries' total wealthy shows that the share of our country's hard ware and natural resources aren't lower than developed countries at all. But the share of our country's human resources from its total wealth rather than developed countries (and even some of developing countries) is very small. Comparison the portion of incumbent persons in country's economy with various educations in Iran and worlds is shocking. However, repairing the texture of incumbent human force is necessary in country's economy, but thinking about present social status of country, pondering about present acceptable values of society, also studying the statue of various available institutions in present society and analyzing their efficiency, indicates the priority of cultural and intellectual structure of country's human resource and it doesn't seems that only with increasing the level of literacy (automatic) can create a considerable changing in present statue of our organizations and in a vast looking , public statue of country, since only with enhancement the number of graduates in various educational sections during 25 years ago don't show a tangible changing in the quality of life and social welfare of people in country (UNDP, 1999-2005).

Therefore, when the production of products and production of information arrived to saturation point, intellectual capital is an important resource for competitive advantage which can lead to important advantage for preservation the costumers, attainment to new costumers and continuation of innovations. Thus, the assessment of organization's intangible assets recognizing its position and importance in value chain and representation an exhaustive strategic model in management and its reporting is valuable.

4. METHODOLOGY

The corpus described above about the management of intangible assets and ARC model is analyzed in this article by drawing on multiple research methods. This study combined methods by reviewing present literature on this subject and comparing information and data gathered and reported by research councils .In other hand, by means of target, this study can be considered as an applied study and by considering methodological approaches as a theoretical study. So, by this approach I will attempt to discuss and review previous theories and researches in the field of research's subject and develop current theoretical framework. There is also a more pragmatic reason for this choice. Cross-cultural comparisons are, of course, beset with methodological difficulties and I shall review these – and the ways in which we have addressed them – at appropriate points in the analysis. To achieve this target the study is based on data from Longitudinal Study and reports of UNDP .This data set thus provides a unique opportunity to measure differences between countries in conjunction with managerial characteristics.

Management and Reporting the Intellectual Asset Model of Austrian Research Center (ARC)

At this moment, must be useful in global economy scope or assign the arena to competitors. Because in knowledge-oriented economy, management and human resources development have face with new tasks and functions. As in recent years moving from conventional economy toward digital and knowledge-oriented economy increased. Since countries' stable development are depending on changing in their economy nature. In fact, because most of results and achievements of present knowledge-oriented organizations are kind of innovation and invisible results of knowledge. Therefore, these institutions' necessity for establishment an effective relationship with their shareholders and inventors and informing them from their results and achievement lead to the enhancement of necessity to management and external reporting of knowledge assets. Since, drawing and utilization of a proper approach for reporting the knowledge assets have great importance. In table 8 has shown the knowledge properties of some successful companies in the world.

These figures show that the main hidden value of knowledge which exists in these organizations didn't show in their sheet of balance.

In one side, most of investments perform in these hidden properties, such as; investment in relationship with customer, information technology, network and competence. Therefore, the function of controlling an organization is creation an environment for invisible properties and knowledge management.

Table 8. The Value of Knowledge Properties of Successful Companies in the World.

Company	Market Value (Billion dollars)	Clerical Value (Billion dollars)	(%) Share of Physical Assets	Share of Knowledge assets(%)
Coka Cola	104/8	11/8	11	89
Microsoft	264/9	55/8	21	79
A.B.M	138/2	22/8	16	84
General	277/4	63/9	23	77
Intel	112/3	35/9	31	69
Nokia	71/1	15/4	22	78

One of the active persons in knowledge assets management scope in centers and knowledge institutions is Mr. Carl Heinz Lighter. He and his colleagues developed the basic model about knowledge asset management with respect to the requirements of knowledge organizations, and executed in Austrian Research Center, which became renowned as ARC model. In fact this model is a response to this question that, how we can measure and manage the knowledge invisible properties in knowledge organizations and report their effects.

Therefore, mentioned model in addition to concentration and notice to various forms of invisible properties, refer to the circumstances of their using in organization and their effectiveness on organization's output.

For drawing this model in addition to present literature in management field and reporting knowledge assets, also have been considered the results and findings about innovation theory and evaluation. Moreover, this model provides a primary framework for reporting knowledge assets in knowledge organizations and institutions and has comprised of 4 elements like figure 1. Above Mentioned model have special characteristics. This model besides separating the various forms of invisible properties or knowledge assets from each other and connect them to the cycle of organizational knowledge production. This model combines the organization's objectives, invisible properties, and organizational processes and results with each other in knowledge organizations. This model against other models which comprised as theoretical or empirical have firm processional base. Because clearly distinguishes between inputs, processes and outputs. Thus, this model can be called as processional model, which connect and combine the strategy, knowledge objectives and agency's knowledge-oriented processes with intangible results (Marandi, 2007).

This Research Organization is one of biggest Austrian knowledge-oriented institution, which works in various scientific and research fields and from 1995 took action to measurement and reporting its intellectual assets. In this organization has developed and executed a basic model for intellectual assets management with respect to features and requirements of knowledge organizations, which because of this has renowned as ARC model. This model provides a primary framework for intellectual assets reports in organizations and research institution which has comprised of 4 elements such as below:

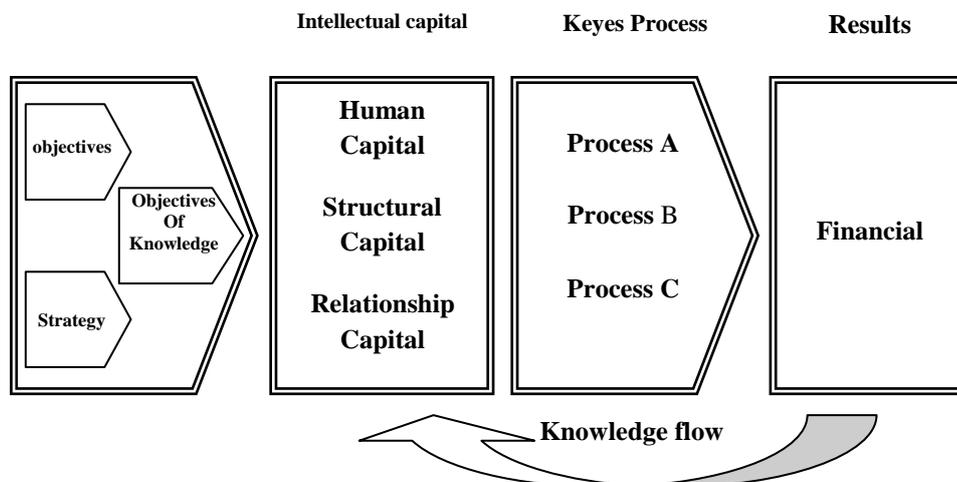


Figure1. Basic ARC Model for Management and Reporting the Intellectual Assets.

On the basis of ARC model, the process of management and reporting the intellectual assets include 4 basic steps. However covering these steps and in fact responding this model to an organization's special requirements, involve proportion of this process with organizational conditions such as clear determination of organizational strategy and definition of that organization's key processes and this matter considered as a basic challenge for organizations which have intend to utilize and match this model for their intellectual assets management (Salevati & Maddah, 2007).

Specification of goods and strategies and determination of knowledge goals: on the basis of this model, primary and basic point beginning with discussion and examination about organizational objectives and strategies and definition of organization's special goal. In research organizations, regard these goals as knowledge goals. These knowledge goals are describer and indicator of scopes which special skills, structures and relationships must be formed and increased as in them, so that has been guaranteed the execution of organization's strategies. These goals provide a framework and structure for utilization than organization's intellectual assets. **Identifying the key processes on the basis of mentioned model,** second step is identifying the key processes. In organizations and research centers include various projects and activities which have been done inside the organization then, combine and use than organization's invisible properties and create competitive advantage and value for research organization.

Determination of indexes: after definition of knowledge objectives and key processes is turn of determination and formulation the indexes proportional with objectives and key processes. Basically, the general goal of identifying theses indexes, is determining scales for evaluation of fulfillment the knowledge objectives and also management of resources and intellectual capitals which are required for activities and key processes.

Determination of results as reports of intellectual capitals: This model gathers all kinds of outputs, tangible and intangible. Usually, this organization's outputs are as various results, financial profit which can be considered as one of these results, can be utilized as an index for these organizations' success. But, the important point is that, a vast volume of these organization's results are intangible knowledge results, and these intangible results classify as financial and economic results, intangible knowledge results and social results (Marandi, Salevati, Maddah; 2007) (ARCS, Siebersdorf Research GMBH 2002).

5. CONCLUSION

Nowadays most important component for calculating the nation's wealth is nation's intangible assets which human capital includes collection of skills, capabilities and human's technical knowledge are parts of that. But other aspect of that is the quality of formal and informal institutions in a society, which encompass some factors such as law sovereignty. Here, emerges the importance of legal fields, culture and social relationships, culture of labor, dynamic, effective and efficient cooperation in various scopes of community and acceptable value in society.

An factor which can call it social assets, If in a society all kinds of resources and assets be with each other, certainly the current of wealth production will form in it and the development path will be open for them. The experience of economic growth and attainment of developing required notice to accumulation and optimum use than these assets and resources. The increasingly expansion of information and communication technology and growth of e-trade in world economy, represent the importance of this model utilization in organization's business process more than before. Because of the increasingly importance of human resources' role as a key element of successes in organizations especial in information and knowledge-oriented age, human asset and informative systems of human resource management have a fitting role in scope of invisible properties. ARC as an important tool of this parallelism lead to creation of value in process of transformation the invisible properties to visible results, competitive advantage, growth and profitability for company and shareholders. In Iranian organizations which for few years faced with these concepts seriously, must implement more mobility in this field. In this field, a few new notes are noticeable. First, the belief of senior managers of our companies and organizations is to the role of human resources and intangible assets. Second note is drawing and making systems and indexes for these properties measurement with respect to cultural and local problems of our country Iran. At the end, it is necessary that with making more cooperation between these assets and organization's goals and country's social developments programs through education, information science, culture making,

provide necessary fields for fulfillment of this matter. Intellectual capital isn't just a managing device as examination the criterion, second engineering or qualitative cycles. Intellectual capital is something more than these public objectives.

Ex-managing director of General Electric Jack Welch believes that we must globalize our intellectual capital and a procedure to make practicable it, is access to an international system of intellectual capital. Key challenge for companies and political leaders want access to various results, isn't only providing the conditions for growth and development in future but should inform all of shareholders about these tools confidently and useful. At the end of this paper, we can say that ARC model:

- Providing awareness and primary perception is about the circumstances of conceptualization the value-device processes in a knowledge organization and management and reporting the knowledge assets reporting in it.
- Although mentioned model is a linear, simple and conceptual model, but provide this possibility for management to manage the intellectual capitals structurally and prepare the conditions for their reporting. Although for determining the internal management activities model should be define more complete and necessary indexes must be define and localize.
- Inspire of implemented studies and experiences, yet there is necessary to more theoretical and empirical studies for compilation and development of management model and reporting of knowledge assets in knowledge base organizations so that the possibility of utilization than its vast application become provided and also provide supports and backings for study and interpreting the published information.

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