

Technology and intellectual capital as part of the production process in companies in the city of Sucre

Tecnología y capital intelectual como parte del proceso productivo en empresas de la ciudad de Sucre

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Abstract

This project rise to study the technological innovation and the use of intellectual capital in business in the city of Sucre. All manufacturing companies are taken into account in the city of Sucre, and it is sampled to measure how many of them take into account the intellectual capital, as a major part of their business and how the technological level. As well as the outline, how can they renovate their businesses? Furthermore, this research considers the primary information, such as: Historical Skandia models, to have a good foundation of what is intellectual capital (human)? Within companies how they will help them to business growth. Certainly, it is considered importance of technological innovation. Within companies and how it helps to possess market advantages over competitors. This research helps to visualize the state you are manufacturing companies of the city of Sucre.

Intellectual capital, Business, Sucre

Resumen

Este proyecto pretende estudiar la innovación tecnológica y el uso del capital intelectual en las empresas de la ciudad de Sucre. Se toma en cuenta a todas las empresas manufactureras de la ciudad de Sucre, y se muestrea para medir cuántas de ellas toman en cuenta el capital intelectual, como parte importante de su negocio y cómo el nivel tecnológico. Así como el esquema, ¿cómo pueden renovar sus negocios? Además, esta investigación considera la información primaria, como: Los modelos históricos de Skandia, para tener una buena base de lo que es el capital intelectual (humano) Dentro de las empresas cómo les ayudarán al crecimiento del negocio. Ciertamente, se considera la importancia de la innovación tecnológica. Dentro de las empresas y cómo ayuda a poseer ventajas de mercado sobre los competidores. Esta investigación ayuda a visualizar el estado en que se encuentran las empresas manufactureras de la ciudad de Sucre.

Capital intelectual, Empresas, Sucre

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Introduction

In a world of constant change, readjustment and social, political and economic openness, societies that have succeeded in building an efficient, stable and effective national innovation system, as well as achieving high levels of global competitiveness and well-being, thrive.

The transition from the 20th to the 21st century has framed a series of phenomena at the international level that suggest that our economies are going through a period of profound structural transformations. We are living through a new stage in world economic history (Jhon Naisbit Héctor Robles).

The information revolution is redefining our reality. Information technology transforms the way goods and services are produced and distributed. Its degree of penetration in society is not homogeneous, but the changes it generates are becoming more evident every day. Today it is increasingly common for companies to have computers to operate their processes; it is also more common for people in big cities to carry a laptop computer in their briefcase. Supermarket cash registers are replaced by more sophisticated equipment including an optical reader and a computer terminal. Organisational and procedures manuals, once recorded on paper, are now in bits. We could give many more examples, but what is a fact is that information technology has impacted the business world; its potential offers new ways of operating that enable organisations - if they use it properly - to achieve high levels of productivity and competitiveness.

Background

Since World War II, the output of economic activity or Gross Domestic Product (GDP) in some countries began to depend less on the transformation of the physical basis of production, i.e. objects (matter and energy transformed into manufactured products) and more on the transformation of the intellectual basis of production, i.e. the representations of objects.

In a certain way, technology is the product or result of the generation of knowledge, knowledge in turn implies a socio-cultural construction, with particular characteristics, especially in the prevailing global circumstances.

These circumstances stand out for the ethical and legal rupture in the management of techno-scientific power, in the midst of a largely recolonising globalisation, as well as the most complex and immoral of connections between domination, mass extermination and technological development.

In Latin America, the issue of endogenous technological development acquires a broad ideological nuance, due to the profound structural crisis derived from a failed development model, which necessarily forces us to look to techno-science as a valuable support in the achievement of social peace, as a fundamental ingredient for the construction of a humanist development model.

The social acceptance of technological innovations is linked to their benefits, as well as to the possibility of guaranteeing a sustained improvement in the quality of life. Thus, the social impact of technological innovations, measured only in terms of the market, is a tremendous mistake, especially when we talk about our national reality, a clear result of the constant deterioration in the terms of trade, which accompanies and "legitimises" our participation in the world economy. (Elsa Beatriz Acevedo Pineda).

Innovation is not only important to obtain productivity gains and improve the international competitiveness of our companies and products; it is also the guarantee to increase the standard of living of the whole society and to improve the functioning of all types of institutions, both in their economic and extra-economic aspects (Antonio Pulido, 2005).

In the new pattern of competition, competitive advantages based on knowledge and technology predominate, while comparative advantages based on factor endowments lose importance. In the past, financial and natural capital were the main sources of advantage, today it is human capital and knowledge. The technological revolution and the development of knowledge as a decisive force in the economy are taking hold. One of the fundamental characteristics of today's global economy is the growing interdependence between the capacity to generate scientific and technological knowledge and the creation of wealth. The trend is for this association to become ever stronger.

Thus, we are facing a transition from a system based on mass production for direct consumption and export to one of product differentiation and competitiveness based on technological and institutional innovation capabilities. As a consequence, we see a drop in the prices of primary products and commodities and a higher valuation of value-added products.

Innovation, and particularly innovation in technology, becomes a key factor in raising productivity, but it is also very important for forging new opportunities, associated with quality improvement, harvesting timeliness, preservation and processing. The nature of competition in global agribusiness is increasingly based on the value added and technological knowledge incorporated into agricultural products.

From a more general perspective, innovation also plays a crucial role in overcoming the ecological and climatic threats and constraints arising from human expansion, as well as the serious problems of poverty and social equity in developing countries, both of which are closely related to agricultural issues.

As a consequence of the increased importance of innovation for agriculture and agribusiness, there has been an increase in the total amount of investment in agricultural R&D in the world in recent decades, with a growing proportion of it coming from the private sector.

If one turns to statistics to analyse the country's position in terms of innovation and research in science and technology, the results are alarming. A recent study by the Ibero-American Science and Technology Indicators Network (RICyT), which evaluated investment in S&T in the region compared to that in other parts of the world, concluded that global investment is divided as follows: USA and Canada contribute 43%, the European Union 25%, Japan 16%, the rest of Asia 10%, the rest of the world concentrates 4% and Latin America and the Caribbean occupies 1.9%. On the other hand, the study highlights that in Europe scientific investment is of the order of 1.81% of its GDP, in the US it is 2.70% and in Japan it exceeds 3%.

Meanwhile, in Latin America and the Caribbean, only 0.59% is reached in the year 2000, an average that is basically sustained by Brazil, with Peru lagging behind with 0.08% (3.5 times less than Bolivia). Another important fact provided by RICyT is that in the 1990s investment in S&T in Latin America increased from 0.39% to 0.59% of GDP, highlighting the efforts made by Brazil, Costa Rica, Cuba and Chile, which have a proactive S&T policy². (www.inia.gob.pe/ September 2011).

Intellectual capital (IC) has become an essential factor for the survival of organisations and the ongoing development of companies (Juma, 2004). IC offers a potential source of sustainable competitive advantage and competence; the valuation of intellectual capital is important as it demonstrates how the firm aligns with its long-term strategic vision (Hayton, 2005, Sveiby 2000). Youndt (2005) refers to IC as the ability to influence innovation within organisations, Roslender (2004) states that intellectual capital is related to the topics of intangibles, innovation and knowledge.

The increased effectiveness and generation of innovation comes from the possession of knowledge by workers, a vast number of these developments have not been measured consistently or evaluated correctly due to the lack of standards for measuring such innovations in the workplace, which means that society has difficulty in identifying and diffusing them as quickly as possible without being able to detect their effects on the productivity of companies (Shaw, 2005).

Based on the aforementioned research it is presumed that intellectual capital can be considered as a strategy of organisations, especially the personnel related to innovation, in order to make the company more effective and more competitive.

The present research aims to find the relationship that exists between the organisation's IC and the effectiveness of the technological innovation process in companies in the city of Sucre, identifying the characteristics of the factors that translate into experiences, knowledge, development of skills and abilities that generate innovations within the organisation that can help to increase its effectiveness in the market.

Materials and methods

The following methods will be used in this work:

- Bibliographic. The necessary literature review will be carried out.
- Historical. Data will be collected over time.
- Analytical. Each piece of information and phenomenon will be analysed in detail.
- Inductive. General conclusions will be drawn from each part analysed.

Materials and methodology

The following techniques will be used:

- Interviews: This will be carried out with the managers of the companies analysed or with people who are decisive for the work to be carried out.
- Surveys: They will be addressed especially to the personnel of the companies analysed.
- Measurement: Directly aimed at the quantitative and qualitative data obtained.

Results and discussion

The results obtained from the surveys and interviews carried out in the different companies are shown below in tables and charts.

Results obtained



Figure 1 Company statistics

This table shows all the characteristics of the companies, such as the size of the company in the city of Sucre, which is characterised by being small (3%), medium-sized (12%) and others (2%), the ease of work (13% simple and 7% complicated) and finally the use of intellectual capital in the companies (12% yes and 2% no).

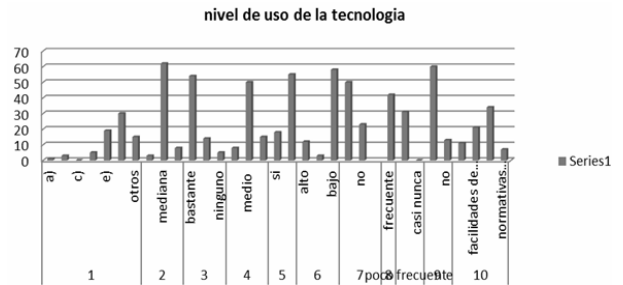


Figure 2 Level of use of technology

In this graph we can see data on the use of technology in the enterprises of Sucre such as the level of importance of the technologies inciso 1(d) very important, the size of the enterprises 2(medium), human capital 3(quite a lot), production level 4(medium), new technology 5(no), export level 6(low), more production at local level 7(yes), innovation in enterprises 8(frequent), training of personnel 9(yes), requirements 10(payment and credit facilities).

Discussion

The enterprises in Sucre are characterised by being medium and small enterprises, the majority of which use old technology with some innovations, and intellectual capital is generally used in innovations to bring out new products and not in the use of new machinery.

Conclusions

It can be verified that the companies in the city of Sucre are based on medium and old technology, this is because there are no good incentives from the government and also because buying new machinery has a very high cost. And the intellectual capital has a great importance in all the interviewed companies since it is a fundamental part of their growth, so it can be said that the only thing that is missing is a little more training in new technologies and this would help to improve and thus to achieve a greater competition against other cities and why not say other countries, and in this way to advance to the next step which is the industrialisation of our products.

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By means of the present document we show our best wishes to contribute to the country in the improvement of our productive processes.

We are also very grateful for the wisdom that God gives us at every moment, to our parents who are the guide and the values instilled in us day after day.

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We hope that this document will be a guide for people who want to be informed about intellectual capital and technological innovation in our city.

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