

# STRATEGIC ALIGNMENT MODEL BETWEEN BUSINESS PROCESSES AND ICT'S THROUGH ENTERPRISE ARCHITECTURES FOR SME'S

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## Abstract

Small and Medium manufacturing companies, as a result of globalization, have serious difficulties to compete in international markets, studies show that has been difficult for these businesses to adopt new methods of work organization, that does become more competitive and productive. In Mexico, SME's have successfully integrated the administrative processes into information and communication technology; moreover the processes of quality and production have less support by ICT's.

This research project proposes a model of strategic alignment between the key business processes of SME's and the ICT's, using enterprise architectures. The proposal was applied to a firm of a pilot sample, finding a complete support of management processes by ICT's. Partial support for production and quality processes, resulting an improvement proposal for the integration of the essential processes of manufacturing SME's into ICT's.

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**Keywords:** Strategic Alignment Model, Enterprise Architecture, SME's

## Introduction

Productivity and competitiveness of Small and Medium Enterprises (SME's) in the world, is of wider importance because they provide a high rate of employment among the population.

In Mexico, 7 of each 10 jobs are generating by SME's, which is important for the analysis and implementation of new methodologies that can provide them increases its production capacity and help them become more competitive.

SME's in Latin America have similar characteristics among which are

- Capital is provided by one or two people who establish a society, and are usually family business.
- The management processes are developed by the owners.
- Suppliers of a local or regional market.
- Fail for compete in international markets.
- Personnel unskilled or unprofessional.
- Little strategic vision and ability to plan long term.
- Lack of information about the environment and opportunities in the market.
- Lack of technological innovation.
- Lack of training policies.

By all of above, a model of strategic alignment that links the key business processes of SME's with Information and Communication Technologies (ICT's), which can provide

such companies some advantages that allow them to increase their competitiveness and productivity, is proposed.

The competitiveness of enterprises refers to the ability to produce goods and services efficiently at a reasonable price and high quality (declining costs and increasing quality), making their products attractive both inside and outside the country.

On the other hand the ICT’s can provide them with a sustainable competitive advantage, basing its efforts in implementing it by enterprise architectures.

Forthius, Brinkkemper and Bos (2008) define Enterprise Architecture (EA) like “Set of views and prescriptions that guide a coherent design, processes implementation, structural organizational, and ICT’s provider into an organization” ; on this concept, artifacts or elements were produced in the design or implementations of enterprise architecture.

Enterprise architectures can enable the firm initiatives to help achieve strategic business objectives in a flexible manner that facilitates the integration of processes and systems to produce a project that contains a design business components and a component of the ICT’s.

This strategic model involves enterprise architectures, ICT’s and the analysis of the key processes of the manufacturing SME’s.

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Some of the troubles that these firms present are showed in the Figure 1, in form of a SWOT Matrix (Strengths, Weakness, Opportunities and Threats) previously identified, some of these are: Access to finance resources, qualified personnel, good relationship with clients in the row of strengths, the weakness identified are: Insufficient production infrastructure, lack of computer strategy, human resources processes, and innovation technology.

The characteristics detected by the SWOT matrix were considered for the design of the strategic alignment model.

Researches and studies in Europe indicate that the EA is a trigger for transformations in companies , Orantes, Gutierrez and Lopez mentioned that the company should be constantly evolving, redefining business processes to achieve business architecture which is the basis for subsequent architectures like applications and technology architectures.

The Figure 2 shows the main components of the proposal model, where three components are associated to form the strategic alignment model, these are: Key business processes, ICT’s, and enterprises architectures like a driver where all components will be integrated.



Figure 1: SWOT Matrix

The first activity was to identify the key business processes of the company’s study case. These were identified like :

- Distribution.
- Finance.
- Human Resources.
- Information Technology.
- Quality.
- Sales and Marketing.
- Production.
- Product Development.

Statistical information obtained from a pilot sample about ICT’s on manufacturing SME’s, provide interesting information related to the case:

- 85% to 95% of the companies have automatized their management processes with information systems in finance, clients, providers, billing, selling, and others that help firms in the management.
- 45% have software for Computer Aided Design-Computer Aided Manufacturing (CAD-CAM), giving support for the design of products or development of new.
- Only 9% of the companies have a plan for EA.

These findings provide a view about the needs in EA for the manufacturing SME’s.

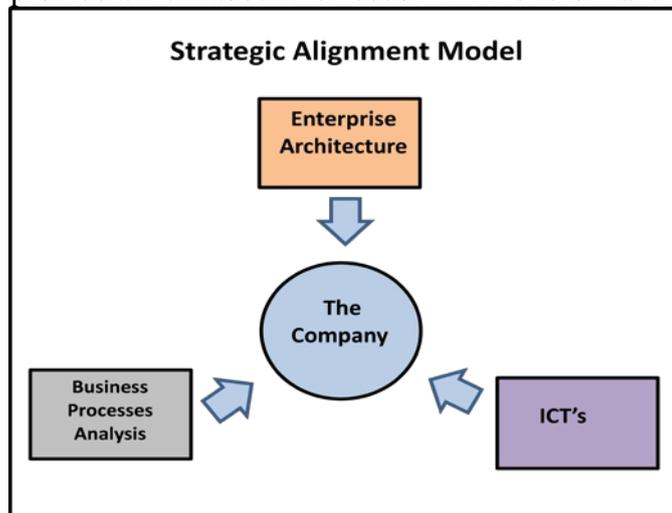


Figure 2: Strategic Aligement Model

With these premises, have been constructed the partial architectures that forming EA, the first is the Business Architecture (BA), the main goal is to define the business, documenting organizational structure, identifying and defining business functions and processes relying on strategic planning with their areas of interest. The BA involucres some elements of the company like mission, vision, objectives, goals, values and policies; business processes, procedures and functions; organizational structure, situational analysis, customers, markets, products and long, medium and short strategies.

As a result of BA, was redefined the Strategic Planning of the company with the definition of four strategic objectives related with production and quality processes, compete in international markets, human resources, and logistics processes.

Once the BA has been designed, the next step is related the business processes with computer applications, where has been found some processes that has not been supported by computer applications and technology.

These processes were: Human Resources, Logistics, Production, and Quality.

The three components of the model were linked through EA, involving ICT's and key business processes.

The results of the strategic alignment model are showed in Figure 3.

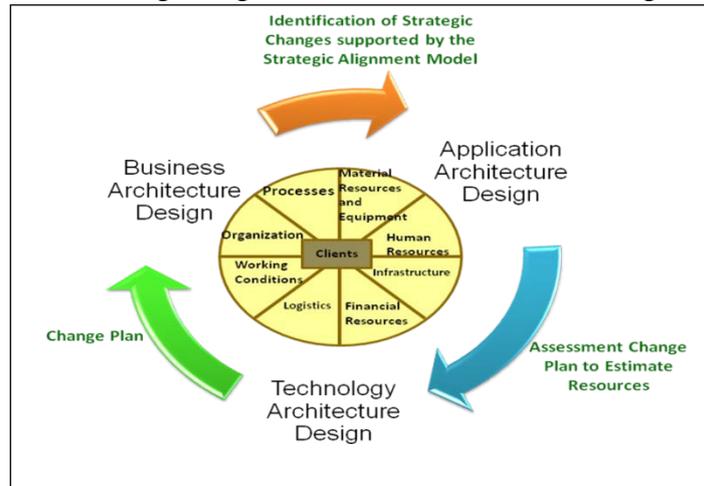


Figure 3: Strategic changes driven by the Strategic Alignment Model

As a result of the strategic changes two areas from the organizational structure were added: Human Resources and Logistics; the justification was that the firm does not have human resources area for the training of the employees, and logistics are required for the management of the resources from the beginning of the value chain to final assembly.

Other needs identified like the strengthening of the market position, the total quality culture, and the training of human resources to achieve improved organizational climate and consequently on the productivity of the entire company.

By the applications side, the basic web page of the company with information about production processes, history, clients, and contact was designed and implemented; achieving an increase in sales of 7% monthly.

## Conclusion

This project helped to meet the needs of SMEs companies to propose affordable solutions that make business management resources and technology to solve problems.

The strategic alignment model through the Enterprise Architecture methodology applied in this medium business has detected the elements shown with a strong emphasis on the changes that are required for the purpose of aligning the processes with ICT's.

The application of the model has been successful in the mid-market as it has produced a series of changes within the company to achieve the integration of processes which has improved production rates and competitiveness.

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