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Central banks and their policies; Macroeconomic-Aspects of public finance, Macroeconomic policy and general Outlook: Policy objectives, Policy designs and consistency, Policy coordination, Fiscal policy, Public expenditures, Investment, and Finance, Taxation, Comparative or joint analysis of fiscal and monetary or stabilization policy, Incomes policy, Price policy, Studies of particular policy episodes, General Outlook and conditions and other topics related to Social Sciences.

Presentation of Content

In a first article we present, *Leadership in Mazatlan's hotel industry*, by LÓPEZ, Beatriz, with adscription in the Universidad de Occidente, in the next article we present, *Adoption of agile development methodologies* by NUÑO, Carlos & FRAGOSO, Héctor, with adscription in the Universidad Iberoamericana, in the next article we present, *Success case - reinventing communications through the implementation of cisco unified communications in a bank of niche. Innovative response to the growing demand for communications, offering corporate efficiency and reducing costs in the process of replacing technologies* by GALVÁN-PONCE DE LEÓN, Valther, with adscription in the Universidad Iberoamericana, in the next article we present, *Optimization of the calculation times of the business process of production lines through the use of information technology* by MENDIOLA-PEÑA, Isabel, with adscription in the Universidad Iberoamericana.

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Leadership in Mazatlan's hotel industry**Liderazgo en la hotelería de Mazatlan**

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Abstract

In this paper modern administrative models are proposed of leadership styles that require managers of companies in the hotel industry for the competitive development of organizations. For this an approach is made to hospitality through an exploratory research and theoretical review documentary that leads us to review the development of leadership in organizations, from the management theories, theories of motivation and leadership theories, of which important aspects are rescued to guide and to know the new perspectives of the leadership styles that exist in the hotel industry in today globalized context of the XXI century facilitating the performance of the leader and collaborators, the development of the organizations, its subsistence besides of maintaining competitiveness in the market. To take again the new perspectives of the leadership styles implies to leave behind old models in which the employee were visualized as a mechanic entity reaching a new stage where a need humanized way of leadership is conceived. For the above, the old administrative standards used in older eras have to be overpassed, regarding that certainly at the time, were probably on par with the demands of those times and were effective as to what was needed. It is important to mention that leadership has evolved through different emerging methods that are going to be exposed throughout this document.

Resumen

En el presente trabajo se proponen modelos administrativos modernos de estilos de liderazgo que requieren los directivos de las empresas del sector hotelero para el desarrollo competitivo de las organizaciones. Para ello se realiza un acercamiento a la hotelería a través de una investigación exploratoria y revisión teórica documental que nos lleva a revisar el desarrollo del liderazgo en las organizaciones, desde las teorías de administración, teorías de motivación y teorías de liderazgo, de las cuales se rescatan aspectos importantes para orientar y conocer las nuevas perspectivas de los estilos de liderazgo que existen en la industria hotelera en el contexto globalizado actual del siglo XXI facilitando el desempeño del líder y colaboradores, el desarrollo de las organizaciones, su subsistencia además de mantener competitividad en el mercado. Retomar las nuevas perspectivas de los estilos de liderazgo implica dejar atrás viejos modelos en los que el empleado era visualizado como un ente mecánico alcanzando una nueva etapa donde se concibe una necesidad humanizada de liderazgo. Para lo anterior, se deben superar los viejos estándares administrativos utilizados en épocas pasadas, respecto a que ciertamente en su momento, probablemente estuvieron a la altura de las exigencias de aquellos tiempos y fueron efectivos en cuanto a lo que se necesitaba. Es importante mencionar que el liderazgo ha evolucionado a través de diferentes métodos emergentes que van a ser expuestos a lo largo de este documento.

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Introduction

According to the context of contemporary hotel organisations and the globalised and competitive environment, they have experienced various changes in economic, political, cultural, market and technological issues, among others, which have made them act through a large dose of creativity and innovation with the capacity to adapt and defend their own identity, as well as the capacity to think and discern and to collaborate with heterogeneous positions.

There is undoubtedly greater openness to the environment, adapting the internal context to the current unstable and unpredictable variations.

On the economic side, the development of accommodation companies has been influenced by a financial crisis through the instability of the dollar, unemployment, and the decrease in investments. In the political aspect, there have been openings to large international chains, as well as the expansion of transnationals with a diversification of activities capable of satisfying the consumption needs of the population.

In the cultural aspect, there is a structural transformation tending to the demands of modernity and willing to change, it is necessary to observe and attend to the consumption trends of the population, as well as habits and customs.

Quality and design standards are strengthened towards an international business culture. The market is influenced by the creation of quality products and services, in continuous development and improvement and by the diversity of products and the demand for them, as well as the increase in production.

Technological changes have generated the development of new technologies that are linked to innovation, the search for sustainability, as well as information and communication technologies that make companies establish training programmes for personnel to be prepared to adequately face and/or through new styles of work and service provision, this panorama of uncertainty.

Context of the hotel sector

The organisations in the hotel sector are not exempt from these changes, the global context explained above permeates within these organisations, specifically the human resources, since the hotel industry is characterised by the fact that the main product it sells is service, and the quality of service provision depends on the attitude of the human resources, and this service attitude is in turn motivated by various factors related to the way of managing that is generated by the leadership styles of its executives.

The organisations of the hotel sector immersed in the tourism activity in Mexico are the pillar of tourism and have become an important support for the national economy. According to information from the National Institute of Statistics and Geography,³ the tourism sector contributes 12% to the national GDP in 2012 and provides employment for 2.5 million people. Tourism activities have created a large number of jobs (1,129,507 accumulated as of June 2012 according to the National Tourism Business Council⁴ with data from the Mexican Social Security Institute⁵).

Analysing the list of international arrivals according to the UNWTO, it can be concluded that it has lost position, measured in terms of international tourist arrivals, as it has dropped from 10th place in 2010 to 15th place in 2013 (World Tourism Organization⁶ and the Ministry of Tourism⁷). During the first quarter of 2014, foreign exchange earnings grew by 14.8 per cent to 4,436.4 million dollars, compared to the same period of the previous year, and the arrival of international tourists, i.e. by air, grew by almost 9.6 per cent compared to January-March 2013, reaching 4,260,000 people (Sectur, 2014).

Resulta importante mencionar que la hotelería se caracteriza por que el producto principal que The quality of service provision depends on the attitude of the human resources, and this service attitude is motivated by various factors related to the way of managing, which is generated by the leadership styles of its executives.

Development

The ways of managing and/or leading in organisations have been going through a process of modernisation that has led to challenges such as having competitive organisations. Over time, leadership theories have been structured according to the needs of organisations and in relation to the trends of uncertain contexts. However, the 21st century has been decisive for the evolution of the study of leadership, since new styles have emerged that aim to confront the globalised context that has been experienced since that time.

At the time of the scientific management theory (1856-1915), this management reflected some deficiencies in its way of working, being conducted under an autocratic leadership style far from skills and managerial skills, exercising control of work, rules, disciplines towards the worker without considering him in his tasks, psychological aspects were not considered, nor fatigue, there was distance between workers and employers, so that relations at work were of boredom and demotivation.

At the time, this management style was able to work because the external organisational environment behaved in a stable manner. Among its representatives were Taylor, Gantt, Gibrenth.

The classical theory (1841-1925), which corresponds to the 20th century, establishes an autocratic management like the scientific administration, without taking into account the human element, managing under a rational structure of authority, discipline and unity of command, the relations with the workers were not very positive as they only did what the bosses told them to do.

This was caused by a formal organisational regime, based strictly on principles aimed at improving managerial practices, oversimplifying the organisation, emphasising more on structure and concentrating its efforts on explaining the administrative workings of the organisation. Among its representatives were Fayol, Guilik, Urwick.

Following the evolution of administrative theories, the theory of bureaucracy (1940-1950) emerged with the aim of improving operations. It focused on structure, incorporating rationality in a way that was no longer limited, and attempted to open up to the experience and merits of workers. It also analysed formal and informal groups, social and material rewards and the effects of one on the other from a sociological point of view (Audirac, De León, Domínguez, López, Puerta, 2003). However, employees had no interest in the organisation, there is conformism in their behaviour due to the existing formalism. Its main representative was Max Weber.

Later the studies of human relations theories (1943) in this theory the way of managing starts to be based on a democratic leadership style, possibly pointing to the first ideas about leadership and greater responsibilities for the workers, which makes a difference in positive relations towards work for the human element. It prioritised the values of the workers within it. The democratic style involves the worker, taking into account their needs, feelings, attitudes, motivations, not only looking at the individual, but relating to them, considering people as social beings, focusing on worker satisfaction, it is a humanistic management. Workers' responses to this management style are motivational. Its main precursor was Elton Mayo.

Behavioural theory (1950-1960) points out that organisations are complex decision-making systems. Decisions begin to be given importance and workers are supported in the decisions they need to make. The organisation being a system, there is no single decision-maker. In this school, management was concerned with explaining the behaviour of workers, as well as the fact that organisations have their own life and culture. Its main precursor was Herbert Simon.

In the contingency theory (1960-1970), the organisation has to face the challenge of different environments with which it maintains an interrelationship, since its survival depends on this, which gives the organisation the recognition of an open system. Management is interested in efficiency, adapts its structures to environmental requirements and incorporates rational systems.

They assert that in spaces with different environments the requirements on organisations vary. That is, environments characterised by uncertainty and rapid rates of change, in market conditions or technologies, as well as the growth of new products and services, present different demands or more demanding threats and opportunities than in organisations in placid and stable environments. Its main representatives were Chandler and Burns.

In the theory of human relations, behavioural and contingency theory, the difference begins to be made in positive relations towards work for the human element, so importance was given to the human factor by prioritising the values of workers within the organisation, allowing them to be involved in work activities and decision making, specifically in the tasks related to their position. In this respect, Barba and Solís (1997) emphasise that there was a natural resistance of the workers in the formal structure of the organisation through informal and interpersonal relationships.

Workers were considered as social beings, taking into account their needs, feelings, attitudes, motivations, not only looking at the individual, but also relating to them and focusing on their satisfaction, facilitating interaction between them and an interactivity and interdependence between them. We were already talking about a democratic style of management. It is a great change due to the fact that the organisation begins to be conceived under a humanistic management and conceptualised as a systematised whole, this caused the workers' responses to this style to be motivating.

Subsequently, the theory of new relationships (1980) arose, which focused on structural flexibility to adapt to the new production requirements in which workers required a higher level of knowledge and skills to handle new technologies; it was no longer enough to "satisfy employees or "unite the group" to obtain the results that the new industry demanded. It demanded new attributes from leaders to cope with this environment. Organisational development seeks organisational change and improvement from a managerial perspective.

The premise of this approach postulates that the work group exerts an enormous influence on organisational behaviour as well as the predispositions of the individual. This causes problems of adaptation of the individual that organisations try to overcome through training and coaching workshops. Its main representatives Drucker, O Donnels.

Organisational development, which emerged in the 1980s and in the 21st century, makes an educational change in group dynamics and human relations with the aim of contributing to the resolution of conflict in organisations and improving their performance, as well as changing the beliefs, attitudes, skills, values and structure of organisations, in such a way that they can adapt better to new technologies, markets and challenges. Among its representatives are Likert, and Mouton with works on participation and motivation that address people's needs through motivational theories.

The theories that emerged in the 80's, it was no longer enough with employee satisfaction or "group cohesion" to obtain the results that the new industry demanded. They focused on adapting the structure to the new production requirements of the workers, such as a higher level of knowledge and skills to handle new technologies. Through these theories, organisational change and improvement was sought from a managerial perspective. An attempt was made to change the beliefs, attitudes, skills, values and structure of organisations so that they could adapt to the new markets.

From the 1980s onwards, we are located in a different era in the timeline, therefore, it was necessary to evolve along with the new management approaches of this generation, taking into account that, in the previously mentioned stages, and when analysing the socio-economic context of each of them, it can be affirmed that the systems used were probably on a par with those of the 1980s, were probably in line with the demands of their time, the conditions in which they lived and in accordance with the administrative knowledge they had, and were even somewhat effective in terms of what was needed, but the time has come to evolve and take a new direction that has already been in place for some years.

The environment surrounding today's organisations is unstable and unpredictable, and the challenge for them is to remain in a competitive environment where information and knowledge are a fundamental part of their competitive advantage.

Modern organisations focus on increasing workers' knowledge. In this stage of information and knowledge, human resources are considered a talent (Siliceo, Casares, González, 1999) with knowledge, skills and attitudes that help them to develop competences to achieve the expected results.

From organisational development, motivational theories also emerged as a great influence on the leader, since using them helps them to modify workers' behaviours, and thus the leader is able to carry out his work in a more adequate way. Most of these theories expose different types of needs in which it would be important for managers and leaders to take into account in order for workers to respond to the different personal and work-related stimuli.

A classification of different motivational theories emerged as: 1) content theories, 2) process theories and, 3) reinforcement theories. Leaders can draw on one theory or take parts of several to form their own, or apply the one that best corresponds to the situation in which they find themselves (Lussier and Achua, 2008).

Content motivation theories focus on explaining and predicting behaviour based on the motivational needs of employees, within these theories emphasis is specifically placed on Maslow's (1943) hierarchy of needs theory who considered that employees can be motivated according to five levels of needs (Lussier and Achua, 2008) which are: 1) physiological (which are the primary or basic needs of people, such as food, air, shelter, sex, etc) 2) security (the individual needs safety and protection) 3) social (people seek friendship, acceptance and affection) 4) esteem (recognition of achievement, enjoyment of personal confidence and prestige) and 5) self-relation (growth, achievement and progress are sought).

Within the same content theories, Herzberg's (1959) bifactor theory was also considered, which proposed that employees are motivated by intrinsic or motivational factors (motivation comes from within people such as: achievement, recognition, rewards) rather than by extrinsic or hygienic factors (motivation comes from external sources such as: salaries, job security, working conditions, etc.).

And to conclude with content theory, there is McClelland's (1966) acquired needs theory, which posited that employees are motivated by their needs for achievement, power and affiliation. Employees with high achievement needs are recommended to be motivated by giving them non-routine and challenging tasks with clear and achievable goals. Employees with a need for power should be allowed to plan and control their work as much as possible. Also include them in decision making.

These people tend to perform better on their own than as team members. And employees with high need for affiliation like to work in teams, they derive satisfaction from the people they work with, rather than from the task itself.

Process motivation theories focused on understanding how employees choose to behave to satisfy their needs, these theories are shaped by the equity theory developed by Adams (1963), who proposed that employees are motivated when they perceive that there is equality between what they contribute and what they get. This theory of motivation is based on the assumption that individuals, working under conditions of exchange of benefits with the organisation, are motivated by a desire to be treated fairly at work. The theory examines discrepancies within the individual after he or she has compared his or her degree of achievement in reference to another person. (Gibson, Ivacenvich, Donnelly, 2003) considered that maintaining employee perceptions of fairness is a fundamental aspect of the role of management.

Expectancy theory developed by Vroom (1969) proposed that employees are motivated when they believe that they can perform the task, that they will receive a reward for performing the task and that the reward will justify the effort expended in performing the task.

His theory is based on valence (orientations towards outcomes: rewards, money) expectations (different expectations and levels of confidence about what they are capable of doing) and instrumentality or means (employees' perception that they will actually receive what is promised by management). This model argues that motivation is the product of how much you want something times the likelihood that a given action will achieve it. The formula is valence X expectation = motivation. The performance of an employee is based on individual factors such as personality.

To conclude the classification of theories, there are also reinforcement theories that propose that consequences of behaviour motivate people to act in a certain way. To manage desirable behaviours, there are four types of reinforcement: 1) positive reinforcement, 2) negative reinforcement, 3) punishment and 4) extinction.

Positive reinforcement states that for there to be desirable behaviours there must be attractive rewards. Negative reinforcement states that if the person does not respond appropriately, a reprimand is applied. Punishment is applied so that an undesirable behaviour has an undesirable consequence. Methods used include hostility, withdrawal of privileges, fines, demotion, and dismissal. Extinction is applied when it seeks to reduce or eliminate an undesired behaviour by removing a positive reinforcer.

Along with management theories and motivation theories, leadership theories were developed that reinforced some aspects of management approaches, serving as orientation guides for leaders and their performance, which also had their evolution until reaching the new leadership styles that face this second decade of the 21st century.

One of the first leadership theories that emerged was the trait theory in which researchers have not been able to discover leadership traits or characteristics that relate them to the success of organisations. However, according to studies conducted in different organisations, ambition and energy, desire to lead, honesty and integrity, self-confidence, intelligence and relevant job knowledge are associated or have been more common in most of these studies (Davis, Newstron, 2001).

The behavioural theory that emerged in 1961 really focused on what leaders do, not on their qualities. Different patterns of behaviour are observed and classified as "leadership styles". The general approach used by leaders in human situations has employed terms such as: (a) autocratic, which makes decisions individually, informs employees what to do and supervises them very closely; (b) democratic, this encourages worker participation in decisions, works with employees to determine what needs to be done and does not supervise employees very closely; (c) anarchic, this encourages worker participation in decisions, works with employees to determine what needs to be done and does not supervise employees very closely; c) anarchic, is the anarchic or permissive leader who uses a laissez-faire policy, avoids power and responsibility, relies heavily on the group to set the group's own goals and solve its problems (Bolden, Gosling, Marturano, Dennison (2003).

Situational and/or contingency theory focused on identifying the situational variables that best predict the most appropriate or effective leadership style to fit particular circumstances. Situational circumstance theories, which were developed to indicate that the style used depends on factors such as the situation, the people, the task, the organisation, and other environmental variables. Contingency theory points out that no one trait was common to effective leaders, nor was any one style effective in all situations. Thus, researchers attempted to identify those factors for each situation that influenced the effectiveness of a particular leadership style.

The contingency model points out that if the situation varies, so do the leadership requirements. Several situation-oriented leadership studies have been conducted such as Fielder's model called "contingency theory of leader effectiveness" which has been used to determine whether the leadership style is task-oriented or relationship-oriented, and whether the situation (leader-member relationship, task structure and power by position) corresponds to the leader's style to maximise performance. Another study is House's model called "path-goal leadership theory which is used to determine the leadership style (directive, supportive, participative or achievement-oriented) appropriate to the situation (subordinate and environment) to maximise both performance and job satisfaction.

The situational or life-cycle model of leadership was developed by Hersey and Blanchard (1960) referred to the emphasis of the situational model as being on the followers and their level of maturity. The leader must appropriately judge or intuitively know the maturity level of the followers and then use a leadership style that matches that level. And the situational model developed by Blake and Mouton (1968) created the managerial grid, popular among managers as a tool for identifying their style. The grid is based on the leadership style dimensions of concern for people and concern for production, which essentially replicates the dimensions of consideration of appropriate leadership styles.

Finally in transformational leadership theory in the 1980s, the central concept is change and the role of leadership in the conception and execution of organisational performance transformation. It focused on the transformational capabilities of leaders, rather than on their personal characteristics and their relationships with followers. It is based on changing workers' core values and attitudes towards their work, as the transformational leader encourages worker participation in decisions and challenges, helping the leader to create the organisation of the future on a day-to-day basis. In this type of leadership, the leader has the great opportunity to transform, innovate, convert, adapt and develop new forms and ways of doing things better. It fosters teamwork within and outside organisations and companies; it even makes him/her a participant in decision-making, creating a concept of co-ownership (Bass and Avolio, 1989).

Findings

Now, after analysing the context of the hotel sector in relation to leadership in 5 and 4-star organisations, the following findings were found. In this research, the hotel industry in Mazatlán is characterised by the fact that the majority of the hotel establishments are regionally owned, being the owners themselves, who from the beginning had assumed the leadership of their organisations, occupying the highest hierarchical positions, in some cases without having the required professionalisation for the development of the leader's functions. The same happens at the other levels of the organisation, specifically with area managers.

Without going as far as generalising, but in the general behaviour of the accommodation company, the leadership style of the executives in the hotel industry in this tourist destination has been related to autocratic leadership styles, which seek to make themselves obeyed, to make decisions arbitrarily, to designate the tasks of the worker, and to indicate their specific functions. For this reason, it is considered that in the 21st century it is not feasible to apply these leadership styles that go back to old-fashioned models, negatively impacting the boss-subordinate relationship. On the other hand, although leadership training is provided, it is not followed up and there is no feedback that reflects that what the area managers have learned is put into practice, so the evaluations in this respect are subjective.

However, with the emergence of the globalisation phenomenon, employers have gradually become aware of this critical situation and have become more involved with the company and its workers. The leadership style has been changing from an authoritarian style to a participative style, although with certain limitations in terms of what the globalisation context demands and the empathy that should be generated between the highest authority and its employees. This gradual change is at the same time related to situational leadership in which the maturity of subordinates is developing (Hersey and Blanchard (2010)). As explained in the following figure, upon reaching the stage of worker maturity, which Hersey and Blanchard (2010) define as the desire for achievement, the leader becomes more human, pays attention to the needs of the worker and takes them into account when delegating, the worker gains confidence in their work, achieves greater experience and becomes self-controlled.



Figure 1 Situational Leadership
Source: Hersey-Blanchard (2010)

As possible alternative solutions, it is proposed through this study that companies in the hotel sector should be interested in knowing and applying the current leadership styles that are needed for the different situations that arise and be prepared for this. It is recommended that the training they provide should have the necessary follow-up so that, based on the results obtained, they can continue with the appropriate training that favours the development of leaders and establish the professionalisation required for their exercise. In addition to carrying out, applying and developing a respective strategic planning based on leadership that has an impact on the organisation's results.

Conclusion

The analysis of this research leads us to reflect on the need to leave behind the old models and take up the various ideas and considerations provided by the current administrative leadership models of the 21st century, which one of their main characteristics in relation to the management of human resources is the humanistic treatment where the individual is already seen as an intelligent person, is given the opportunity to participate, which leads to flexible organisational structures.

Another big change is that the individual has the ability to work in a team, adopting ideas for solutions and improving processes. All this is a fundamental part of the new organisational models and it is here that the manager and/or leader will be in charge of leading this team towards the same goal, which is why he/she must have a great knowledge of how to treat the employees and also give an important place to the human resources area within the organisation, this is where we talk about a developed and exercised leadership. In addition to encouraging modernity in our systems, in relation to human talent, with the aim of adopting it in organisations that want to manage to stay in a competitive context.

To this end, as a proposal, there is talk of leadership oriented towards the integration of organisational processes, which seems legitimate, since all areas must be interconnected and well coordinated, in such a way that they achieve a harmony that has an impact on the achievement of results.

Finally, the leader must be predisposed to change and to the implementation of new ideas, have an open mind towards new horizons that could be beneficial for the company itself.

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Adoption of agile development methodologies

Adopción de metodologías ágiles de desarrollo

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Abstract

The digital technologies are transforming our world as deeply as written, the changes threaten all enterprises in all fields. Each company should be reinvented or eventually go out of business. Agile has potential for companies respond in fluid and sensitive manner as required by the context of current digital technologies. Agile methods have been adopted in a wide variety of organizational contexts; some methods are more suitable for certain organizational environments than others. In this article we review aspects more important that an organization should be considered for adopting agile software development model. The agile model adoption in technological areas is as important as its adoption in any area to participate in the development of software projects. The management support is essential to lead software development projects to the expected success.

Resumen

Las tecnologías digitales están transformando nuestro mundo tan profundamente como escrito, los cambios amenazan a todas las empresas en todos los campos. Cada empresa debe reinventarse o acabar quebrando. Agile tiene potencial para que las empresas respondan de manera fluida y sensible como requiere el contexto de las tecnologías digitales actuales. Los métodos ágiles se han adoptado en una amplia variedad de contextos organizativos; algunos métodos son más adecuados para determinados entornos organizativos que otros. En este artículo revisamos los aspectos más importantes que una organización debe tener en cuenta para adoptar el modelo ágil de desarrollo de software. La adopción del modelo ágil en áreas tecnológicas es tan importante como su adopción en cualquier área que participe en el desarrollo de proyectos de software. El apoyo de la dirección es esencial para conducir los proyectos de desarrollo de software al éxito esperado.

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Introduction

Agile development methods are a group of system development methodologies that share a common philosophy, values and goals. Their primary goal is to deliver software products quickly with the highest possible value to the customer.

Agile development methods use a rapid iterative and incremental development process with high levels of communication and customer involvement, and the agile approach is more people-oriented rather than process-oriented. This means that it relies heavily on individual skills.

The two most popular agile techniques are Extreme Programming and Scrum.

- XP is a set of principles and practices that aims to enable successful software development despite poorly documented or constantly changing requirements in small and medium-sized teams.
- Scrum aims to manage the development process through an empirical approach by applying the ideas of industrial process control to software development.

Organisational culture is one of the most important tasks to study in the organisation and is very important for the successful implementation of an agile model in software development.

Software development - art or engineering?

People involved in software development generally have an engineering background. A software product can be built in many ways and there is no mathematical model that measures the accuracy of a software design. Other engineering disciplines such as civil, chemical, transport, etc. do have mathematical models that guarantee the efficiency of a product.

In reality, a software engineer cannot guarantee 100% of the success of a product, there are many factors in the different stages of software development that can significantly affect plans, designs, requirements, etc. What he can guarantee is the quality of his product.

In software development, the future is not predictable, you always have to be willing to change. So is a software developer a craftsman? A craftsman has no methods, he is only guided by a set of best practices.

Traditional Development Methodologies

Traditional development methodologies consist of performing each stage of the project in an independent and linear way. Nowadays it is very difficult to document all the requirements at the beginning of development projects that satisfactorily meet the needs of the users.

The main disadvantage of the married development methodology is its responsiveness to changes and the time the business has to wait for a functional product. As the project progresses, the cost to remedy errors from previous stages is usually very high, mainly because the team must go back one or more stages to correct the problem.



Figure 1 Traditional Software Development (Consortium, 2012)

Software Development

An agile methodology always tries to omit everything that does not serve to build a product, such as exhaustive and unnecessary documentation. It is important to mention that agile is not fast and it does not mean quality, on the contrary, it is very likely that a bad adoption of the agile approach will result in the failure of a project.

Implementing agile means putting a lot of emphasis on people, rather than processes and tools. A common mistake in organisations working with agile methods is not to consider that people fail.

Unlike a traditional development methodology, agile builds software iteratively, i.e. the project team plans activities and executes them in a short period of time, with the goal of building and delivering business value in the shortest possible time.

Why adopt agile?

The main problem in software development is the delivery of full-featured products on time and within budget. The problems solved by adopting agile methods is the customer relationship.

Companies use estimates for feasibility analysis and project planning. However, it is difficult to have enough similar projects in recent years in order to calculate reliable estimates. Requirements, development teams, technologies and customer needs change with every project, and most developers do not develop exactly the same product twice.

In order to build the product that the customer really needs, constant customer involvement in the project is required. This involvement involves interaction between the customer and the development team in order to have a quick response to changes.

The agile method allows the software to be more closely aligned with the user's needs. A user is not clear about their needs when the project starts, with agile the team can continuously explore the business needs and refine them in each phase (iteration).

Agile means following the following principles as part of the software development philosophy (Consortium, 2012):

- Satisfy the customer through early and continuous delivery of valuable software.
- Deliver functional software frequently.
- Welcoming changes to requirements even late in development.
- Work together on a daily basis throughout the project.
- Surround the project with motivated individuals.
- Face-to-face conversation.
- Agile processes promote sustainable development.

- Continuous attention to technical excellence and good design.
- Retrospectives.
- Simplicity.
- Self-organising teams.
- The primary measure of progress is functional software.

Adopting Agile in Traditional Environments

It is difficult for a company with a traditional development process to respond quickly to unexpected changes, especially if the implementation phase has already begun. Each modification risks affecting the project plan and the organisation of the process.

It is difficult to keep contract variables (scope, price, and time) fixed over time. Therefore, agile companies regulate their customer relationships with flexible contracts instead of fixed ones that predefine functionalities, price and time.

Typical solutions for plan-based companies include:

- Trying to anticipate needs that may change over time during the analysis phase.
- Create an initial detailed requirements specification through official documents.
- Applying more restrictions in contracts.
- Simply trying to please the customer and comply with requests.

All these solutions are not satisfactory for a successful software product. Agile companies are less concerned about variations in requirements. They use an iterative process, in which the customer can refine and modify requirements.

Traditional plan-based companies present the product at the end of the project and it is only then that the customer can test the product. This option maximises the risk of requirements understanding by the development team. Companies mitigate this risk by trying to communicate with customers to explain product delivery issues and use prototypes to allocate additional time in the budget as a precautionary measure.

Agile companies aim to deliver the final product faster as many times as possible, as the team builds products with functionality of value to the customer. The delivery of functionality is incremental within a sequence of releases that appears to best meet customer needs.

Both agile and plan-based companies are looking for the best developers. They have a clear preference for developers who can work in teams over developers with high individual skills.

The success of a project based on agile methods depends to a large extent on the experience of the team members in the methodology and work discipline. Teams perform better when they stay together for a longer period of time than teams with less time working together.

Most blueprint-based companies claim to be familiar with agile methods. However, many project managers have only a superficial knowledge of them. People (customers and developers) do not easily accept drastic changes in traditional environments.

The main causes of non-adoption of agile methods are superficial knowledge of the discipline, resistance to change within the company and customers, and large or geographically separated teams.

While environmental variables (requirements and technology) affect all software development projects, the agile approach can better protect the customer from most of the negative effects.

Development areas are often the drivers of organisational change to adopt an agile approach to software development. Software engineers believe it is important to deliver the highest possible value to their customers. The mistake these organisations make is not involving customers and stakeholders intensively at every stage of the project.

When starting the development of a project, it is important to define the high-level project requirements and to set out the product architecture and design framework. It is recommended that the above activities are developed in an initial iteration (research phase and initial project framework).

Shortcomings of the Agile Approach

Organisations implementing agile should consider the weaknesses of the agile model. The most important of these are listed below.

- Risk management in projects is ambiguous.
- No specific architectural design activities
- Responsibility is not always assumed as it should be
- Ignores the importance of the contractual (commercial) relationship
- Difficult to apply in large groups (more than 10 people)
- Physically distributed work teams make it difficult to understand requirements and to communicate with the client.

Conclusions

Agile methods are becoming more and more common in today's software development industry. Companies see the advantages of applying such practices, but it is difficult to change the minds of many people to understand the advantages of applying agile.

People are fundamental in agile methods, it is important to develop a model that helps to work with physically distributed work teams. Currently the software development industry has specialised staff in different cities and agile does not yet have a model for working on distributed projects.

Agile has proven to be an excellent alternative for software projects, and especially for projects where the urgency is high, the creation of a team spirit, the need to deliver software products that generate value to the customer, and the need to create a team spirit. In today's world I see very few environments where the needs are not urgent.

The experiences and achievements of the agile community, of which I have been privileged to be a part and a driving force, show that agile adoption does not have to be mandated from above and that it does not need to be perfect, planned, or regulated in order for it to take hold and thrive.

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Success case - reinventing communications through the implementation of cisco unified communications in a bank of niche. Innovative response to the growing demand for communications, offering corporate efficiency and reducing costs in the process of replacing technologies

Caso de éxito - reinventando las comunicaciones mediante la implantación de las comunicaciones unificadas de cisco en un banco de nicho. Respuesta innovadora a la creciente demanda de comunicaciones, ofreciendo eficiencia corporativa y reduciendo costes en el proceso de sustitución de tecnologías

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Abstract

Unified communications systems can be the key to improve business strategy reducing costs and focusing faster and timely customer care, maintaining anytime, anywhere by connecting clients, employees and business partners. The case details technological limitations of Consubanco who lived a hell with their previous communications infrastructure, it caused inefficiencies in communication processes, translated into delays in decision making, slowing down business processes and reduced productivity. After analyzing the case and take appropriate measures to replace this technology Consubanco managed through Cisco Unified Communications to connect employees, partners, suppliers and customers with the information they need so. As well as access and share video on the computer equipment of these, even if its employees were traveling, and demand, as easily as making a phone call. As a result they have facilitated better interactions between the teams, bringing together people dynamically, virtual groups and teams. Finally after a process of alignment with business objectives were able to make the greatest contribution, which was to innovate in the value chain of the business by integrating collaboration and communications into applications for the operations center of the company, business processes (sales force) and the area of human resources.

Resumen

Los sistemas de comunicaciones unificadas pueden ser la clave para mejorar la estrategia empresarial reduciendo costes y enfocando una atención al cliente más rápida y oportuna, manteniéndose en cualquier momento y lugar conectando a clientes, empleados y socios comerciales. El caso detalla las limitaciones tecnológicas de Consubanco que vivía un infierno con su anterior infraestructura de comunicaciones, provocaba ineficiencias en los procesos de comunicación, se traducían en retrasos en la toma de decisiones, ralentizaba los procesos de negocio y reducía la productividad. Tras analizar el caso y tomar las medidas oportunas para sustituir esta tecnología Consubanco consiguió a través de Cisco Comunicaciones Unificadas conectar a empleados, partners, proveedores y clientes con la información que tanto necesitan. Así como acceder y compartir vídeo en los equipos informáticos de estos, aunque sus empleados estuvieran de viaje, y bajo demanda, con la misma facilidad que realizando una llamada telefónica. Como resultado se han facilitado mejores interacciones entre los equipos, reuniendo personas de forma dinámica, grupos y equipos virtuales. Finalmente después de un proceso de alineación con los objetivos de negocio fueron capaces de hacer la mayor contribución, que era innovar en la cadena de valor de la empresa mediante la integración de la colaboración y las comunicaciones en las aplicaciones para el centro de operaciones de la empresa, los procesos de negocio (fuerza de ventas) y el área de recursos humanos.

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Introduction

What is Unified Communications?

More and more often we hear the term "unified communications", but what does it mean and why taking relevance in the telecommunication environment is. Unified Communications are all those functional elements that today allow us to have effective communication: functions as a switch that provides the capabilities of audio conferencing, read voicemail, email, fax, schedule work sessions on the Internet, Sharing information among multiple users simultaneously and even the ability to interact with various fixed and mobile devices are functional elements that could be considered within a suite of communications.

The importance and value of unified communications is to give more control to the end user to access simply and through intuitive interfaces to all these communication services and give ease to the user to do so through their preferred device, either a PC, laptop, smartphone or tablet at the time and place the user wants.

From the point of view of service providers, referring to telecommunications companies (telcos), this implies a collective integration of technologies, to be simplified to the point that the end user never give aware of the complexity that this may represent. However, the other user will notice how simple and easy it is now to have a suite of communications on their devices with the ability to improve their quality of life and business relationships with customers and suppliers.

Now it will be easier to navigate, have effective meetings anywhere in the world or make calls when the user needs it without having to worry about time or costs. Having Internet access using these services, now conceptualized as cloud computing possible.

Access to these intelligent telecommunications is not exclusive to large corporations, now SMEs can access without much investment or technical personnel expert. Doing so could benefit by increasing their productivity, mobility and getting turn considerable savings.

Its implementation in a niche bank

Chedraui Group, is a leading chain supermarkets, aware of the need to bring financing to their customers to purchase consumer goods, under the general direction of Mr. Sergio Chedraui, initiated in 2001 a financial company that called Consupago that began marketing the brand: Sistema de CréditoPaguitos.²

With a constant thrust and direction to the 2003 Credit System Paguitos already operating within all Chedraui stores through modules which called "Paguitos", which were given dissemination and promotion to the appropriations offered.

The success of the brand in the first 2 years of operation, allowed the development of a new product: personal loans through the discount via payroll, which is today the institutional business line and the main product.

With a steady growth in 2005, Consupago makes a strategic alliance with Sherman Financial Group, allowing them to have a serious knowledge and enhanced consumer credit market.

By 2008, there were over Consupago billion portfolio, with annual growth rates above 200%. To become a leader in the personal loans market discount via payroll, with presence in major capitals across Mexico through our branches solid institution, with more than 1,000 employees the technological aspects of the collaboration between these began to be more relevant.

In 2012 he established himself as Consubanco Multiple Banking Institution and the time counting for more than twelve years' experience in providing financial services and offering innovative banking products onto the market, its new Credit Cards, which provide solutions to the credit needs of many customers.

Ironically the same year (2012) given its exponential growth Consubanco began using multiple communications platforms, making increasingly complex network and its administration, that year had multiple falls seriously affecting service to the business.

Adding to the problem, the acquisition and merger with different companies, which increased its infrastructure causing practically having a salad of different technologies while operating in a decentralized way; for example had four phone systems from different brands, a network separated geographically into four points. The business simply demanded stability in communications bandwidth and tools to collaborate.

The limitations that were primarily dealt Consubanco direct concern to the business due to reduced service levels in communications, combined with the constant corporate growth and consequently taking inefficiencies in communication processes, degrading productivity of the institution.

In late 2012 and early 2013 the IT area of Consuabanco decided to take actions that allow root to a solution to this problem and it was during this process that found that Cisco Unified Communications offering a highly secure, high-quality experience.

This will help Consuabanco to:

- Power to provide online support to their employees and their branches (Using Cisco Webex).
- Being able to do online training and recruitment (Using Cisco Webex).
- Create extensions of the corporate network to mobile devices so that executives can be productive anywhere.
- Adapt more quickly to changes in their business.
- Provide stability in communication services.
- For the first time in the history of the company to offer institutional collaboration.

The system of Cisco Unified Communications is part of an integrated solution that includes network infrastructure, security, mobility, network management products, design services, planning, operation and maintenance.

Technological innovation, which occurs with this adaptation to new technological environments, in addition to providing functional advantages over previous forms of communication, increasing available capacity and reduce unit costs.

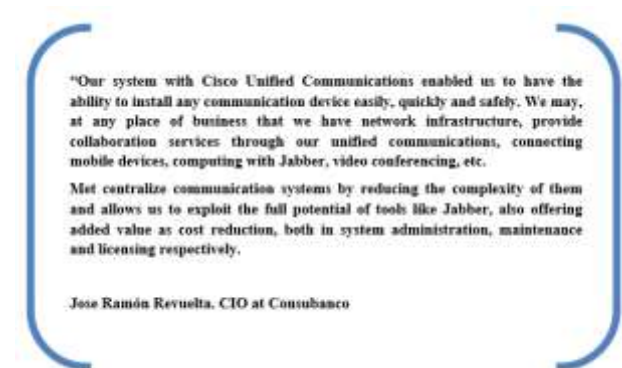


Figure 1

Methodology - Technical description of the solution

To meet the expectations of Consuabanco, and meet the needs that the organization seeks to meet after several sessions of design with Cisco and one of its main trading partners (Unified Networks) the best option chosen was based on the implementation of a Platform Communications with integrated unified messaging system and corporate email, it had an Gateway 3925 supports up to 800 SIP sessions to the primary site and the secondary site is a gateway 2911 which provides up to 200 SIP sessions.

The first counting up to 8 E1 ports plus 2 service modules (4 E1s more) supporting up to 730 users in survival mode SRST and the second with up to 8 E1 ports with only 1 service module two E1s more supporting up to 50 users in SRST.

As the terminal operator 7942G, 7945G and 7962G phones are devices with full-feature in terms of interoperability of VoIP, allow you to communicate by voice over the same data network that uses its own equipment; can make and receive phone calls, put calls on hold, speed dial numbers, transfer calls, make conference, and so on.

In addition to basic call-handling features, phone can provide other, in expanding these offer increased productivity.

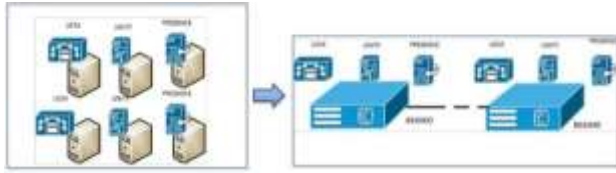


Figure 5 Simplification through unified communications (Self Reference)

After the implementation of tools such as Cisco Webex was obtained:

- Desktop Sharing allows easily collaborate on any project, providing support and training to online audio and video sharing.
- Share video files in real time, and incorporate multimedia into their presentations. (HD up to 720p resolution screen).
- Voice conferencing
- Recording of meetings, including session content and audio.
- After the implementation of tools such as Cisco Jabber was obtained:
- Consubanco business being more productive, anywhere with Cisco Jabber on their mobile and tablet devices.
- Improvement the appearance of presence, instant messaging (IM), voice, video, voice messaging and conferencing from anywhere.
- Provide the opportunity to join telepresence meetings when employees are away from the office.
- Reduce delays in information real-time presence and instant messaging.

Discussions and outcomes of the Project

With the new system of unified communications of Consuabanco Cisco now has a collaboration solution consolidated voice, video, mobility messaging, conference, instant messaging (IM), presence and capabilities contact center a single IP network.

Consubanco use these benefits to gain a competitive advantage, adapt quickly to business changes, increase productivity, reduce costs and improve customer response. The system was fully implemented in August 2013.

Conclusions

Today, it is important for any financial institution to have a unified communications solution that may be able to grow the business and provide features that help save money or increase revenue to help ensure a good ROI.

While the business of a company like Consuabanco grows, the collaboration allows you to add new employees, remote offices and teleworkers with minimal effort and expense.

Collaboration is a crucial component of any successful business. Stay connected with customers, employees, tools and other resources enables an organization's employees perform their work effectively counting systems that allow you to have converged voice, data and video.

Growing businesses need to be scalable and easy to use networks as small and multivendor networks is not cost effective to add new applications and services, in addition to the complexity of having to manage, maintain and finance multiple networks.

In short, if we define in a few words what Consuabanco obtained by implementing unified communications system then we'll find:

- Convergence of voice, data and video
- Expansion of Content and devices
- Increased labor productivity
- Cut operating expenses
- Empower of their workforce

Currently offering unified with the experience to meet the needs of its users makes them more productive and successful in their interaction with the environment of business communications.

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Optimization of the calculation times of the business process of production lines through the use of information technology

Optimización de los tiempos de cálculo del proceso de negocio de líneas de producción a través del uso de Tecnologías de Información

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Abstract

Currently the Information Technology (IT) are fundamental for the development of an organization, so it must be well managed to provide VALUE to the internal or external customers thereof, IT support critical business processes and support process on an organization so, if there is not an IT strategic plan aligned to the strategic business plan it will be impossible obtain the benefits of the area, and it will be impossible to be seen as a profit center or investment center and will remain regarded as a cost center. In this work proposes through consultancy to provide the synergy that must exist between the business and technology providing great VALUE in different corners of the organization through the appropriate use of IT.

Resumen

Actualmente las Tecnologías de la Información (TI) son fundamentales para el desarrollo de una organización, por lo que deben ser bien administradas para proporcionar VALOR a los clientes internos o externos de la misma, las TI soportan procesos críticos del negocio y dan soporte a los procesos de una organización por lo que, si no existe un plan estratégico de TI alineado al plan estratégico del negocio será imposible obtener los beneficios del área, y será imposible que sea vista como un centro de utilidades o de inversión y seguirá siendo considerada como un centro de costos. En este trabajo se propone a través de la consultoría aportar la sinergia que debe existir entre el negocio y la tecnología aportando gran VALOR en los diferentes rincones de la organización a través del uso adecuado de las TI.

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Introduction**About Flexi Group**

Flexi Group was founded in 1935 by Don Roberto Plasencia Gutiérrez, who with little capital and the support of a small group of craftsmen, started a small workshop where he manufactured children's footwear under the brand name CÉSAR.

Mission: To offer through our products and services in the leather-shoe sector, the optimum satisfaction to the consumer and client, sustained by an economically prosperous company, committed to the development of its personnel and the society in which it is located.

Values: Ethics, solidarity, dignity, equity (justice), human development, participation, responsibility.

The social benefit generated by the company transcends to other companies that have been integrated into the Flexi Group's production chain, thus offering job opportunities to more than 4,000 people.

In this case study I describe the consultancy methodology that I carried out in order to add value to a solution within Grupo Flexi with the help of IT.

Problem Description

Flexi Group had a project in 2006 to implement i2 Supply Chain Planner (SCP), which manages the supply chain and incorporated production planning (PP), their process is fundamental and critical to the business and the objective was to:

- Optimise simultaneous production, inventory, distribution and transportation between multiple plants.
- Accelerate the supply chain.
- Collaborate to solve problems.
- Enable demand to be prioritised based on stock security and replenishment requirements.

The information generated is loaded into an ETL (extract, transform and load), a process that allows organisations to move data from multiple sources, reformat it, clean it, and load it into another operational system to support a business process. For Flexi Group, ETL is for production line calculations and warehouse planning.

The time to perform the process was 13 hours so they could not run it daily, they ran it weekly and could not stop production, the implication was basically that if a customer asked for changes in the maquila caused problems of supply to their customer, forcing them to have a higher Target Inventory Level (TIL), if they ask for change, shrinkage, outlets and rescheduling of production.

The technological platform on which this business process was supported was SUN infrastructure with Solaris operating system and EMC, this platform had been acquired in 2005, so it still had a life time of two or three more years.

After understanding and analysing the business process, it was concluded that the operations they executed were floating point; in computing, floating point operations per second are a measure of the performance of a computer, especially in scientific calculations that require a large use of floating point operations. For this type of operations, it was recommended to use scientific computing processing, which is optimised for the operation of large intensive workloads, parallel and algorithmic computations.

Methodology

The process I undertook was a consultative approach in order to get Flexi Group to really see the value within their process through the services and technology solutions that could be put forward.

The methodology I used has been developed during the experience of 10 years working with different clients, with this methodology we seek to achieve different objectives:

- Align the solution with the needs of the business.
- To translate technical benefits into business benefits.
- To be optimal in the use of the resources required for a successful project: human, technological and financial.
- Avoid rework during execution based on a good technological design and devoting the maximum time to project planning.
- Take care of the triple constraint required by the PMI project methodology: time, cost and scope.
- Control the project.
- Reduce the risks that may arise during the execution of the project and that may impact the operation of the company.
- Achieve Quality Assurance throughout the entire process from the analysis and design phase of a project until its completion.

The following points explain the steps I followed in order to demonstrate VALUE through the right solution aligned to business requirements.

Evaluation and detection of Flexi Group's business need, with an understanding of the company's business processes.

Documentation of the business promises that the project can deliver, i.e. the indicators expected from the project.

Information gathering through monitors to document, determine and understand the service levels as well as the current quality of service. Monitoring with IBM-SAP competence centre tools (insight), operating system and disk commands to determine the IOPS (inputs/outputs per second) demanded by the application.

Analysis of the information obtained to generate an adequate design aligned with the business needs. This design contemplates all the technological components in order to provide an integral 'turnkey' solution. These components have to do with processing, disk and tape storage, disk storage network (SAN), high availability clustering scheme, components necessary to be able to back up and restore critical business information in the times required by the business.

Elaboration of an interoperability matrix of hardware and software components.

Elaboration of the Technological Architecture, i.e. dimensioning the size of the components and choosing the types and model of the infrastructure and licensing that covers the requirements of the business.

Elaboration of the economic proposal together with the financial justifications to document the benefits according to the purchasing strategy of the organisation (capex, opex) and knowing if the IT area within the organisation is measured as a profit centre, cost centre or investment centre.

Formalising the scope in technical detail through a SOW, with a clear definition of the deliverables of each stage and their completion criteria in order to move forward in a coordinated way and to rule out different perceptions or understandings that different project stakeholders may have. Identify project assumptions, constraints and risks.

Formalisation of the project management team based on the PMI methodology, identifying sponsors, project managers, technical leaders with the capacity to integrate the different technical specialities required by a technological project and avoid silo work.

Project execution planning and documentation of the WBS, with the communication plan and escalation matrix.

Determining the implementation strategy and the application migration process based on certified SAP migration processes, in order to obtain a painless change for the Flexi Group operation.

Preparation of an Installation Specification Document (ISD), which aims to document the technical parameters and prerequisites comprehensively required by all technological components of the solution.

Elaboration of the Work Plan according to the PMI methodology, i.e. with baseline, critical path, dependencies, resource time, milestones, etc.

Execution of the activities to achieve the implementation of the solution previously planned in the previous steps.

Execution of technical and functional test matrices for the release of the documented deliverables according to the completion criteria.

Closing of the project with a session to corroborate to the Flexi Group project sponsors that the objectives committed to in the project were achieved.

Results and Discussion

Solution Overview

In order to respond to the business need detected and presented to Flexi Group, I considered several technological components that could guarantee the reduction of time in the critical process already described above. The following points briefly detail each of the major components of the implemented solution. For the processing units, we took into account an international SAP benchmark, called SAPS, to measure the performance units of the current machines and to be able to offer only what the operation needs, taking into account the future growth that Flexi Group indicated, the definitions of each one are explained below:

The SAPS (SAP Application Performance Standard) is a hardware-independent unit that indicates the performance of a server with a preset configuration which is within an SAP environment. This unit is derived from the Sales and Distribution (SD) benchmark where 100 SAPS is defined as 2,000 fully processed business order items per hour. In technical terms this performance is achieved by processing 6,000 dialogue steps (better known as screen changes), 2,000 publications per hour in the sales and distribution benchmark or 2,400 SAP transactions.

In the sales and distribution benchmark, "fully processed business orders" means the complete business process of a line item: creating the line item, creating the delivery schedule for a line item, displaying the line item, changing the delivery, publishing a goods issue, listing orders, and creating an invoice.³²

Quality of Service: This is the experience, given in time/period (seconds) that the user perceives when interacting with the application, based on the SAPS defined in the previous paragraph.

Since the SAPS are equivalent to dialogue steps (screen changes in the application), the quality of service in its minimum transactional unit is given in dialogue steps per millisecond.

Storage Units: For the disk storage of the proposed infrastructure, the measurement parameter was GB (gigabyte), MB/sec and pure IOPS (cache free).

IOPS (Input/Output Operations Per Second, pronounced i-ops) is a common benchmark performance measure for computer storage devices such as hard disk drives (HDDs), solid state drives (SSDs), and storage area networks (SANs).

The specific number of IOPS possible in any given system configuration will vary greatly depending on the variables that the tester enters into the program, including the balance of read and write operations, the combination of sequential and random access patterns, the number of working threads and queue depth, as well as data block sizes. There are other factors that can also affect IOPS results including system configuration, system configuration, storage controllers, background operations of the O.S., etc.³³

SAP/IOPS relationship: To technically explain the relationship between SAP and IOPS it must be understood that master and transactional data needs to be loaded into the processing system. The desired ratio for IOPS versus SAP is 0.2 - 0.5 IOPS per 1 SAPS³⁴.

Processing

The technological solution consisted of two scientific 575 computers with power 5+ processor, UNIX AIX 5.3 operating system with the capacity of 12,800 SAPS each to support the SAP guaranteed response time of less than 1sec. per dialogue step. The planning and distribution of the 8 environments in different partitions was carried out with the optimisation of the use of resources (processor, memory, cards, disk) using the characteristics provided by IBM's own technology with which the processor can be assigned in each partition in such a way that if it is required to steal processor it can do so from the other partitions in case it is not occupied, this helps to micro-partition the processors and use much better the performance it can give without the need to buy additional processors that will be used only in its high seasons.

Storage Area Network

A Storage Area Network (SAN) was designed and implemented at the time with a speed of 4Gbps through brocade switches with redundancy in its components and connections made up of an inter switch link (ISL) that allows a single SAN fabric between both sites, and that the servers of Site A can access the storage of Site B and vice versa.

High availability

Three high availability clusters were set up for the production environments with IBM's HACMP (High Availability Cluster Multiprocessing) software running on the UNIX AIX and Linux platform. This guaranteed an availability of 99.98% per year.

External disk storage

The sizing and implementation of an IBM Model DS4800 disk subsystem was carried out, with the redundant characteristics provided by the technology plus the configuration of the protection that can be obtained with the RAID arrangements and the disks that can be placed as spares, it was possible to offer adequate protection to take care of the single points of failure that reduce the level of availability of the applications that support the business processes of Flexi.

The issue of performance, which has implications for the quality of service in the response times of the applications, was taken into account, with the sizing that involves the amount of IOPS demanded by the application and the GB capacity required for storage, taking into account issues of whether the application takes advantage of the cache of the subsystem or goes directly to disk.

Backup Solution

A backup solution was developed and implemented with the IBM Tivoli Storage Manager (TSM) tool, which is a storage administrator that not only helps to back up and restore information but also allows ILM (information life management), it has a DB that automatically controls the recording of tapes and the information that is being backed up in order to avoid operator intervention in the event of needing to restore information at a certain point in time. The design was made depending on the type of data to be backed up. Files smaller than 256K are sent through the LAN as this avoids degrading the performance of the SAN and files larger than 256K must be sent through the SAN, The amount of tapes required for the backup policies that Flexi Group required was taken care of in order not to oversize or avoid having to make purchases in a short period of time after the solution was implemented.

Restoration times are the key when a design is made and, depending on this time, the right amount of drivers were placed in the libraries to ensure that the target time of 4 hours was achieved, as well as taking care of the backups in groups of consistencies demanded by the applications due to the communication that exists between the different environments. We took advantage of the Disaster Recovery Manager that TSM has to protect Grupo Flexi in case of a disaster that could be recovered through the backups in an orderly and automated way.

Heterogeneous Migration Process

It was considered a Heterogeneous migration since the base environment was SUN, which implied a change from Solaris to AIX OS and platform. SAP's own migration methodology was used as a basis to migrate SAP environments and Oracle's migration methodology to migrate the client's I2 environments.

It consists of generating pivot environments to perform the necessary tests and time adjustments for the production transition process in the shortest possible time, which was achieved in less than 24 hours, so the window required for these activities was very well planned and controlled so that Flexi Group did not have interruptions greater than those allowed in its operation.

Solution Diagram

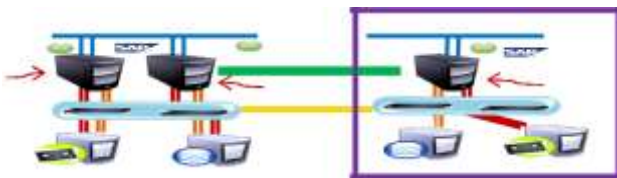


Figure 1

Benefits for Flexi Group

99.98% availability in its applications, which it did not have before.

An improvement in the quality of service (response times) of SAP environments to less than 1 sec. per dialogue step.

Reduced time in its business-critical supply chain and planning process, which triggers associated benefits such as cost reductions due to shrinkage.

Justification of the 3-year TCO and ROI for the investment made by replacing the existing technology, this benefit was compared to the exercise of not changing the infrastructure and continuing with the process time of 13 hours.

We had very specific objectives to improve response time. The main contribution of the consultancy is the knowledge that we were able to obtain from the organisation, through which we obtained a solution that reached the target times that had been established and at a very adequate price. We have an empathetic relationship, they understand our concerns and try to resolve them, anticipating that the solutions contain elements that tend to resolve that concern; there is a proactivity to resolve them.

The previous response time compared to the current one represents an improvement of 340%, which gives Grupo Flexi greater control over its inventories, reducing costs and shrinkage.

Conclusions

With this success case I can conclude that it is viable to deliver value to the business using Information Technologies and the way in which they enhance the capacity of business processes to give the results that the organisation is expecting, and not only the expected ones but also the unexpected benefits that contribute to a better integration of business areas with IT areas. It can also be observed that if information technologies are properly used within the IT areas of an organisation, they can gradually become a profit centre for the organisation.

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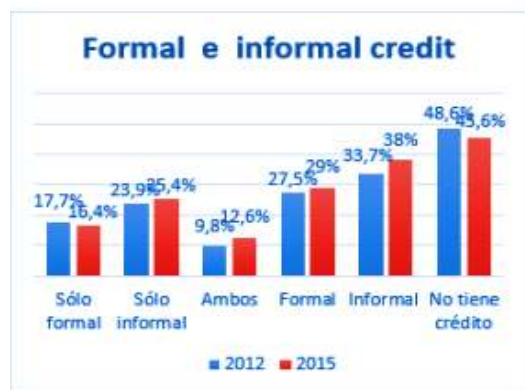
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