Internal Control System for Mexican Public Schools: The Case of an Elementary Public School in Querétaro, México

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ABSTRACT

Just like an onion, we must analyze corruption in layers. Firstly, where do people obtain values in order to participate in society? The answer is: at home, because that is where education begins. Parents are a strong role model and behavioral example for children, so, in order to let them play a more continuous role, they should participate in formal education by creating an organization that allows them to manage some school activities. Although regulation exists, the challenge arises when money is collected, because parents often don't know basic accounting principles and mostly they only have basic reading and writing skills. There is no effective management of resources, opening the door to acts of corruption. This project is a transformational proposal to help public elementary school parents' associations to be successful as an organization with higher standards of integrity. The final product is an internal system enabling better control of financial resources in an easy to learn and understand tool.

Keywords: corruption, values, parents' associations, internal system.

INTRODUCTION

The capacity of government to provide a well-rounded and integrated education to Mexican children has been questioned. This situation and the fact that families desire to be present in schools, create the opportunity for parents to participate in several activities in public elementary school institutions to cover some of the students' needs. In some occasions it is necessary to collect money, but the control of funds is difficult because parents don't have the ability to do it; they don't know basic accounting. It is a problem not only because of ineffective administration of resources but because it opens the door to acts of corruption. The result is that families don't trust the association which discourages cooperation and without parental support, parents' associations can't subsist to fulfill the objective of their creation.

This is a case study of a parents' association in a public elementary school institution: "Julian Adame Alatorre" in Queretaro, Mexico. It is a dynamic collaboration to help the parents' association of this school to improve the management of the money collected enabling them to control and report it to students' families, augmenting trust in the organism and strengthening

its integrity. According to Yin (2002) a case of study is "a contemporary phenomenon within its real life context, especially when the boundaries between a phenomenon and context are not clear and the researcher has little control over the phenomenon and context".

To develop the project, it was necessary the involvement of specialists in accounting and systems, so we could integrate the requirements into one proposal that was refined to achieve a satisfactory final result: an internal system that helps the parents' association of the public primary school "Julian Adame Alatorre" to register, control, manage and report collected money. Initially the idea was to extend the introduction of this internal system to other elementary school institutions as control is simple and it helps people that don't have accounting skills or only have basic levels of education.

The system is currently being utilized at Queretaro's largest elementary school, and we have been collecting data in order to improve the parents' board ("parents' association") school administration. We have been monitoring and coaching the parents' board about the system throughout the process.

ANTECEDENTS

Since 1970 many countries around the world have considered the role of parents in the participation of the educational system. Legislation has been formulated to regulate their involvement (Pozo, 2004). In Mexico, this has been a process with only incremental change and a lack of real achievements.

In 2006, based on the need to clarify what public elementary school institutions in Mexico are doing, the development of a system that provides the information that parents and society needs to know was proposed (Mendoza, 2006). One of the principles was to provide information according to different socioeconomic levels that exist in the country: printed reports for parents, oral sessions to explain the information, information on blackboards and on the internet for the few that have access to that level of technology.

In the public elementary school institution "Julian Adame Alatorre", members of the parents' association usually perform their activities on paper; they register the expenses and monetary contributions in notebooks. Later they report the accounts to all families. Even though they observed all the rules that are established for the association, there is a blank space that needs to be filled because the administration of resources is not included in the scope of the law.

JUSTIFICATION

The United Nations Convention against Corruption was established to help in the international cooperation to end with this social and economic problem. Its efforts are also directed to promote the integrity of the administration of public goods (Eguía, 2014). This is not only an international business problem but also a country-level problem that Mexico must address. If we want high levels of progress first corruption must be eradicated. It is common to observe that corruption begins in the family cycle, then in other spheres like school, the office, etc. Combating corruption is not easy, but the best way to do it is to start with its origin.

Another issue is that in a country where classrooms only have basic equipment such as chalks and blackboards, the need to put all levels of society on the map is urgent, not because of their deficiencies, but because of the development that the technology can bring to them. What kind of development can the technology produce? It represents a better economy for the country (Rojo, 2003) and the opening of several channels for the society to express and to access information.

Therefore, these two topics could converge into one reality that parents' associations in public elementary schools are experiencing: the administration of resources.

DESCRIPTION OF THE PROBLEM

The phenomenon of corruption is a social problem and it is opportune to eradicate it from the country from its roots. With the help of citizens this could be possible (Amparo, 2015). However, it is difficult because the corruption depends upon several factors. A number of causes are recognized, but the most important thing to do about it, is to accept that is a serious problem and to end behaviors that lead to corruption. The public elementary school "Julian Adame Alatorre", works like many other schools in the public system: teachers and students in classrooms, a principal that manages the school and parental presence through a representative group – the parents' association – whose responsibility is to participate, to promote and to seek a well-rounded and integrated education for the students. Unfortunately, they don't have enough knowledge and experience to manage financial resources; this produces inefficiency and the suspicion of acts of corruption. That affects people's trust and school image. Actually, people do not trust the traditional system. Therefore, they need a practical solution with respect to the financial administration.

Man is in the center of three interrelated elements: the natural environment, the social environment and the technological environment (Gay, 1997). Integrating most human activities into a technological system is something that can't be avoided, for years now it has been a natural process. For this case study it is necessary to include a technological element to provide the solution to the problem that parents' association is facing. A benefit could be provided through the automation of basic accounting activities, so the question becomes: in order to have a better and more effective administration of material and financial resources, how we can develop an internal system that fits and works with respect to the needs of the parents' association of "Julian Adame Alatorre"?

To complete this project it is necessary to reference the phases a creation of a system (Gay, 1997): Identification of opportunities and requirements, analysis, design, organization, planning and execution, evaluation, perfection, training of the users and maintenance. The parents' participation is key to achieving the desired result. The requirements for this project are time, computer equipment, software programs, the collaboration of a professional programmer and an accountant.

THEORY
The Role of Parents' Associations
The participation of citizens in a democracy is elementary, it means: to take part of the responsibility in the decision-making process (Pozo, 2004). This holds true in the educative

community also. The elements that interact to stimulate the individual and cultural development are: families, teachers, students, and others. All parties participate taking a key role in the educational system. Families usually have a strong link between members, but when children go to school, on some occasions the families don't know how the institutions are educating the children and at some point this can form a tendency to take a break from their responsibilities. This is a cultural phenomenon in Mexico: the relationship with educational institutions is weak (Pozo, 2004), for example: only 2 of 10 parents participate in complementary or extracurricular activities.

In Mexico most of the parents are on the fringe of their children education (Bracho, 2007). This enables educational institutions to avoid the responsibility of reporting to parents their activities including the use of material or monetary resources. Parents' associations exist because of the need for participation and supervision of the participants in the educational system. Although in general they can't go farther than organizing social events like Mother's Day. It is a shame not to be active in a real social participation in terms of planning and evaluating school programs, but not even the school council of social participation can do that. Not all parents' associations' restrictions are written, many are assumed because this is the manner in which the system works.

The parents' associations represent tutors and parents of students. There must be one per public institution, one per state and one national association. Their rules were written a long time ago when Lopez Portillo was president of Mexico, in April 1980. They have been modified through the years and the 2016 version reads (USEBEQ, 2016):
- The object of parents' associations is to represent common education interests, to collaborate seeking the best of the school community, to contribute in the adult education and to participate in the use of monetary cooperation in goods and services.
- The designations are to collaborate with the school authority in activities that the school attends, to promote needs of maintenance, to collect money from the members of the association through voluntary contributions.

Parents' associations must have the following positions; all are elected using a democratic process (USEBEQ, 2016):
- President
- Vice-president
- Secretary
- Treasurer
- First committee member
- Second committee member
- Third committee member
- Fourth committee member
- Fifth committee member
- Sixth committee member

Some of the rights and responsibilities of the parents or tutors are:

- Ask for intervention of the parents' association to meet school authorities and discuss educational problems and needs of the institution.
- To vote in conferences and meetings.
- Parents could be elected as part of the council to represent parents' associations.
- To cooperate to make the association work correctly.
- To participate in educational activities for adults that the association promotes.
- To collaborate in cultural and social activities in the school.
- To complete the tasks that the association parents consign.
- To participate with teachers and authorities in the evaluation of behavioral problems amongst the students.

Members of the association can be suspended due to a violation of the rules when it is determined in an assembly.

The importance and existence of parents' associations resides in the purpose of education and it is impossible if parents and school authorities are not fulfilling their responsibilities and if there is a lack of dialogue and a common space to cooperate for the student needs (De Gregorio, 2005).

The Problem of Corruption

One of the objectives of sustainable development establishes that is necessary to promote peaceful societies and to bring justice for people in all institutional levels of a country (INEGI, 2016); referring to the eradication of corruption. Corruption is one of Mexico's major problems. It is difficult to define corruption because it consists in several unlawful behaviors that people carry out in the "dark" (Amparo, 2015). It is present in society; there are networks that affect people, productivity and the country's development. That is the reason why it is necessary to identify and prevent acts of corruption. An act of corruption happens when someone misuses their position for personal gain: bribery, extortion and nepotism all are related to corruption. When an act of corruption occurs there is a public or administrative law that punishes it. The law and information access institutions have been created to discover illicit resources (Eguía, 2014), but it is a difficult task to do. The perception of the frequency of acts of corruption, the participation in acts of corruption and the attitudes and values exposed in acts of corruptions are the way in which generally this phenomenon is analyzed.

48% HIGH FREQUENCY	40% MODERATE FREQUENCY	9% INFREQUENT	1% NEVER OCCURS

Figure 1: Perception of the frequency of corruption in Mexico 2013 (INEGI, cited Amparo, 2015)

Although it is considered an act of abuse of public power to obtain a private benefit, corruption is also a social problem and its practice is spread across the country. The society, business people, politicians and public servants participate in corruption. It is amazing the level of self-permission that people have that enables this problem to exist: Mexican citizens consider that the problem resides in government, corporate and public institutions, but not within their neighbors or family; they believe that they are victims of the circumstances (Amparo, 2015). The public opinion classified corruption as "white", "gray" and "black". White are behaviors

that nobody considers punishable. Gray could be acts that some people consider punishable. Black corruption includes acts that all people consider punishable (INEGI, 2016). Some of these acts of corruption are: power excess, fraud, bribery, illicit wealth and information privileges. A person will choose to be corrupt in Mexico because if they are not, procedures are delayed, there could be no justification of public payments, people could lose contracts, there are higher operating costs and there could be a lack of attention and security.

The fact is, corruption is always a choice. It doesn't matter if is a large act of corruption or not, it is called corruption, it produces a chain reaction and its consequences affect the whole of society.

The Contribution of an IT System

Technology is elementary to every human activity, but also it is important for cultural, social and economic development (Cañedo, 2001). Technology is an intermediary between society's needs and available resources. As a result, we have technological products (Gay, 1997). Some examples of information technology and communications advances that provide opportunities for all kinds of organizations are (Miranda, 2000):

- Internet. In excess of 100 million people are connected because of the internet. It has reduced time and distance.
- Networks. It aids interaction and access in work places.
- Information changes daily and people can have access in matter of minutes to the latest information.

The physical and social worlds are organized in systems. There are open systems and closed systems. An open system has a constant relation with the environment through an interchange; it could be energy, information, etc. A closed system doesn't have contact with the exterior world; it is an abstraction (Gay, 1997). The following are benefits that an IT system can bring to people:

- A global knowledge progress.
- Development of an identity as part of a culture.
- Recognition of the value of team work.
- Increased precision in their activities.
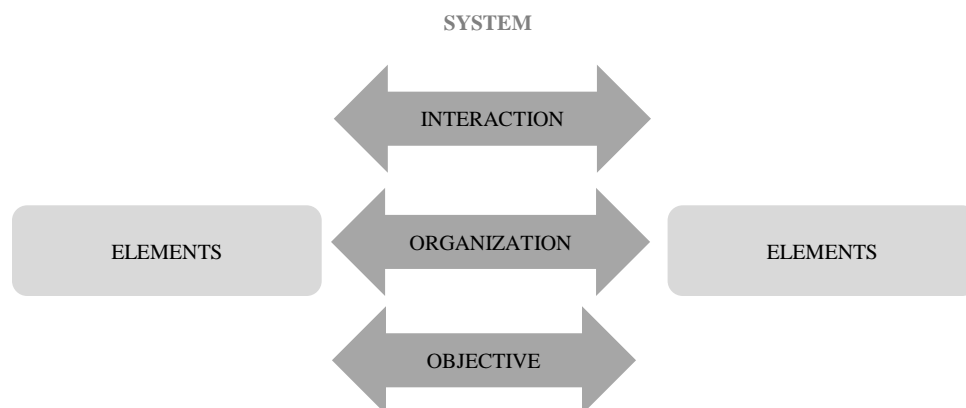- More effective time and resource management.

Figure 2: A system. (Gay, 1997)

Systems have two or more elements and the outcome is greater than the sum of those elements:

The center of the existence of a system is an objective, without it, the system will be like a boat without a rudder and without a destination. Therefore, to develop an IT system it is necessary to know (Gay, 1997):

- The objective: What is it for?
- The function: What is its function? How will it help people in their activities?
- The interaction: Identify the elements. How do they interact?
- The development: How does it work? Perform the conversion process to identify the relationship between inputs and resources, the limits (physical, juridical, mental), the flows (energy, information) and the outputs or result.
- The value: What is its value or contribution? How is linked to the sociocultural structure and to the social needs?

A system needs software programs. Software programs are logical elements that help in the realization of tasks through equipment like a computer. These are basic elements for business and practically all human activity (Campos, 2012).

Programs are classified in the following categories:

- Operating system. Controls the operative matrix and the system resources, it manages everything.
- Development program. It solves a specific problem.
- Application program. It's a program involving common daily tasks.

Scientific and technological developments are directly related to societal needs. Systems facilitate human activity although it is not easy for organizations to adopt and adapt information technologies when they prefer not to embrace the change and innovations but continue with the traditional model instead; performing the activities manually (Martínez and others, 2012).

RESULTS

Our first step was looking for software options with which we could program the system; we found out that Microsoft Access was the easiest one to use and we chose that. Then we worked on the design of the system's structure based on previous interviews with the parents finding out about their administration tasks and obligations, which in turn were related with their incomes and outcomes coming from the fees the school parents' pay, as federal regulations require these kind of boards (at state schools) to print full financial statements and to make this information public for the other schools' parents.

While working on the above we always tried to keep in mind to design an easy operational system which displayed an attractive software menu, and our first version (the beta one) got favorable reviews and was described as friendly, while being fully operational and effective for the tasks it was designed for. The system was developed in visual basic for applications with Access database engine by Rubén Velasco Jaimes, as an engineer. We carried out a detailed analysis of the school parents' board's needs in order to generate the entities and their relationships, after that we created the rest of the application's components.

As soon as we finished the beta system's design we showed it to the parents' board in order to get their feedback and add to the design whatever details we could have missed from the information they gave us at the interviews. To sum up, we designed our system to satisfy all of the needs the parents expressed to us while applying our accounting knowledge and skills to reach that same purpose (satisfying their needs and improving the parents' board resources administration). The program is being used right now at Queretaro's largest elementary school. We had problems with the generation of a logbook that could save all the users' movements, problem which was overcome with the generation of new entities to that purpose. Security was another issue that needed to be solved as we were developing the project, and we worked that out by generating roles and users in such a way that those users were granted rights.

In the market, a project like this can cost around $750 U.S. Dollars and a Web Application Web around $5,000 U.S. Dollars.
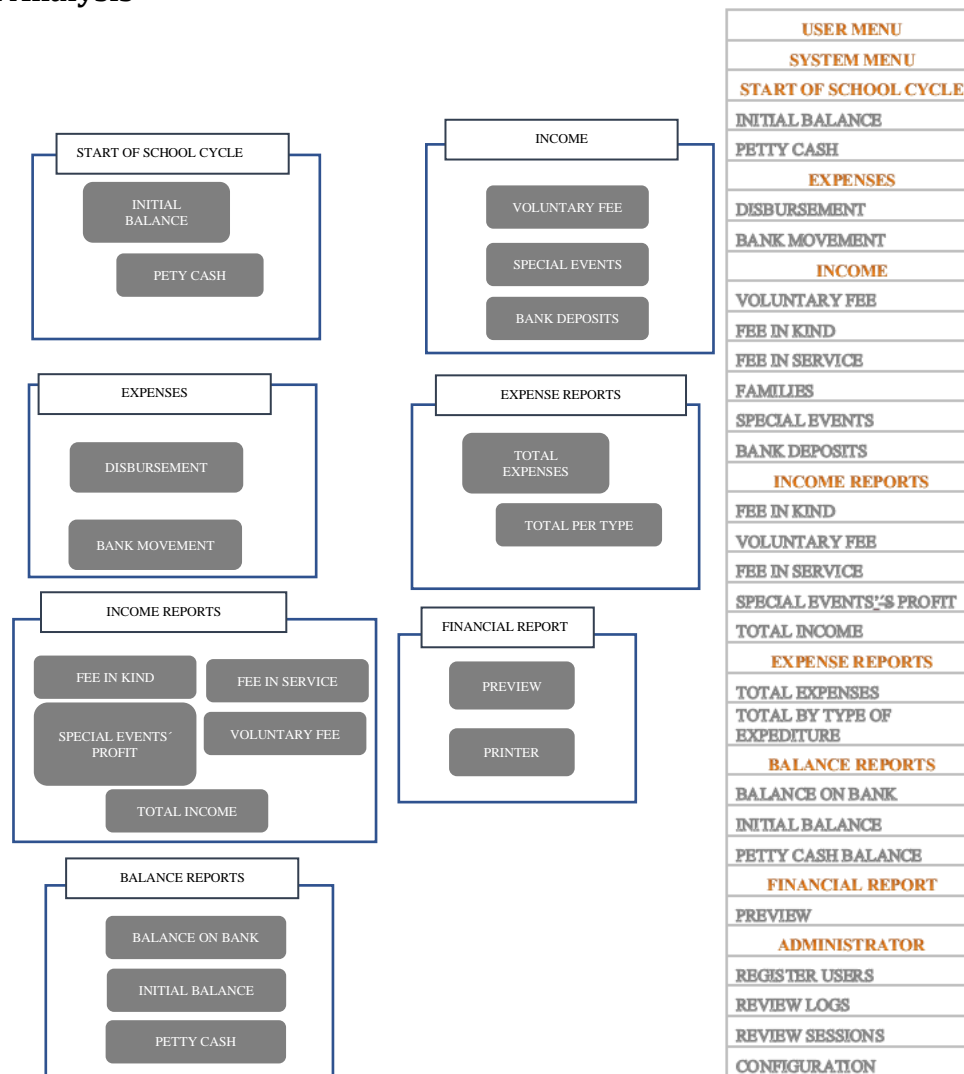
Structural Analysis

Figure 3: Accounting Internal Control System. Own creation.

The system was designed according to the activities that parents' associations commonly perform. Each module created contains a group of activities or tasks. Accounting terms were introduced as part of the training. The logic flow of the processes was analyzed and translated into the system according to the following representation:

Functional Analysis
To establish the correct functionality of the internal control program, it was necessary to test it with the aid of the parents' association. The members of the parents' association who received the training provided the principal feedback to determine if the system works. This feedback was obtained during their use of the program. Some adjustments were required in every module to obtain a satisfactory final result.

Technological Analysis
The school provided a computer that covers the minimum requirements preloaded with the Microsoft Access database software in which the system was developed. A module of technology familiarization was included as part of the training plan and a system manual was developed.

Comparative Analysis
The system compared with the traditional way of registering financial movements in which parents' association worked provides a significant increase in performance. Like in many other activities, this constitutes a logical triumph of the technological solution over manual processes.

CONCLUSIONS

The system is currently being utilized at Queretaro's largest elementary school, and we have been collecting data in order to improve the parents' board. At the beginning, the parents' board was very excited about the idea. There was the boards' inexperience with the use of computer software; we are working on that to restore the board's interest. Also, even though the board liked the software's initial design, it is not cutting-edge design (its fully operational but it has a beta design), so we are also working on a new design. The system is being used by four of the main members of the family parents association

An administrative tool was created that helps to register basic accounting movements establishing an internal system named "Sistema Interno de Control Contable" or Internal Accounting Control System. In an interview with the parents' association they explained the benefits of using the program: they commented that is easy to use and members of the association, parents and tutors now have the confidence to perform the financial management. This eliminates several conflicts related to the money collected and discourages the corrupt practices. As a result, the objective of the project was attained. The main purpose of this case of study was achieved: we could cooperate with one of the participants that play a key role in education, in order that parents can maintain the value of their integrity and assist as an example for their children. This project was a contribution to a social need: it was a first step to stop corruption. The development and programming was done according to the principles of an open system because it was necessary for dynamic interchange of several elements. Databases were created. Information flows all over the system, including inputs and outputs.

Information access doesn't mean that everybody that has access knows how to use the public resource. In Mexico, technology continues to be a privilege of the few (Bracho, 2007). The internal system resulting from this project requires prior knowledge of how to use a computer and how to interact in an environment that some parents weren't familiar with. It presented a challenge for some members of the parents' association who had never used a computer before. In a visit to the education authorities, USEBEQ in the state of Queretaro, they supported the idea of developing the system for the parents' association of the school "Julian Adame Alatorre". Their position, however, is that the implementation in further public schools is not possible because it would imply additional effort and resources, whilst resources are currently focused on other needs and projects. Therefore, the idea of extending this project to other elementary schools will be postponed.

Control implementation in any organization helps to the processes' improvement, and the fact that this system included controls such as the recording of incomes and expenditures knowing which user was recording which information, as well as security implementation will no doubt provide transparency to the parents' board management, since the rest of the school's parents can request a report of the financial statements of the said board at any time to make whatever reviews they deem necessary.

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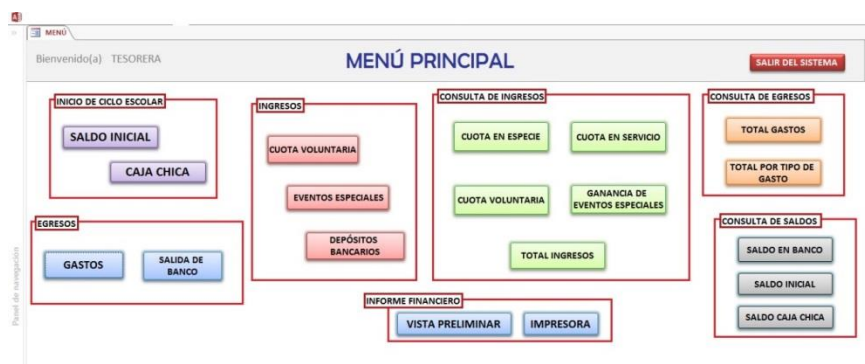
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