

Viable model of the Mexican legal system: A transdisciplinary systemic vision**Modelo viable del sistema jurídico Mexicano: Una visión sistémica transdisciplinaria**

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Abstract

In Mexico, the Legal System contemplates a broad set of agencies responsible to the justice imparting, therefore for its management it is necessary to have a systemic model that allows to contribute, in a more adequate way, to the entire set of subsystems; in such a way that the institutions responsible to administering justice are capable of accurately and expeditiously determining the results and conclusions in the areas responsible to the administration of justice. The implementation and application of models with a systemic approach, such as Viable Systems Models, allow us to respond to many problems at different integrated levels of abstraction of sociotechnical systems, such as those responsible to justice administration in Mexico. This research work purpose is to design a Viable Model for the Mexican Legal System, which will allow to provide justice delivery systems with a tool that streamlines, and facilitates the management, control and handling of the information used in the National Legal System. The systems approach application in the design of viable systems allows to unite different expert's views to give a comprehensive response to the analyzed cases.

Legal System, Viable system model, Sociotechnical systems

Resumen

En México, el Sistema Jurídico contempla un conjunto amplio de organismos encargados de impartir justicia, por ello, para su gestión es necesario contar con un modelo sistémico que permita coadyuvar, de una forma más adecuada, a todo el conjunto de subsistemas; de tal forma que las instituciones encargadas de impartir justicia sean capaces de determinar con precisión, y de manera expedita, los resultados y conclusiones en los organismos encargados de la impartición de justicia. La implementación y aplicación de modelos con un enfoque sistémico, como los Modelos de Sistemas Viables, permiten dar respuesta principalmente a muchos problemas en diferentes niveles integrados de abstracción de sistemas sociotécnicos, en la planeación y el control. El presente trabajo de investigación tiene como finalidad diseñar un Modelo Viable para el Sistema Jurídico Mexicano, el cual permitirá dotar a los sistemas de impartición de justicia de una herramienta que agilice, y facilite la planeación, gestión, control y el manejo de la información utilizada en el Sistema Jurídico Nacional. La aplicación del enfoque de sistemas en el diseño de sistemas viables permite cohesionar diferentes visiones de expertos para dar una respuesta integral a los casos analizados.

Sistema jurídico, Modelo de sistema viable, Sistemas sociotécnicos

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Introduction

The Mexican Legal System (MLS) is the set of legal norms in force and applicable in our Country, it's supported by the Political Constitution of the United Mexican States, which is the fundamental and supreme Law of México. (SCJN, 2006). Heylighen reflects on society as a global system, supported mainly by systems theory and cybernetics, seeks to give a holistic and autopoietic treatment to the social object (Heylighen 2017), (Maturana, 1980), that is, it refers to the self-organization in living beings. The systems approach allows the parts and interactions study that make up a system and its environment (Checkland, 2006).

Ashby considers Cybernetics as the study of systems open to energy but closed to information and control (Ashby, 1954), therefore, the cybernetics fundamental concept is the "difference" between information obtained from the measurements of environment energy, with respect to information desired internally; both are totally different or that with time something has changed. The change is a phenomenon that moves with time (Ashby, 1954), (Wiener, 1958), (Sabine, 1994).

A basic principle in each institution or company is that they have the processes of Inputs, Production and Outputs, which define the workflow (Vander, 2004), (Davenport, 1992). Likewise, this allows us to model the processes and their interrelations with techniques that show us to a global and comprehensive vision. We must consider to generate strategies and change or design processes is necessary to have timely and adequate information, which can be the competition core, since it is what allows organizations to succeed (Prahaland, 1990).

To develop a general model in general and a particular Viable Model, the problems in the relevant systems of the organization must be identified and analyzed to determine or generate changes and actions to improve or solve the problems. (Beer, 1989), (Ashby, 2017) (Aguilar, 2021)

This research work purpose is to design a Viable Model, which allows providing justice delivery systems with a tool that streamline and facilitates planning management, control and information used in the law enforcement agencies, specifically at the national level.

The systems approach application will make it possible to unite the different visions of theoretical and practical experts, to give the most adequate and quick answers to the case analyzed and to development of Viable Systems Models (VSM).

A. General Systems Theory (GST) and Systems Engineering

GST is an interdisciplinary theory based on the integration and reciprocal dependence of all disciplines. Bertalanffy describes it as a methodological approach that allows the explanation and description of the phenomena that occur in the reality and what the behavior of said reality will be like in the future. The GST studies the systems and their organization, their subsystems, their interrelations, their hierarchical levels, their resilience, their autonomy, their identity and their conservation, the rules of their organization and growth, the conditions of their conservation, their possible or probable states, as well as their disorganization and destruction (Bertalanffy, 1968).

In fact, Systems Engineering is a systematic and scientific approach to represent reality through designed models, as well as a stimulating practice oriented towards forms of interdisciplinary work (Ackoff, 2006), (van Gigh, 1987). Systems are open, since they interact with other systems outside their limits or borders, which are called the environment (Wilson, 1993).

Methodology

The methodology used in this research is the Checkland methodology (for soft systems), it can be described as an analysis process that uses the concept of a system. The methodology first investigates the situation (poorly structured problem) and then takes actions to improve activities; real world and systems thinking (see Fig. 1). The methodology is a 7th process (Checkland, 2006):

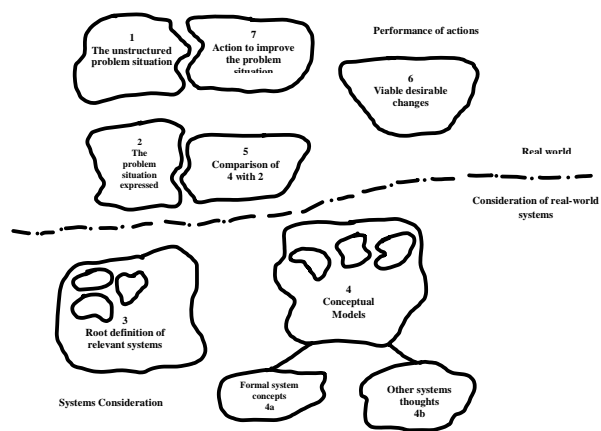


Figure 1 The Soft Systems Methodology
Source: (Checkland, 2006)

In Beer’s methodology development, the Viable System Model (MSV) in stage 4b is used, which is a cybernetic model that allows the diagnosis and design of human organizations. For Beer, institutions such as: home, school, cities, companies, regions or countries are not only more or less abstract entities that we recognize and to which we give a name; they are dynamic and surviving systems; Beer establishes that in a viable system there are five functions (subsystems) so that it conserves its identity and can respond to a dynamic environment (Beer, 1989), (Beer, 1966) for long-term survival (Beer, 1975).

Stafford Beer developed a model based on the brain physiology study, where he obtained some principles for the control theory of administrative systems (Beer, 1989).

Development

A. Current Situation of the Mexican Legal System and its classification

The Mexican Legal System is made up of legal norms that are applicable in this country, understanding legal norms as the rules that govern the conduct of good behavior of individuals in a society, which have the following characteristics: they are bilateral, external, heteronomous and coercive.

The way in which the rules that constitute the Legal System appear is through the so-called Formal Sources of Law, which can be defined as the process of creating legal norms; Mexican Law contemplates the legislation, jurisprudence, custom, doctrine and general principles of law.

Each of the legal norms has characteristics that make it different, constitute the foundations of all legal order (see Fig. 2).

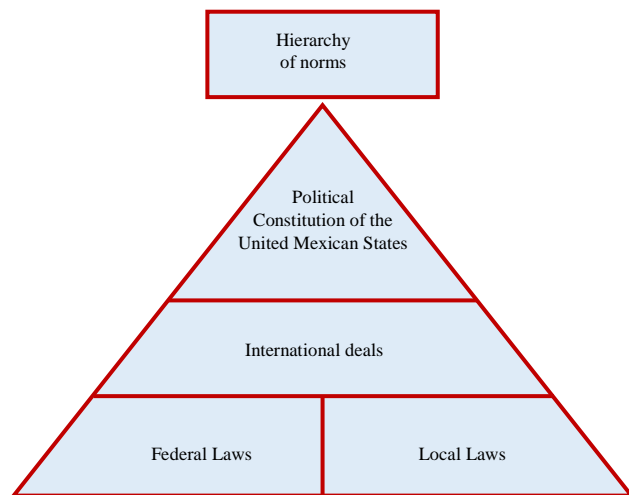


Figure 2 The Hierarchy of Standards
Source: (SCJN,2006)

To systematize the norms and make their scope more evident, they are classified, among other ways, according to their material, hierarchy and spatial areas of validity (see Table 1).

Public Law	Penal
	Electoral
	Procedural
	Administrative
	Constitutional
Private Law	Public International
	Mercantile
	Civil
Social Law	Private International
	Social Assistance
	Social Security
	Agrarian
Other	Economic
	From work
	Computer scientist

Table 1 Branches of Law
Source: (SCJN,2006)

B. Justice Administration System

The Justice Administration System is integrated as shown in Fig. 3.

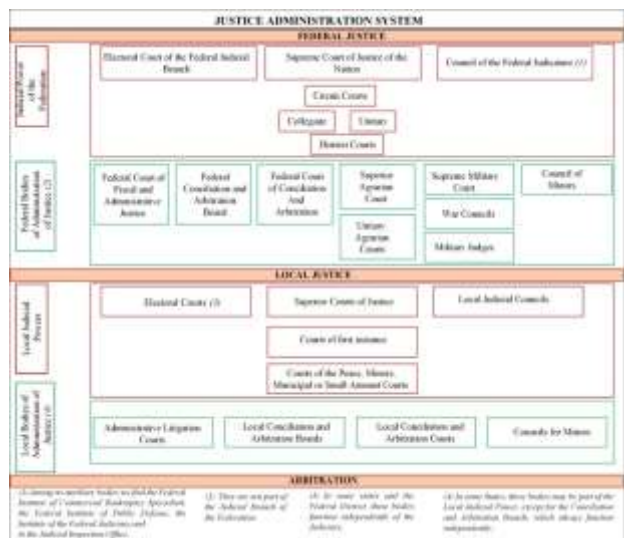


Figure 3 Justice Administration System
Source: (SCJN,2006)

C. Diagnosis

To carry out the diagnosis, the first two stages of the Checkland methodology are developed.

1) Situation of the unstructured problem

The Mexican Legal System (MLS) regulates the organizations of individuals in a society, maintains harmony in it; It establishes rules for living which have regulated the conduct of individuals in society; in such a way that, to organize the peoples that are growing every day, the institutions that make up the Legal System are born, establishing laws and decrees applicable to the individuals that simulate said society (see Fig. 4).

In Mexico there is a performance problem of the authorities that simulate the MLS, especially in the justice administration, which becomes more serious and complex when the MLS is not reliable for society; The proof of this is in the crime’s statistics committed and the complaints that are not made because they considered a waste of time (ENVIPE, 2018).

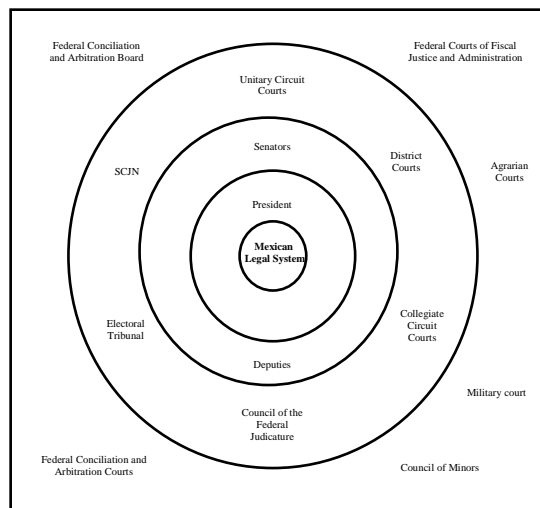


Figure 4 The Mexican Legal System and its environment
Source: Self Made

The Mexican Legal System is divided into three powers, which, in turn, are made up of various institutions (see Fig. 5), each having a specific task within it; However, they all pursue the same common goal: to guarantee the well-being of individuals in society, favoring coexistence among them and regulating the behavior of the people who make it up.

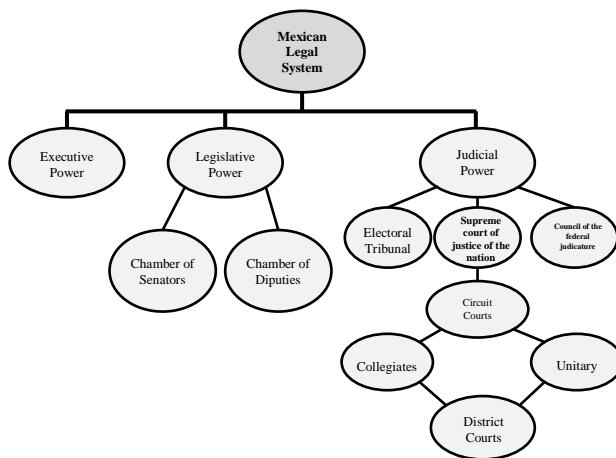


Figure 5 Structure of the Mexican Legal System
Source: (SCJN,2006)

2) Rich vision of the problem situation

In Fig. 6, a representative model of the problem situation that exists in the Mexican Legal System is shown; In it, a richer comprehensive vision is observed and it is structured through a set of problems related to the main activities carried out in the Justice Administration System in Mexico, thus, the problems obtained in the diagnosis and interpretation of the rich vision images are integrated into three groups, which are:

a) Bad relationship between the powers and with society in general

The improvement of the Mexican Justice System is difficult to achieve if it does not go through the strengthening of the union powers, since they are responsible for responding to the demands for the justice administration in the country. This problem occurs because there is no real balance between federal powers with local areas, which makes it difficult for tasks to be carried out effectively and efficiently. In addition to the above, the justice system has been strongly questioned by Mexican society, due to the low credibility and trust that it has in the system, since most legal processes take a long time to be resolved, which has the consequence that citizens feel that there are no quick responses to their demands, that matters are not decided impartially and that impunity and corruption persist in the judicial system.

b) Financial Resources misused

A basic instrument available to the union powers to fulfill the tasks to which they are obliged, is the budget that is approved each year, however, the problem that arises is that it does not reach or is misused, since most of the time it is not prioritized in the needs that society presents, and as a consequence, if there are not enough resources, there cannot be an adequate and qualified number of judicial areas or public servants to attend to the demands of justice; nor the possibility of expanding or improving existing spaces, nor will it be possible to acquire new technologies, nor have new alternative mechanisms to provide a prompt and expeditious solution to citizens.

c) Lack of planning, training and updating

The authorities main function is to resolve the controversies that are submitted to their knowledge, as required by Mexican law, that is, promptly, expeditiously and impartially; But, to comply with this, it is necessary to have good planning by the institutions responsible to imparting justice, with an adequate number of people and with good administrative support to keep them in office, the suitable personnel who are constantly updated and training, the appropriate facilities for the type of controversy exposed.

In addition to everything, a very important aspect is that it must have the appropriate technologies to simplify and faster the work of the subsystems that make up the Mexican Legal System.

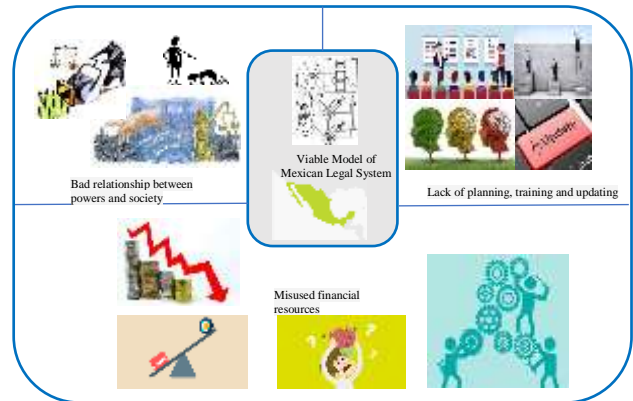


Figure 6 Rich vision of the problem situation.

Source: Self made

D. Model design

For the model construction and the relevant systems determination, the Checkland methodology is used due to its flexibility for “soft” systems, in addition to allowing it to be carried out in the order that fits the specific problem to be treated.

1. Root definition of the relevant systems

The mnemonics CATWOE (Checkland) is used to guarantee that the most important characteristics are considered, with which we identify the elements involved:

a) C = Customer, are the users.

- Society
- Lawyers
- Authorities that represent people as Public Ministry

b) A = Actors or agents, are responsible to transforming information inputs into outputs.

- President of the Republic
- Deputies
- Senators
- Ministers of the SCJN
- Magistrates
- Judges

c) T = Transformation, the main output will be the viable model of the Mexican Legal System.

d) W = Weltanschauung, vision of the world, is the vision of those involved (see Table 2).

Mexican Legal System	
Positive: – Relationship with the environment – Appropriate laws – Financial resources – Human resources	Negative: – Corruption – Bureaucratism – Bad relationship between the powers – Misused resources – Lack of training – Poor planning
Society	
Positive: Access to the legal system	Negative: Lack of confidence in the legal system Crime growth

Table 2 World view
Source: *Self Made*

e) O = Owner (owner), is the owner of the MLS, who makes the decision and has the power to decide who is going to manage the country.

f) E = Environment, is the environment; The subsystems that make up each of the three powers of the nation, which have already been mentioned previously, as well as society in general, are considered. It was found that the relevant systems of the Mexican Legal System, specifically the Justice Administration System, are made up of seven relevant interrelated systems that make it work; these are:

2. Value system (axiological)

It will allow to develop, in an ethical, dignified and honest way, the functioning of the systems.

3. Research and creation system

System responsible for the creation of laws through the investigation of the needs that society has as it grows, in this system falls partly the responsibility for the malfunction of the quality of the laws that make up the MLS, since is responsible to the correct creation, modification, repeal, etc. of the applicable laws for the proper functioning of life in society.

4. Knowledge system

Set of laws, rules, regulations, technology, specific infrastructure for each case, required by the total system to be able to apply and develop the tasks of each specific case that reaches the authorities.

4. Quality and performance system

System responsible for the correct application of the law to the specific case. Fundamental system of the legal system since, it is responsible to correctly applying the laws to the individuals who violate them within society.

5. Planning and control system

System responsible for planning and controlling the proper functioning of the authorities that make up the justice administration system.

6. Customer system (company)

System that makes the system work in its entirety, since it is the system to which the authorities must satisfy their needs; the aim is for clients to maintain a relationship of trust with justice.

7. Environment system

System that provides feedback to the entire system, since it influences and reacts to variations of the total system or of any of its components, the environment influences, criticizes and reacts to the good or bad functioning of each one of the authorities that make up the MLS.

Once the relevant systems have been found, the conceptual model designed to apply to the Mexican Legal System is presented (see Fig. 7).

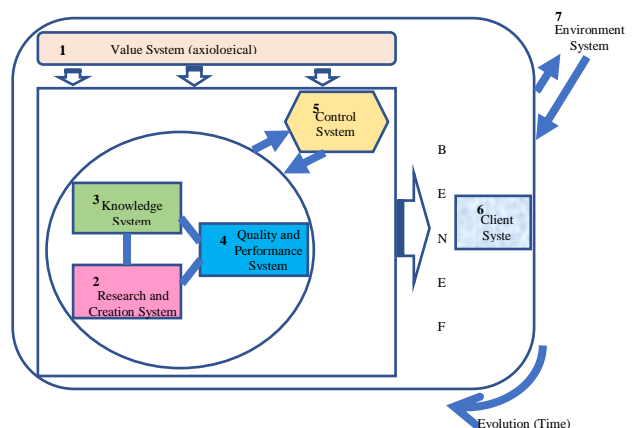


Figure 7 Conceptual model of the Mexican Legal System
Source: *Self Made*

2) Design of the Viable Model of the Mexican Legal System (MLS)

Once the relevant systems have been found, they must be considered for the design and implementation of the Viable System Model, for which their construction is proposed below.

Divisional control system - System 1

They are all the units in responsible to carrying out the basic organizational tasks and activities to achieve the correct performance of the Federal Judicial Power (FJP). System 1 is formed by the District Courts subsystem.

Comprehensive control system - System 2

System 2 ensures the connection and stability between the divisions of the organization corresponding to System 1. The coordination of activities is fundamental in the structure of any organization. System 2 has the responsibility of advancing or delaying procedures, programs and processes, making modifications or adaptations according to the client's needs. In such a way that, to solve all kinds of deviations in the operation of the system, rules and policies related to the activities of the system are followed. System 2 must include the following activities of the information flows towards system 3: Coordination, Regulation, Update, Discipline and Training.

System 2 is represented by the Federal Judiciary Institute, which is a body belonging to the Federal Judicial Council, in charge of formation, training and updating the members of the Federal Judicial Power and those who aspire to be part of this, supervising the conduct and good performance of the human capital that makes up the system; It also carries out the research work that is needed for the development and improvement of the administration of justice.

Internal homeostasis system - System 3

System 3 is responsible for the control and System 3 * for conducting the corresponding audits. In this system, decisions must be made about programs, projects and action plans; Decision-making must consider the advantages and disadvantages, as well as the opportunities and threats.

This system is represented by the Council of the Federal Judiciary, since it is the body in charge of the administration, surveillance and proper functioning of the Courts and Tribunals. System 3 * is represented by the Comptroller of the Judicial Power of the Federation, since it is responsible of the powers to control and inspect the administrative operations that govern the JPF, as well as to prepare audits of the same.

External homeostasis system - System 4

System 4 is responsible for looking to the future of the organization; It is capable to detecting the appropriate information and transmitting it to system 1, which allows the adaptation and learning of system 1 according to the environment, as well as the restructuring of systems 2 and 3.

The main task of system 4 is to demand that external changes be considered and recognized to have a true diagnosis. System 4 must face present and future changes, developing strategies, goals and objectives, this system is represented by the Judicial Power of the Federation.

Prevention system - System 5

System 5 must integrate all current activities, considered by system 3 and future needs considered by system 4, to ensure the balance between systems and guide decision-making, for which it considers: the mission, vision and values. System 5 is represented by the Supreme Court of Justice of the Nation, since in the MLS, the administration of justice is coordinated through it. It is the highest court in the country, and it is responsible for ensuring the order established by the Constitution and maintaining the balance between the various government institutions.

Considering in an integral way the vision of the 5 previous systems, a Viable System is obtained that allows a global and integral vision of the MLS; that, by organizing its activities, formulating strategies, programs and processes, ensure their viability and good performance, so that the entire system can function effectively in pursuit of its objectives, and thus be able to improve the client's quality of life, that is, of society, since it is for this that it has to function properly. (see Fig. 8).

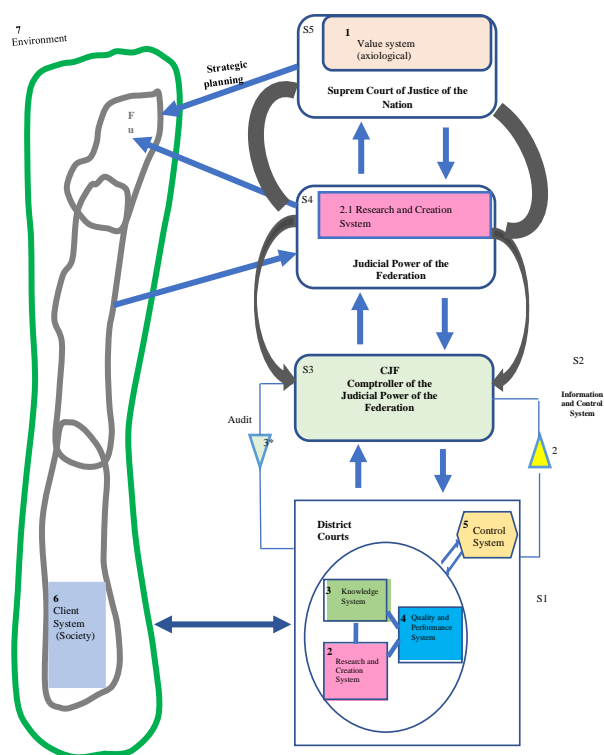


Figure 8 Viable model of SJM. Source: Self Made

Table 3 shows the MSV Systems with which the MLS is integrated, as well as the relevant systems that are involved in each subsystem, it should be noted that the axiological or value system must permeate the entire system, therefore, we can say that there is a level of correspondence between these.

System	Viable System Model	Mexican Legal System	Relevant Functions / Systems
System 1	Divisional control	A-District Courts	Operations and creation system (2) Knowledge system (3) Quality and performance system (4) Control system (5)
System 2	Comprehensive Control	Institute of the Federal Judiciary	Control
System 3*	Internal Homeostasis	Council of the Federal Judicature Comptroller of the Judicial Power of the Federation	Administration Auditor
System 4	External Homeostasis	Judicial Power of the Federation	Planning Research and creation system (2.1) Client system (6) Environment system (7)
System 5	Prevention system	Supreme Court of Justice of the Nation	Identity Value system (1) Environment system (7)

Table 3 Comparison of the components of the Viable System Model with those that make up the Mexican Legal System Source: Self made

3) Proposal for a complementary solution

In the development of the model, it was found that it must have the appropriate technologies to simplify and make the work of each of the subsystems that make up the Mexican Legal System more effective and faster; Therefore, it is necessary to use a viable system that allows conflict resolution in a faster and more efficient way.

Therefore, it is proposed to implement within system 1 of operations, in addition to the existing ones, a subsystem called Alternative Justice, in such a way that there would be two subsystems in system 1:

- A- District Courts
- B- Alternative Justice

But: what is alternative justice and how would it help solve the problem?

Alternative justice, known as Alternative Conflict Resolution Means (ACRM), is a set of conflict resolution procedures carried out outside the judicial sphere, where the use of force does not intervene; Thanks to the use of alternative justice, people solve their conflicts outside the jurisdictional process, among these we find: conciliation, mediation and arbitration.

Taking this as a basis, it is proposed, in addition to the Viable Model, that in any judicial process, with some exceptions, before the jurisdictional stage, there is a mandatory stage of conciliation, that is, that the parties in conflict, can resort to alternative justice to solve their controversies in a short time, in such a way that if within that time the parties reach an agreement, the respective agreement is signed and this will have the effect of a sentence, so its compliance must be mandatory. In this way, alternative justice will allow dejudicializing many matters that are turned over to the courts or tribunals, thereby reducing the time of legal processes.

Considering the above, when implementing subsystem B to operations system 1, the viable MLS model would be as shown in Fig. 9 and Table 4.

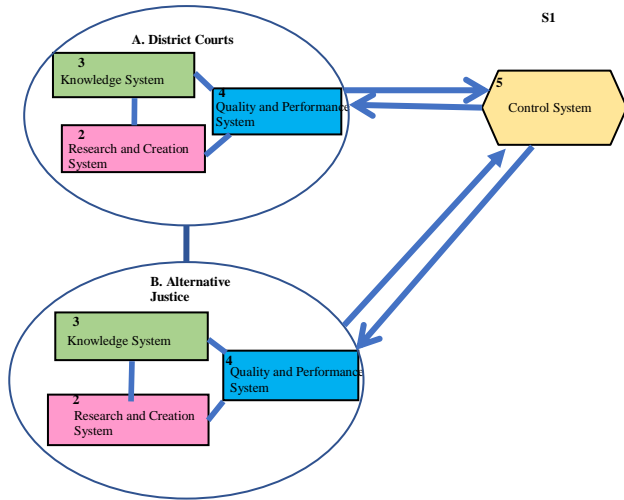


Figure 9 System 1 of the Viable Model of the Mexican Legal System
Source: Self Made

	Viable Model System	Mexican Legal System	Relevant Functions / Systems
System 1	Divisional Control	A- District Courts B-Alternative Justice	Operations Research and Creation System (2) Knowledge System (3) Quality and Performance System (4) Control System (5)

Table 4 Comparative table of subsystem 1 of the Viable Model of the Mexican Legal System
Source: Self Made

Conclusions

The Viable Model provides the basis for designing proposals for alternative models that can be applied to any organization with the same similarities, such as services, quality, technologies, etc. Likewise, considering as a foundation the methodology of soft systems of Peter Checkland.

The relevant systems found allow the design and adaptation of each system that comprises the viable model, whether in operation, coordination and / or administration.

The viable model designed, in this research, has the adaptability capacity to make the pertinent changes, as we saw in system 1 of operations, where there is a need to include a subsystem that helps the legal processes to be filtered and selected, which will allow greater speed and more efficiency.

With the global problem that is being experienced due to the pandemic, the Mexican Legal System was forced to use technologies to be able to solve urgent conflicts, even with virtual audiences, however, there is still a large gap on this issue; That is why the viable model proposed in this research has the capacity for the MLS to effectively satisfy the needs of those it should serve.

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