MANAGEMENT TECHNOLOGY FOR MEXICAN SATELLITE SYSTEM

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ABSTRACT

Systems and mobile communications are based on current satellite systems offer different transmission and reception of voice, audio, video, broadband data, etc.., Requiring satellite systems provide an efficient service and the further development technologically. To achieve this, it is necessary to make a technology that allows management to make further proposals according to the needs of the country, public institutions, private and public. This involves managing the technological, political, social and economic development.

Identify the problem, the underlying causes of war and raise the solution strategies for technology management of the Mexican satellite system. Based on the rules, conventions and national regulations and international satellite systems to streamline communication of knowledge and practices related to the processes of creation, development, transfer and use of technology.

Keywords: Management, Technology, Satellite system.

INTRODUCTION

Telecommunications are evolving rapidly every moment and satellite systems are no exception, this is the reason why satellite systems to evolve and offer new features in a matter of technology need to normalize all the services offered, infrastructure management etc.. This requires making the necessary arrangements for technological development and make them consistent with the needs of the country and offer new services.

Currently, satellite systems offer various communication services but needs to evolve new schemes for systems of transmission, reception and rules governing these systems

through the SCT in Mexico and this in turn with the ITU is based in Geneva Switzerland. By raising the technological management in the position to promote their development and offer new services, however, the implementation will be in charge of the Federal Government under the relevant bodies.

Based on the concepts of technology management and technology management introduced. It also contextualizes its framework for action in the Mexican Satellite System. From there it passes to identify the roles and own activities such as foresight, technology roadmap, technological innovation and technology transfer.

DEVELOPMENT

Management

Overall management concepts, management and management are synonymous despite the great efforts and discussions to differentiate them. The essence of management concepts, management and management is that all three refer to a process of "planning, organizing, directing, evaluating and controlling" as raised H. Fayol at the beginning of the century or Koontz [1]. With a date or managerial connotation management is presented as "a global and inclusive institutional role of all the forces that shape an organization" [2]. In this sense emphasizes the management and direction in the exercise of leadership.

Technology

Refers to the means used to produce, sell or use a product or service. Many authors are coming to standardize the following definition [3]. "It is a body of scientific and empirical knowledge for use in the production, marketing and use of goods and services."

Technology Management

Concept and scope

The following definition is very typical of publications CINDA: "Process of making and implementing decisions on policies, strategies, plans and actions related to the creation, dissemination and use of technology." "It is a process that deals with the interfaces between science, engineering, economics and management of institutions' technology

management promotes the organization and execution of tasks in close relationship with the players (researchers, engineers, scientists, technologists)

In the glossary of terms IDB-SECAB-CINDA, we find confirmation that management concept: "The technology management is the discipline in which engineering knowledge are mixed, science and administration in order to perform the planning, development and the implementation of technological solutions that contribute to achieving the strategic and technical objectives of an organization "[3]

The above concepts are the infrastructure for research to be undertaken by the Technology Management for the Mexican Satellite System, using methodologies systemic and not systemic. Will analyze various strategic planning models to select one that best adhere to the management problems technological Mexican Satellite System

In methodological terms the study is to analyze the Mexican Satellite System to determine the best strategies through the following stages: cost-benefit items, benefit identification criteria of values, governmental process analysis, definition of strategies and performance indicators and effectiveness with public and private institutions in the country

DISCUSSION

A satellite communication system is a microwave radio system that operates using a repeater in the sky at 36 000 km away. The repeater has one or more transponders that operate in a particular band of frequency spectrum, and whose function is [4]:

• Receive a signal from a frequency f1

• amplified

• broadcast to a different frequency, f2

The satellite is located at 35 784 km away on Ecuador and has a rotation period around the Earth in 24 hours, which is said to be stationary, then turning the same speed as the planet, its position to a ground station does not change.

BANDWIDTH

The band C was first used for commercial traffic by satellite, it is assigned two frequency ranges, the lowest for downlink traffic (from the satellite) and higher for uplink traffic

(towards the satellite). For a duplex connection requires one channel in each direction. These bands are already overcrowded because they also use common carriers for microwave terrestrial links.

The next highest band available for commercial telecommunications carriers is the Ku band. This band is not crowded (yet), and these frequencies satellites can be spaced as close as 1 degree. However, there is a problem rain. Water is an excellent microwave absorbing these short. Fortunately, severe storms almost never cover large areas, so as to use varies widely separated ground stations instead of one can solve the problem at the expense of spending more on antennas, cables and electronic circuits to switch quickly between stations. It also assigned bandwidth in the Ka-band satellite for commercial traffic, but the team still needed to use it expensive. In addition to these commercial bands, there are many government and military bands [5].

Table No. 1 Frequency bands of a satellite system.

A standard satellite is between 12 and 20 transponders, each with a bandwidth of 36 to 50 MHz transponder You can use a 50 Mbps to encode a single stream of data from 50 Mbps, 800 digital voice channels at 64 kbps or several different combinations [6].

SATMEX

Satmex is the leading satellite communications provider in Latin America that operates the Mexican Solidaridad II satellite, Satmex 5 and Satmex 6. Its satellite fleet offers regional and continental coverage in C and Ku bands, ranging from southern Canada to Argentina [7, 8].

Satmex currently has three satellites in operation providing local coverage, regional and continental levels to suit different cultures and needs of America:

- Solidaridad 2
- Satmex 5
- Satmex 6

Anywhere in the continent and at any time as necessary

Our satellite fleet is able to offer various services according to the needs of each client. Among the main ones are:

Permanent Service

• Satellite Segment

• Video Services

• interconnection of networks and cellular-telephone-Backhaul

• Broadband Services, Broadband -

• Access to the Internet Backbone-overnet -

Permanent

Because of the technology of our satellites and the excellent support we provide to our customers, Satmex fleet is ideal for permanent service focused on a wide range of applications.

Video

• Distribution of content to cable headends.

• Contribution to content providers

• Distribution of content to TV and radio services open-Broadcast -

• Direct to home TV

Interconnection of networks and cellular-phone-Backhaul

Broadband-Broadband -

Internet Backhaul Access-overnet -

Social Impact Services

• Public Telephones

• Distance Learning

• Telemedicine

VSAT Private Networks

Additionally, Satmex offers through partnerships with various integrators and tele ports, a wide range of Internet access solutions, private networks for voice and data services, video distribution, among others.

Occasional Service

High quality services for a wide range of applications:

• Coverage of special events (news, sports, espectculos, etc.).

• Video

• Distance Learning

• TV educational

Available 24 hours a day, 365 days a year. With our new online booking system you can book the satellite segment with 90 days notice and up to 15 minutes before your event.

METHODOLOGY

Following the above framework can be seen that within the PID is feasible to use a variety of planning models. What follows are some of the most widely used and discusses their advantages and disadvantages. The emphasis has been planning the concept and, indeed, its fruits and results, has motivated many researchers to continue studies in this area in order to extend their applications to various social problems.

When you know the basics of planning theory and is conscious of the need for a developing country, to address priority social problems, then these concepts become the basic tool to solve or at least try to address them the best way to give coherence to the set of actions aimed at this purpose.

Structure planning model Hazan Ozbeckhan [9].

The model proposes Ozbeckhan Hazan detect, identify, first, what is the problem with the system (if it exists). It is also necessary, once I defined the problem correctly, see the trends of the system and predict what his state of not taking the actions necessary for its proper functioning. Then they must agree the final state of the system, ie what are the objectives to be met, what goals should be reached, how to operate the system so that the results are the best. Once you have in mind the desired future for that system, then you should start thinking about how and with what resources are to achieving the stated objective, that is, what action will be taken and with what resources you can implement these actions. Once the system is implemented appropriate action is necessary to evaluate it. If the system does not meet the expectations agreed initially, you must re-examine the issue that defined the true facing the system, otherwise you have to start from the beginning, ie, it is necessary to detect and define the problem.

If the system truly meets the objectives set, then only need to continually evaluate the system to detect possible errors or, at worst, because a context switch in the system environment, identify new problems that system may face in their new situation. The steps of the planning model described in Hazan Ozbeckhan Figure II.4.

Figure II.4 Planning Model Ozbeckhan Hazan.

Problematic. The detection and definition of the problem (set of problems of interest) is the first phase of a planning process, in fact, is the main motivation to perform an action. So far almost all planning processes are born in response to the solution of a problem raised, though not the only motive for action.

The problem is a help to see clearly what is the focal object, defined as the system in which you are interested, ie the part on which it can exercise control by carrying out the planning.

It is so important to clearly define the system of interest or focal object, which most of the errors that have in planning is largely due to the low importance attached to this point. It is considered that the system of interest is obvious, that is, if one does not care about solving the problems inherent therein, then clearly you know it. Techniques. Within the first phase technique is used TKJ, classifying the problems by groups, which are detailed below. In addition, it also describes the model analytic hierarchy decision, the technique of Ishikawa and the Pareto Principle, applied himself well during this phase of the planning model.

Projecting future trends and logical. This part, together with the definition of the relevant system and its problems, is what is called the baseline projection. The design phase involves the forecast through a series of historical statistical data or trends identified in a qualitative way based on an expert consultation. Through this, pretending to know what the state or dimension of a specific problem in future. This state is what has been called logical future. It is actually the most likely future or natural, since all the problems that have disastrous results are extrapolated.

Planning legislation

The key task at this stage of the planning process is the precise definition of the aims of the system.

• Goals. They are the first products resulting from the planning process at a specific time, usually during the time that the scheduler still performs this task.

• Objectives. They are products of the planning process that can not be obtained for a specified time, usually occurring after the planning process itself.

• Ideal. It is a goal that can never be done, its function is to provide guidance on the horizon toward which actions should aim.

A common sight in the definition of goals, the concepts denoted by the headings: general objective, specific objective and specific objective. Through these you want to point out what was previously defined as goals and targets, respectively. 5

Strategic planning

Once you have determined the relevant issues, with the level of detail needed and are designed for the purpose to be achieved in a participatory manner, we have a clearer idea of the effort will be needed to transform the current state system to which is desired. You may now begin with an estimate of costs, man hours, specific investments, restructuring, etc.. The way that these resources will be used must be effective, efficient and coherent (an appropriate balance between the first two attributes). That is, to design a set of specific actions and strategies (set of actions) with the aforementioned characteristics to achieve the purpose of changing the system as envisaged in policy planning. This phase is where techniques are defined as formal or informal modeling, to perform actions targeted. The analyst or planner must take into account the conditions required by the model for validation: must be a sufficiently accurate reflection of reality as to be useful and can be used in the design of policies, and not so accurate that its development requires a very long time, the cost rises and its utility decreases.

The main condition for obtaining good results in policy planning is the creativity of the people involved in the process. Techniques. This phase will use two techniques: Ishikawa diagrams, generation and analysis of proposed solutions and strategies your choice, using the Decision Making Model analytic hierarchy, this is the definition of how to do.

Organizational planning

Having defined what to do and how do the planning model leads to the question with which resources must be available for the system to transform the way you want with the design of strategies.

Once the planning process enters the phase of determining what resources may be implemented or constructed such shares, determine what can be done effectively, according to the possibilities and physical resources, human or monetary system in question. This part closes the cycle of global planning method, the implementation of actions will begin to transform the system as expected if all was well designed.

Assessment

The evaluation phase refers to the fact of establishing the information system suitable to the process, which is able to detect the most common possible values of the most important variables can be perceived in time deviations from the desired values and make appropriate corrections. The frequency to evaluate the system performance can be balanced in cost of the observations and the cost of deviations. As noted, the concept of planning is comprehensive, participatory, and continuous feedback.

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