METHODOLOGY IN SOCIAL COMMUNICATION ENGINEERING. GENERAL NOTES ON THE METHODOLOGICAL PROGRAM: DIAGNOSIS, DESIGN OF SOCIAL INTERVENTION, AND THE TECHNICAL IMPLEMENTATION OF THE INTERVENTION.

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ABSTRACT

Five parts. The first provides an overview of engineering project work in Communication. It explores the relationship between Science and Engineering and between Theory and Methodology. It begins with the notion of observation and research culture, and then explores the relationship between Communicology and Social Communication Engineering. Second, the basic elements of diagnosis, the first stage of the methodological program on Social Communication Engineering, emphasizing the context of observation and analysis from a Social Communicology. The third section presents a discussion of the structuring elements of the diagnosis. We emphasize the figure of the systematization of cases and explores the work of the center of social engineering, the specific scenario of problematization. The fourth part presents the transition from troubleshooting to design solutions. The second stage of the methodological program on Social Communication Engineering, the figure of an exercise intervention as part of a good outcome and the complex problem area of the decision on where, when and why to intervene. The fifth part presents the third stage of the methodology, ranging from intervention design to technical implementation. Some technical elements of the picture of organization, construction and social development, technical implementation of the intervention. We explore and discuss the complex relationships between engineering, morality and politics.

Keywords. *Social Engineering, Social Communication Engineering, Communicology, methodological program, diagnosis, intervention design, technical implementation of the intervention.*

Presentation.

The proposed Social Communication Engineering officially started in January 2009 at the Intercontinental University, UIC, within the graduate program in communication. His own history within the UIC is one part the work of Jesus Galindo "Social engineering research training academies", for the years 1996 and 1997 at the School of Communication, and partly the work of Norma and Diana Macias Cardona from Jesus Galindo's proposal on the construction of the Communication Methodology figure. In another context, the Social Communication Engineering has a diverse background, especially the proposal in 2001 of "Social Engineering to set strategies for care of urban popular culture." In recent years articles have appeared in Communications Engineering for projects of "Sports and Civic" and "Management and Cultural Promotion of a civic culture." It is here to test a methodological approach of the course of recent years, from the two projects and closed that sense from at an early stage, and three more in development, the "Cyberculture and Social Networking Services in Cyberspace ", " Comuniconomy in Family Relations ", and" Social Communication Engineering and Strategic Communication. " Thus, in the following pages present a methodological point of how to operate a general model in Communications Engineering with some of its variants.

I. General outline of project work in Social Communication Engineering. Science and Engineering. Theory and Methodology.

The basis of the possibility of imagining synthesize a social engineering of any kind is the culture of research, including having their settlement in a scientific culture. Science provides us with two settings that empower us to the world, a rich sense of the things we see, and a method to build

systematic observation. All part of the observation.

Piaget the epistemologist shows us the story of his own life experience that all goes behind the action, the event happens first and the cognitive organization is back, trying to account for it. This course of cognitive organization remains largely unknown, but what remains true is that there is, it can be understood and highlighted, and can be induced and altered. That is, our mind is still full of surprises, but we know some of their secrets.

The starting point of cognitive organization, which is one of the resources we have to understand our mind, is observation. She is one of the first operations that builds us as human beings, and is also the basis of the configuration operation of what we call scientific method. This operation has individual elements, psychogenetic, but also collective elements, group elements, sociogenetic. Scientific research tested a variety of ways to understand and optimize their composition and organization, and also tries to expand, enrich. The more things we are able to observe and report them, the more powerful our mind on the game system the relationship between bio-psycho-social and environment. Science helps us to better observe the world, but also helps us to see how we observe. There are many possible types of observations, some are found in diverse cultural forms, others have synthesized the science and constructive thinking, others await us in the way of our development as beings who watch and observe watching.

The information and observation go hand in hand, information is the object of thought in which scientific observation concentrated. And there are distinguished other operations such as registering noted, the description of the observed, the systematization of the observed, the analysis noted, the organization of the analysis, and the knowledge synthesis of the observed. This is a configuration of operations on which to build a methodological program that starts looking at something his way, and ends by synthesizing knowledge about that something. The method works on observed data, the methodology and technology research work on observed data. The research culture is composed of the ways that shape our basic operation of the observation to ponder to synthesize knowledge, enhanced sense of something. And that sense of something is always a configuration of the world of action and returns to the world of action with more resources, knowledge, to do it. And this is the key point of the speech that combines science with engineering. And both social science and social engineering, social communication science and Social Communications Engineering.

The proposed Social Communication Engineering parts from the same simple set of Piaget and Psychogenesis, in a project that aims at a social communication Sociogenetic. We live in social settings that can be described and understood from a conceptual space of communication, from this perspective we are configurations of social communication and through them we live, we partner, we fight, we collaborate, compete, build and destroy. It is possible then a project and a program of scientific work that allows us to observe how this happens, with all its implications and variations. And if this is possible thanks to a scientific proposal on social communication, Communicology, you can also learn from this rich sense to do the same with the advantage of knowledge about it, or intervene in any direction to change what we do to get it advantages of various kinds, which is a constructive space in Social Communication Engineering.

At this point there are two components that require further comment at this time. The matrix that allows us to understand social life as communication, from communication, to built life as a communication figure. And the matrix that pretend to do something with that knowledge. In one case we are faced with the question of whether and constructive intent of a science of communication, Communicology, and in the second case we face the question of whether and constructive intent of a communication from Social Engineering, Social Communication Engineering .

Communication is a concept, is an object, but also a cosmology. It is possible to study various issues from the point of view of a communication concept, it is possible to study some issues such as communication objects, and may know everything from a logic that Communicology name. In the case of the communication as a thing, we have a good history of the twentieth century showing interest in this perspective, such studies on so-called mass media, or studies on something called interpersonal communication. The systematization of knowledge summarized in this sense is a possible task and current. Then there's the vein itself communicological. The question is whether

it is possible to perceive a field of phenomena and issues from a viewpoint that is conceptualized as communication. The answer is yes, it is possible. Cybernetics and Semiotics have trials in this regard. Communication then becomes a constructive point of view, for example of everything that has to do with figures of symbiosis, semiosis, exchange, interaction, complexity. On the other hand you can reach a level of general theory that allows all phenomena that can build from a conceptual space of communication that level of abstraction that allows a gradient to the concrete of various segments of phenomenal setting with regard to communication. That is, it is possible that psychology, chemistry, sociology, study issues such as communication, and there are studied from their points of view. Also you may see some theories of communication that can observe and understand everything that happens in a certain field configuration from a communication standpoint, as in certain cybernetic or semiotic perspective. It is also possible to construct an epistemology of communication from which all phenomena can be understood as a matter of relevance of a general constructive scheme on communication, as in the case of Communicology.

From this space of possibilities, there are various social communication engineering also possible. For example, studies on the effects of mass media have a part that allows us to know something or how much of an impact in certain media and public hearings, but at the same time also identifies what needs to be done to have more and better effect. Studies on the effects of the media are science and both are part of an Engineering in mass communication, provide information and knowledge for the media to be more effective in their purposes, as in the case of advertising and propaganda, and the entertainment industry. But they also propose information and knowledge to propose that public do something besides what the media are proposed as the testing of construction work of critical and active audiences. Science studies of effects of mass communication has elements of a mass communication engineering with different emphases and aspects. How can happen these various emphases and aspects is the subject of Social Communication Engineering of this field of study.

On the other hand the Social Communicology, observing all social phenomena from the perspective of systemic and constructivist social communication. Here is tested to include all kinds of knowledge about communication in either direction, and all kinds of social knowledge in any sense, everything neat and organized from a social constructive perspective on the concept of communication systems. Therefore, an armed Social Communication Engineering from this perspective may intervene in any social settings from a communication perspective. Which is a work at different levels of what is conceptually social communication, and work at different levels on what is technically from a construction point of view of social communication to operate in the praxis of social engineering proposal.

The proposed Social Communication Engineering requirements is basic conceptual work with social communication, and technical work constructively with it. On the one hand the development of a science of necessary communication, and the other the development of engineering needs that scientific, but also the accuracy of what the operational techniques of construction, creation and communication management. On the one hand the observation guidelines that allow methodologically reach the synthesis of knowledge about social life consists of the conceptual space of communication. On the other hand the concrete forms that until now have been synthesized to construct the social life from the perspective of communication, and methodological program to synthesize new and better ways configuration techniques of social life from the communication way. On the one hand the theory and concepts, on the other hand the techniques and specific operations.

II. Basic elements of diagnosis. The framework of observation and analysis from a Social Communicology.

The general methodological program of Engineering in all its forms is the basic constructive center of two figures, which composes its technological packages specific operation in analysis and synthesis of information, diagnosing problems and designing solutions. The logic of engineering is based on the critical analysis of an issue. The engineer wants to solve problems as opposed to the scientist who is

seeking answers to questions, both situations from a broad scope of configuration heuristics.

Before continuing on the issue of methodological program in Communications Engineering, a commentary on the concept of methodological program. Scientific research and No Scientific research have operating guidelines, customs and working methods. That is, any type of investigation takes place on certain habits, some repetition of actions, what we call an office, to investigate knowledge internalized experience is required which is similar to a cobbler or an experienced angler in their area of expertise. In the case of science the heart of these routines is called methodological program, and as its name suggests is a sequence of actions provided for in a prospective, in the form of the concept of method, and constructed under the rigor of a logical surveillance.

Some of the most popular program and successful methodology in the history of the social sciences have been for example, the statistical survey-experimental design- statistical survey, or sequence Survey-Focus groups-survey. There are some others who also have a certain prestige and widespread approval, as the sequence depth interview- ethnography- interviews, or sequence Historiography- History Life- depth interview. And there are many other sequences, some that have been repeated research in research, research investigator, and others that have been applied only occasionally, and expect to be tested again to show its efficiency. The social sciences are built on the operation of these methodological programs.

In the case of Social Engineering general methodological program of Engineering also has its own version. The general sequence of methodological program in general engineering, diagnosis-design, is subdivided into other operations to complete the guide on which you work. As is the general form is still diagnosing the problem and design solutions. To which may be added in general terms also third macro operation completes the sequence, the application of the solution, which has its own set of configuration items, dependent in part on the design of solutions, but mostly dependent on the context of social action, social life where the solution is applied. So the full sequence of the methodological program of social engineering would be Diagnosis of problem-solution design-technical application of the solution.

Exploring in principle the first part of the sequence, the diagnosis of problems. This first major operation of the Social Communication Engineering is a look on a specific field of social life to see how it is made and what is his organization. The diagnosis is moving on a space-time dimension referring to this. The first of which can tell is what appears to the perception of the engineer. At this moment, the first trial on the situation observed directly dependent on the conditions of approaching the subject problematized.

The situation depends on early diagnosis of the situation background, how they came to seek a diagnosis, pre-diagnosis. This parameter of the engineer's work is key. The situations that trigger the possibility of a diagnosis may be of various types. On the one hand the engineer approaches the object stage on his own initiative, for the interest in participating in any social situation. This is a strange case but possible, for example in terms of academic work. Typically arrive at the scene in response to a demand, and this is the most common professional profile of the engineer, an expert in diagnosing and solving problems, and therefore actor sued by individuals, companies, equipment in need of your service . The definition of this situation is not less, social engineering is primarily a qualified professional service. The engineer works when called to do so, in principle it would not do otherwise, should he do otherwise is an interest beyond the professional, moral or political grounds. In general we are talking about a professional office within a social space supply and demand for that grade. Let's say for now is not so, because the title of Social Engineering as such does not circulate within the social space, but the situation exists. It happens when someone hires a therapist, a mediator of conflict, an expert in advertising or publicity, a strategist of various kinds, in order to intervene in some social settings. The diagnosis is therefore an effect of occupational demand, although it may be the effect of a demand for another type.

In the case of Social Communication Engineering the demand is a first diagnosis by the applicant. The engaging of the services of a social engineer has some kind of problem which calls for professional help to the engineer. With this first configuration problem, the social engineer responds to the demand and explores the situation to associate what is happening with the problem that triggers the professional service. In this

second phase may be that the settings match diagnosed in part or completely with those obtained by the applicant, but you may not be so, that the problem is elsewhere, a very distant and distinct nature of what the plaintiff received as a problem at first. As the demand for a patient to a doctor. Hence the technical appraisal of the Engineer so that it allows you to identify a space problem, if any.

This is where Communicology comes into play for the professional profile of the Social Communication Engineering. What the engineer diagnosed communicological depends on what you can see from the analytical conceptual space science of communication. As we shall see this is not the only source of observation for the diagnosis, but in this first presentation of the overall operation of the methodological program, the key is mastery of the specific situation from the point of view Communicology. And it will be from the engineer can design then a gradient solution.

Communicology, science of communication, suggests a cosmological view of the social from the figures of the information system and communication system. With them is built around the original apparatus scientific worldview. The two types of systems are associated in five dimensions, three configurations and two trends. The dimensions are the expression, interaction, diffusion, structure and observation. All three configurations are the basic theory, which involves the dimensions of interaction and diffusion, methodological, involving the dimensions of expression and structure, and the epistemological, involving observation. And the two trends are domination and collaboration. From this triple constructive organization can put together a scheme of social life, and therefore of any phenomenon or social field and observed.

Communicology is set in five dimensions, the expression, diffusion, interaction, structure and observation. The two plants are the diffusion and interaction, each one referring to the configuration of information systems and communications systems. In diffusion information systems are related in one fundamental sense, a system acts upon the other and puts it in his way. In the interaction of information systems affect each other, thus their mutual varying forms through such action. Diffusion and interaction shape both types of communication systems, according to the relationship between information systems. The expression and structure are methodological dimensions, one referring to when collecting the data, at the time of observation when it appears that something pops up and registered. In that sense is an expression of constant movement of information and communication systems, obtained in a time of observation. The structure would be the observation of movement when being carried out, which means that information and communication systems, resulting in a record stated, are active and transformation, flow that will lead to a moment of similar or very different expression. Expression and structure refer to two distinct phases of observation, capturing a state, a result, product, and observing a process, a flow, a movement. Always in relation to information and communication systems. Observation is the fifth dimension, epistemological, which plays off the other four on the setup time and event space, movement, to record, understand, and appreciate. It is this fifth dimension that refers to a second order cybernetic system perspective.

The two basic trends complete the scheme. When an information system aims to put in form to other information system, the basic trend that appears expressed is that of a communication system- diffusion-domination. When two information systems seek to alter their ways mutual coordination for the benefit of both, then we have a basic tendency expressed in the form of a communication system interaction-collaboration. Between the diffusion and interaction is a game of domination gradient collaboration, which is specified as the situation in that particular game being viewed.

Communicology notes and build visions structured expressions of social life, in that movement indicates the operations that constitute these expressions, the set of structuring processes. The Social Communication Engineering of this information to intervene in social life within a basic methodological program situational analysis and design of intervention. That is, the trends, processes and observed patterns, the Social Communication Engineering may act in the direction of emphasizing some of the trends, processes and configurations, or so as to reduce or maintain. Science and Engineering are complemented in this way.

With these forms of science and engineering communication, cultural promotion, for example, can analyze situations, synthesize knowledge schemes on them, and intervene in some way.

Science and engineering communication, constructive agent empowered culture. The point here is that culture is perceived as information systems and communications systems. First place was taken on the broader concept and rich culture from the anthropological sciences. And secondly, this concept is put in the form of visions communicological diffusion and interaction through information and communication systems operant. Semiotics is another good ally in this work, Pragmatics in particular is an important source, as well as the crucial Memetics and thermodynamics. The result is that the cultural promotion takes on a status of Social Communication Engineering, given his vocation to intervene in cultural forms.

The diagnosis put to operate the communicologial view in the situation where the apparent problem that caused the demand for professional service. The engineer makes a situational reading of space from which the demand, and sums up his view on what is happening from a viewpoint communicological. The second movement is temporary, the structuring. The engineer after he noticed the expression of information and communications systems, they define the settings in the form of diffusion or interaction, and makes a hypothesis about the tendency in the composition and organization of the systemic relations from the perspective of domination and collaboration. But lack central diagnostic complement to observe the process of building over time, the only way to accurately identify the various trends.

Work on the structure is performed by the Engineer in two parts. First present to the past, seeking to identify the configurations of information and communication systems in the past, at least two or three moments. This can be observed trajectories, indicating the items that appear and disappear within two or three times before the current trends and thus point of cooperation or domination. The second part of the engineering work is done by pointing to the future, making the assumption that as observed in the reconstruction of the past can continue going forward or not. When structuring this work is complete diagnosis is too. Science Engineering has helped better observe and conclude about what happened that led to what is happening, and what will happen according to what has happened and happens.

The Social Communication Engineering from the figure constructive social engineering, see what unites and separates people, and in the case of Social Communication, how is that sharing binds or separates people. This simple set of operations constructive social communication, the Social Communication Engineering builds his observations for diagnosis, to clarify what is putting the social system, be it of the magnitude that is, to a movement that empowers metabolic and lets move on, or that it weakens and puts it in the direction of decomposition, or on the tense situation and put it on a possible collapse. These three results can be diagnosed as suitable for the system in question or not, and states can be diagnosed as suitable or not for the ecological system in which the object system is observed in relationship.

III. Diagnosis structuring elements. The figure of the cases and the specific scenario of problematization.

In this second part of the overall operation of the Diagnosis will seek to explore the figure of the concrete, the strain that causes the concrete on the trial of social engineering. On the other hand will try to highlight the importance of case analysis, without which it is very difficult to advance a good standardization of diagnostic and test solutions. The real world is the source of elemental structure of the systematized experience of practical knowledge of engineering. If one part is very important the development and collaboration of a good science of communication for the development of a good Social Communication Engineering, on the other hand is more important to ensure specific cases, or analysis of special cases, to complete the kind of practical knowledge that the Social Communication engineering needs, like any other form of engineering.

The Social Communication Engineering is built on a double-side configuration. On the one hand support in a theoretical-methodological view that allows collect, record and organize information from the specific situation being observed, to question and intervene Social Communicology. On the other hand the systematized experience in cases, allowing a faster route to focus on the case from previous similar cases, which is a route that culminates in the Comuniconomy, the standard configuration of problems and solutions in models typification that

built prototype problems identified and some solutions also typically associated with them.

In the first configuration Communicology operates alongside the specific methodological guide diagnosis, paths and trends. Communicology and methodological guidelines are complementary in the diagnosis operation. On the one hand, the theory can see something that makes sense and from which it can conclude on the description and configuration of the system construction noted in the relations between information systems and communications systems that constitute it. On the other hand the methodological guide allows the appearance of the size of structuring communicators, how it has built over time the observed system, what the architectural style into the future. Link theory and methodology in this general framework of the basic components of the diagnostic operation.

Diagnostic operation thus has a general working scheme to be applied to any particular case in any condition and circumstance. This is the basic way to diagnose tensions and trends (problems). But in a complementary manner is past experience with particular cases systematized. Throughout the operation of the Social Communication Engineering in certain policy areas the process is learning. The very system of knowledge of engineering is directing what is happening in the course of its operation in various cases. For example, in the course work of GICOM, Group towards a Social Communication Engineering, sport, cultural promotion and family relations are objects of work. After a while, the year of work in various cases, the system of knowledge in each of these areas develops learning, future cases which appear within these areas will have more prior information to operate the systematic observation exercise diagnosis. This phenomenon of learning is key to the development of the entire work program.

Another possible example is ongoing work with medium-sized enterprises in the Intercontinental University interpersonal communication program. After two years and four generations, there have been some cases on a regular basis, which can now focus on new similar cases with better conditions of observation and analysis for the diagnosis and the rest of the methodological program. In these years have been typical cases related to social action through interactive and social networking sites on the Internet. Or the cases of intervention in the organizational structure of small and medium enterprises with a family or semi-professional profile. Today it is possible in these three types of cases move faster in the diagnosis through learning. This figure of the systematization of information on cases is desirable and necessary to advance the overall work program.

So on one hand the general theoretical-methodological and the other the systematization of cases in specific areas of social settings. Between these two elements is constructed action profile of the overall operation desirable initial diagnosis, the main figure of a general methodology of Social Communication engineering construction. We need progress on both fronts, both theoretical and methodological construction general, and in the systematization of individual cases in specific areas of social settings.

On the other hand there is the issue of the case which is against the intention of observation for diagnostic exercise. Here are two major dimensions. The first has already been presented in the previous pages, the diagnosis in a general methodological theoretical sense, and learning from systematic case. The second corresponds to the same concrete situation by observing. The first thing that appears here as important is the size of the observing system, the weight on the quantity and quality of information available and to obtain, and available resources to operate in space and time.

About the size of the observing system. This figure part of a constructive decision, where defines the basic shape of the system by observing. Depending on this decision, the internal configuration of the system appears with a level of complexity in composition and organization, and so does the ecosystem relationships, relationships with systems outside the system to observe. This relationship on the interior and exterior is the key to start the diagnostic work. For example, a young couple can be the basis for monitoring system, for both families, friends, neighbors, school friends or work, is context that affects and is affected by the system young couple. But if the system to be observed are the two families, the configuration of system-context changes and settings within and outside the system. And if the basis of observation is the couple in public social life, then the family is context. And so saying. The prospect of analytical systems allows many games, and if we

add communicological configuration of information, communication and communion, the analytical possibilities are more complex. And yet lack the time dimension, the interplay of systemic relations in the past and into the future. The decision is key, and can depart from the theoretical and methodological guide and systematization of cases, or on the specific situation of the study, the conditions of a contract for professional engineering services, the subjective conditions of the plaintiffs in the service, the first exploration of the problem situation. That is, the decision on the basic system of observation is crucial, and depends on several factors, some theoretical, methodological and other practical.

The balance on the quantity and quality of information available and to obtain. The engineer in principle depends on the quantity and quality of information available with which to carry out the analysis itself forms the diagnosis. If this information is sufficient and good quality diagnostic conditions are optimal. But if that information is insufficient and of poor quality, the chances of a good outcome are reduced. Thus the guide prior information is very important to have good theoretical support complementary and specific to help the theoretical and methodological approach communicological general, and have a good system of information from the case study. If we have this initial framework to guide perception and recording, everything is provided accordingly. Given these resources, which can be scarce, we have the help of two tools, among others, to build the information systems necessary and desirable, ethnography and semiotics. With all realize that composes and arranges the observed system and its context, both present and in his career. And with the other ethnographic data systematized in the figures of information systems and communication systems communicological proposal. If we also support other sociological or psychological-social, even better. The Social Communication Engineering is a general methodological theoretical frame complex and complementary relationship with a multidisciplinary and transdisciplinary grid.

And on the third part of the operation on the concrete, the evaluation of available resources to operate in space and time. An engineer never acts alone, is always part of a team. The profile of the team is also very important, is comprised of specialists in various fields, besides sharing the same general concept of the proposed work. This team would be the first link in the chain of resources available to act in time and space. A team is defined from everything else, that is ordered in the working conditions of the diagnosis in critical path and blog. Much can be done if we work program is necessary and sufficient for this. That has costs of various kinds, costs that someone must pay. This is the horizon of clear limits for diagnostic work, with whom and with what we have, for how long, to act in what situations to observe. The issue is strategic, you can do to be done to reach what you have.

The stress of the case is a very sensitive issue, also has a configuration of learning. The case may be part of the general case, the limits and conditions of work will be opportunities to work and results. This is a small cosmos to systematize and outline. We need to move in the general and special conditions of the diagnosis from an administrative perspective as well as constructive.

IV. From the troubleshooting to the design solutions.

The second time overall methodological program of Social Communication Engineering, design solutions, depends directly of the diagnosis. Since the diagnosis has several options to take place, the decision of the shape and direction of intervention depends on the strategic view taken at the time of start to the course of research.

Diagnostic technique works in the history of information systems and communication systems observed in the general system under observation and social ecological context. The key then is the observation of information and communication systems. The diagnosis shows the state in which the system is observed at this point there is no greater trial than the information itself orderly paths, trends and tensions. These are general scenarios resulting diagnosis. On the one hand the movement of system configuration information and communication systems trajectories and trends, and on the other hand the tension between them. So what appears is seen a configuration that indicate how things are in the observed system. Technical status of this last operation is the diagnosis that is both the first in the design of solutions or assistance.

This last operation identifies trends that favor or disfavor certain future scenarios, and tensions

between systems that promote and another chance. That is, at this time the engineer is the most critical of his office, decide what will be favored to the future and to be inhibited or disadvantaged, resulting in an increase or decrease in certain strains, leading to some future scenarios desirable. These future scenarios are desirable goal of intervention, action designed by the social engineer to promote this and not that scenario, in this sense and no one else.

So we split. First, the final diagnosis. What you see is a portrait of the current situation of the observed system, with a sketch of the paths that brought him to this present situation, and a sketch of the likely trends for the future. The information is configured in the form of communicology speech, and generally supported in other ways not so general in other scientific speeches that can be anthropological, sociological, social psychological, cybernetic, semiotic, linguistic, economic-political even, these are the historical scientific sources of Communicology as GUCOM work, Group towards a possible Communicology. Thus, the first thing that leads to the design of the intervention, the test solution of a problem, is this portrait of dynamic system configuration.

As an example we could point to mention one case, an investigation into museums, from the perspective of cultural promotion and management. The scheme involved is as follows .-

- There is a museum information system that matches the public information system, setting up a diffusion communication system consistent. The museum aims to certain effects, and that audience is concerned in that direction with a positive disposition to do so. This audience is a certain social class with a certain social category of cultural enlightenment, that we know from sociological work support. The museum is perceived itself as an information system dedicated to involvement in a sense of that audience, and everything is therefore largely adequate. This is the working hypothesis. But it can be the museum does not knows what he's doing, why it does and who is affected.
- There are other audiences, alternative information systems, which come into contact with the museum information system. The effect of this public museum is a real communication system for the museum IS, but for museum these audiences do not exist in their efforts to disseminate, if any effect does their action on them is not their intention. These communication systems are most of the situations present in the museum. That may or may not know by the museum.
- And we still have a potential public IS, which never come into contact with the museum IS, which set a larger amount of CS not real. The museum is only communicating with one public IS, and is not communicating with many public IS to the museum.
- The point is that the social engineer wants to accurately diagnose the situation and intervene in the way of expanding the number of museum communications systems, at least to the public IS they attend the museum, but are not part of the Museum CS. That is, cultural transmission engineer promoter is a target for intervention, part of a pre-diagnosed problem, a situation that ends up setting and adjust the technical diagnosis.
- The engineer makes the logic diagnostic work on museum and museum of design types of museums, as a general proposition and types of audiences. The engineer identifies certain logic of the museum as communication systems that historically the museum concept has been built. Identifies this particular museum seen as an example of one or more of these forms historical museum. For this it relies on the specific conceptual framework of the history of museology and museum studies, sociology of the museum and the semiotics of the museum and its public.
- In addition the engineer to accurately diagnose the type of current and historical public museum observed. Identifies these various public and IS. For this it relies on current public ethnographies and historical museum observed, and a complementary framework of sociological and psychological social support.
- The engineer completes his diagnosis arming its IS scheme. On the one hand the museum IS identified in the conceptual historical analysis of the history of museums, on the other hand, the public information systems identified by the museum's ethnographic, sociological and semiotic. The engineer identifies the diffusion CS that is in operation with some success (the initial hypothesis), and the diffusion CS that are not operating, but are present as a possibility in the museum system observed (in part according to the initial hypothesis).
- The diagnosis turns into intervention design. The engineer decided disadvantage some aspects of operative diffusion CS, to encourage others. The claim is that this operation has the effect of other diffusion CS appear not currently exist, and that the diffusion CS disappears if there is at this time. It departs from the technical diagnosis, which

allows you to identify these trends present, as well as the magnitude of the stresses that cause and that cause them. It is possible to act from the figure to invest the least amount of energy for change as much as possible. This is always the first stage of an engineer from the first scenario the costs begin to accumulate in various ways.

- The design is placed on technical operation. The operation technique is the latest configuration of the methodological program of social engineering. In this case, the engineer proposed social analysis of the public who attend the museum, and discussion groups with various types of experts, and other technical operations. And the result is that the museum meets the public was not fulfilling and that if they were attending, it does serve the public who had always attended, and initiates programs to bring new audiences to the museum, and new program to bring the museum new audiences, with a diffusion communication system empowered and extended with new information and communication technologies.

This example shows some of what has been said here, the diagnosis allows the engineer to decide their course of action towards a desirable goal. And this is the point on which we have to stop for a moment. In the case referred to the museum the engineer was at first an idea of what was and what was happening. The engineer proposed research as a task that does not cost the museum as a project from outside the museum. The engineer has a pre-diagnosis that something is wrong with the museum, who spends a lot for the results obtained, and in particular it seems that serves all the people who come alike. This is an impression of the engineer, who wants the museum to have more effect on the public to come and potential audiences who do not attend. The engineer managing the project, working diagnosis and displays the museum. Here the issue is not only that the work is done well, but the museum convinced of its usefulness. The engineer doing its job well and convinced of its usefulness to the museum. Not everything proposed by the engineer is accepted by the museum, but a good part, on the whole concept of the proposal. Hence, programs are initiated to change the museum, the engineer is hired to do so. The overall work in Communications Engineering is a success.

Another scenario would have been if the museum calls the project. With the burden of intentions, commitments and responsibilities that entails. Here it becomes clear how the technical work is independent of political or subjective system configuration observed in this case the execution of the methodological program and the political morality of the authorities and museum staff. But that is one thing and another is that these two areas are always in tension and associated in various ways, some favorable to the engineer's technical vision and some not so favorable. Between the engineer and the observed system there are several possible situations, which may be complicated further when a third party who is affected by that relationship, and it may be that research calls, or receiving the direct effect of exercise such as public as possible in the case of the example of the museum, a civic association of public museums.

This shows the need for a new type of information system, which establishes the types of claims, types of possible relationships between observed system engineer, and the types of possible relationships between engineering, observed system and associated social ecology. The social engineer on which this program has a methodological peculiarity is acting on other possible social engineers, environmental commitment. Any project or work program includes the effects of context, interested or not the customers, be they political, private agents, populations, or individuals. So we have a whole world of issues to consider in the field of practical action of social engineering as well as those pertaining to the technical trade. The social engineer lives in a social matrix, thus also must be an expert in how his office comes into play with the systems of information and communication ecology where it moves in a professional manner. That's part of the last operation on general methodological program, the Technical Application.

V. From Design technical solutions to the Application. Technical picture elements of organization, construction and social development. Engineering, Ethics and Politics.

Diagnostic scheme shows the trends and tensions. The design of the intervention has to decide which trends and what strains will be favored and which are disadvantaged. The technical implementation of the intervention is the practical implementation of design intervention. One thing to know what happens, another is to

decide what can be affected to move a course of social life in one way and another, and another thing is how to implement this intervention to achieve what is desired in the design of intervention.

The ideal situation in the design of intervention is to be presented several possible scenarios for the future under the various settings that boost costs. That is, the social engineer after diagnosis does not propose a single desirable scenario for the future, proposed several, some variants of others, some different from others, some very unlikely, some very feasible. The point is that from diagnosis all these scenarios are possible according to the trends and tensions identified. What varies with each scenario is the involvement from the intervention of the various trends and tensions.

The first trend scheme comes from the Diagnostic and tensions in various scenarios appear as if this or that tendency or tension remains, disappears or becomes stronger. The combination of these scenarios produces some general scenarios. All this appears only in the work of diagnosis. That is, without the engineer proposes an effect of intervention, all this can happen if this or that tendency or tension are affected in the process of events. In this game some scenarios analytical totals seem more consistent than others. This definition depends on the quantity and quality of information that are in place to make the diagnosis. Therefore appear at this point total possible number of scenarios, some more likely than others. This potential gradient which is part of the decision on intervention, the intervention design clothing that will solve any problems in implementation, or group of problems identified at the Pre-diagnosis and diagnosis.

On this gradient is about the possibilities which are assembled the total scenarios desirable and undesirable intervention design. That is, in principle, the engineer only benefit any part of the gradient, and gradient will disadvantage other parties, supporting certain trends and dimming the others. The first outline of this framework is making some possible overall scenarios require very little power and intervention to establish themselves as real as the observed system into the future. That is, with little intervention from the intervention can boost a scenario, however, has much going for it to happen. What the engineer does in this case is to help it happen what may happen with high probability for no intervention. The engineer has this situation as ideal. But from the first situation, comes the rest up to the most expensive and complicated.

For example a teenager is brought into the social engineer to be corrected in his behavior. The engineer diagnosed the situation and concluded that it touches the mother to do changes in her schedules during the day, and with it all is ordered for the benefit of what the teen wants, parents want, the groom and friends want, and residents and families want. This is a very subtle change that will bring the desired changes for all, greater harmony, disappearance of the level of conflict with parents came to seek professional service. The amendment identifies the engineer is a good choice from a technical diagnosis. It may be that the mother accepts the change and eventually realize that it was the best. But she may not accept this change and require other, and things get complicated. In the first scenario, everything is technically simple and economical, the second increase costs and must perform a multitude of changes. The second scenario is that subjectively more like all participants in the social ecology of the observed system, there is a moral that does not accept the first stage and thus tightens the solution into the second.

The key point here is what you want to happen after the operation. This is very delicate, the social engineer is working with social forces to promote certain scenarios and disadvantage others come to pass. The immediate question is do you really can? And after this technical question is the ethical question, should it? The answers to these questions have a first configuration separately, and a second integrated configuration. Let's see.

The first configuration has the item in the separation of a technical issue one of ethics. Let us see the two issues separately. From this point of view the answer to the engineer's ability to intervene successfully in the social movement depends on his skills and abilities to diagnose, and his skills and abilities to design and execute successful interventions. In this sense, the technical issue has a rehearsal space and yet big mistake, and moreover has a proven efficiency in certain protocols. For the diagnosis we have emphasized all the resources required for proper implementation, and in that sense there are protocols that have already proven their efficiency, but others are still on trial, as the same analytical protocol from Communicology. In the

case of intervention design decision space is defined by the intention with which the case is claimed to be noticed and intervened. And in the case of technical application is again the situation of resources and expertise. As can be seen and Application Diagnosis intervention design technique are strictly technical aspect can be solved by study and systematization. In the case of decisions on intervention the matter is another, there operates largely political space and professional ethics in the every day life profession of social engineering.

The decision to intervene in itself, being part of a technical methodology, is the place of ethical and political issue of Social Engineering. Prior professional service demand of a social engineer a scenario exists ethical-political and moral relations of power. In the social matrix in which acts of social engineering. There is no action independent engineering and political interests of ethical and moral alibis. This clarity is necessary not to mix technical with social aspects of subjective or contextual structuring of the technical operation of engineering. So what remains is an ethical effects of the trade setup. On the one hand the natural limits of social life in which the engineer is moving in a professional manner. But then the limits as social engineering guild can propose themselves. In the example presented in technical know what suits the system in momentum and energy economy, but that solution is not accepted as moral by the observed system. The engineer is seen in the choice of adjusting their trade moral coercion, or manipulate the situation to move it so technically where it seems more appropriate.

The issue of the weight of social context is there as something which has to negotiate, agree to mediate, and even intervene engineer from their own lines of management and conduct of their behavior. What can and should be part of the baggage basic training is the configuration of lines of direction and leadership of its behavior, by choice, by setting agreed from something that can be called professional ethics, scientific, social-ecological ethics . No act to hurt anyone knowingly is one of those lines of code of ethics to which we are referring to. Prevent collateral damage is another. Not cooperating with the social damage to any actor involved directly or indirectly in their professional action is another line. So saying, also in a positive way, always working to enrich the culture of information and communication, to the extent possible and prudent, as part of the first mentioned lines. Contribute to the promotion of a society of communication and / or a community of communication, within the same limits of the prudent. These are two groups of lines of behavior of potential chapters in the book of codes of ethics. This is an issue yet to be developed in full, besides being an issue that requires constant adjustments as the discussion itself on its components.

Is then pending integration of the two core areas of the trade ended, the technical and ethical-political. We could point to what in the world of genetic epistemology, which is all part of the whole constructivist social engineering program presented here, are called moral complexity levels. Low levels are selfish, and a sense of justice near or associated with the eye for eye, tooth for tooth. Displayed intermediate levels associated with a moral law, as the case in many Western societies. And at higher levels of moral development are genetic forms of decision that go beyond the codes and standards, ethical actors in those last few levels of cognitive moral settings assume that the common good rather than individual, and that the individual well must be cared for the common good in a reciprocal sense that the individual good care of the common good. The code of ethics that we propose here is at the intermediate levels, but aims to superiors, which also correspond with what is called Community of Communication in the communicological social typology.

As the last item is a note on the technical resources we have at this time for the technical implementation of the intervention design, the answer to it can do, because he knows, because it has elements to it. Social engineering is a knowledge-based system as proposed in XXI century, but prior to this initiative there are a number of practices that can now be incorporated into its body and competition. The same happened with the other engineering synthesized in the twentieth century, as well as constructing their own concepts of operation and organization, undertook to systematize everything in the past could be recovered as constructive technical operation, even without the concept of engineering. From this point of view Social Engineering and Social Communication engineering have much to do.

The theme of the technical implementation is the same as the rationality of social action in a historical sense. The project Towards a Social

Communication Engineering in principle we have identified some areas of technical application in historical form show the power of social intervention. In a macro social sense, propaganda and advertising, political and religious proselytizing, marketing, market economy, the entertainment industry, cultural industry, mechanical engineering, working with social networking techniques community development, social work. And in a micro social sense, therapies, techniques in forming groups, the proposal of human development, institutional analysis, the social analysis, the participatory action research, the praxiology, socio-praxis, communication in organizations. That is, there are many contemporary forms of social intervention that can be systematized as figures of technical application due to its proven efficiency. All of them are due to different intentions and constructive frameworks, but they have all proven to alter the course of social life. It is therefore important for social engineering resume them and arrange with general criteria established constructive, based for example classification principles and operational similarities and differences. Information processing time until a more organized pattern of constructive logic operations, to put in a systematic way to all these applications now present at hand, but for now they lack selectivity and hierarchy principles common to all. And all this add all the missing communicomethodology and ethno methodological techniques, all the applications of effective intervention techniques from popular knowledge of the customs and the culture.

Outstanding work in this regard is the construction of information system of engineering applications. The road ahead is long, but the intention is there and the systematization process has begun. Building on the work of GACI, the Group of Task Force on Culture Research, we know there are technologies of observation-science research and action-intervention technologies. GACI ranked second in two parts, applications that are configured from a demand for professional services, and applications that are configured from an intention to intervene from a political, religious or economic poin of view. Then there are other qualifying criteria. The proposed Social Communication Engineering has taken this work and develop at this point in the program of GICOM.

In this way completes the methodological program of Social Communication Engineering. Pre-diagnosis first, then the diagnosis, then the design of the intervention, and finally the technical implementation of the intervention design. The intention was to present a general outline of the work program of GICOM, Group towards a Social Communication Engineering, will follow other more specific notes of each case presented here, as well as examples and more systematized experiences.

As a final comment.

The Social Communication Engineering and Social Engineering in general are projects under construction and still have the feature of possibility. But passing such programs work toward true realities constructive process. The idea is simple genetics, all the time we affect each other, this is systematic in technical how that happens until you reach specific methodological models and programs. The Marketing and has done something similar, propaganda and advertising as well. Strategic communication is moving in that direction. Hence the proposal is to extend the wave of technical requirements to all fields of social life, macro or micro, considering that this knowledge can be synthesized, and it can also be part of the common sense of every citizen. In this horizon moves GICOM program, we are part of the constructive movement of an emerging Society of Communication toward a possible and necessary Community of Communication. The Social Communication Engineering is part of the construction process of these horizons of social life. We are their advocates, the process has been intensively only a few years, the background faded over time in the past decades, and the future is a very short time for everything we need. The call is that we need many more in this project, only joining efforts of many we can try something close to what we now intend, to change the world knowing how to do it and do change in community.

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