

Information Systems Between Companies and Hospital Institutions: Differences, Common Points and Analyzes SWOT, within the Framework of a Process Approach

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Abstract— The company of production of goods or services is a complex system, with organized socio-technical character to meet the expectations of its environment while remaining profitable and while seeking to achieve goals of reactivity and quality of service. Its organization itself crystallizes today primarily around process implementing a set of resources. However, the environment of the company changes and the latter must adapt continuously. Moreover, the company is the seat of sometimes unexpected interactions between the resources. All this can induce a certain number of unexpected situations, situations called at the risk with which the company is confronted. Steering becomes difficult then because it is necessary to maintain the coherence and the performance of the organization, without degrading the profitability of the activities.

This is why any system, regardless of its level of development and its mode of operation, assumes the existence of an information system. This one has as a task to produce the data necessary to the determination of the priorities for the assignment of the available resources, to the evaluation of the programs implemented, to the extent of the State of activities and needs. This work is a comparison between the information systems of industries or the companies of productions of the goods and those of hospital institutions, by determining and defining the processes of each of both, in order to highlight the differences, commonalities, and to develop a SWOT analysis.

Index Term— comparison, information system, hospital information system, process approach, differences, common points, analyzes SWOT.

I. INTRODUCTION

In an increasingly competitive environment, organizations in general become increasingly interested by the issues of development and the evolution of the IS on the various levels. This will is justified by several criteria: Initially, the importance given to the field of IS saw its role, but also its weight in the modern organization. Thus the famous definition of REIX (1998) illustrates this advancement, by saying that “the Information system is an organized whole of resources: hardware, software, staff, data, procedures allowing to acquire, process, store, communicate data (in the form of data, texts, images, sounds, etc) in organizations”[27].

In the second place, IS is recognized like a determining factor of creation of value for the organizations. Without forgetting the weight of the investments as regards IS in the total of the investments.

According to our research in this field, we noted that in order to apprehend a complex system [17], it is necessary to have a reading guide for comprehension of the system in the intention to prepare a model close to reality and exploitable. A groundwork which describes the various formalisms (methods) to use to be able to achieve the aim of the study, which is in our case the implementation of an IS while being based on a process approach, in order to answer the continuous improvement in a complex system with character socio-Technical [18], [23], [31],etc.

Our study is interested in two fields, the first is the management of quality, and the second is that of IF. For the management of quality, it became essential in the management of an establishment in order to cope with the constraints structural, social, ethical and financial. It is paramount that the policy is understood by all the actors, which the objective is to provide the best service at the best price, with the profit of the greatest number; it is the petrol even values of quality management. For the field of information systems, it is today a major lever to facilitate the coordination of professionals of the hospital sector both inside and outside the institutions, to improve the quality and the safety of the operations, and to optimize the use of resources [29].

The objective of our research topic is to use the process approach to evolve according to the developments of the Organization, by introducing this approach in all stages of the development of this system, in order to achieve the ultimate objective of a 'Good' change or of continuous improvement [29]. This is the reason why this work presents a comparison between the information systems (IS) of the enterprises of production of the goods and those of hospital facilities (HIS), in order to specify the perimeter of our study, while determining and defining the process of each of the two, in order to highlight the differences and similarities between the IS and the HIS, and in order to elaborate an analysis SWOT for both system.

II. IS AND HIS

An Information system is an organized whole of resources, which can be material people, data, activities or resources. These resources interact to process information and disseminate it appropriately according to the objectives of an organization [26].

The Information system builds around process “trade” and its interactions, and not simply around databases or of computer software. The Information system must carry out the alignment of the business strategy by a specific management.

The Hospital Information system is inserted in the “hospital” in perpetual evolution; it is able, according to rules and procedures preset, to gather data, to evaluate them, to treat them by computer tools or organizational, to distribute information containing a strong added value to all the internal or external partners of the establishment, collaborating in a common work directed towards a specific goal, namely the assumption of responsibility of a patient and the re-establishment of this one[10].

For a HIS, medical information is more and more a major importance in a world where the increase in population imposes the existence of an information system performing [20]. The technological potential of computer technology in the field of health are not any more to show in the world of today. They considerably revolutionized the information management on the level of the sanitary institutions; they can make it possible to list all the activities with the ready details within a given healthcare institution.

The next parts constitute a comparison between IS and the HIS, according to several sights:

- Initially we will reveal the differences and the characteristics in each system, according to the literature;
- In second place we will present our comparison at the macroscopic level, using the two cartographies which we carried out;
- Then we present the characteristics of the two systems for our Moroccan case;
- Finally our synthesis will be based on analysis SWOT for the two systems IS and HIS.

A. *Differences between the two types of organization, according to the literature*

Information is at the center of all things at the dawn of the 21st century: development from multiple communication technologies to treat the right information at the right time to the right audience. The industrial field benefited largely from this tremendous progress through scientific methods of operational research and computer engineering, thus constituting the vast field of industrial engineering.

However this progress only benefit than sporadically the organizations from the public domain, generally less opened to new technologies. The hospital systems in particular are no exception to this observation. The field of the public health is a priority in most industrialized countries: the access to the care is a right which concerns us all and which represents without surprised a significant portion of the GDP (Gross domestic product) of the majority of these countries.

During these twenty last years, the hospitals knew a big change: confronted with an increasingly hard socio-economic context, those must yield with new rules of management in

order to minimize the costs generated while preserving a certain quality of service.

The object of the scientific studies of these twenty last years [8] is to bring to the hospital systems significant profits in terms of effectiveness and productivity by the implementation of more efficient organizations, while ensuring improvement of the quality of the care. The application of scientific methods resulting from the field of the industrial engineering constitutes an excellent approach to achieve this goal.

This approach is however full of pitfalls, because if industrial field and hospital are similar on many points, the latter differ on many crucial elements: we are not talking about products and machines, but about patients and doctors.

The difficulties related to the application of methods resulting from the field of the industrial engineering to the hospital medium are at several levels:

- The analysis of a hospital system is strongly related to the observation and the modeling of flow of patients, and not of products: it is difficult to predict the course of a patient within a hospital system because it depends on multiple factor such as its pathology or its mode of assumption of responsibility.
- The activity of hospital staff is very diversified and shown a high capacity of adaptation to the request: the urgency is a recurring concept in the beginning of the majority of the problems of organization. Lastly, the hospital environment is highly stochastic, making difficult the planning of resources.
- A hospital consists of a multitude of subsystems, generally partitioned and functioning in a competing way. Each one of its services has a single organization resting on strong emotional ties, putting forward the concept of social network.

The methodology making it possible to conduct a study within a hospital is crucial: the cultural differences between the fields medical and industrial imply the implementation of work methods adopted for the analysis, the modeling and the presentation of results.

Within the framework of a case study in BAMAKO, Mr. THERA [20] found that there was a certain diversity of applications HIS in health facilities. Nevertheless all these applications except one had a good functional coverage and were adapted to the needs. But it should be noted that this variety of applications within the same system of health can be a handicap when it comes to coordinate all the information of all health facilities, because of the difficulties of interoperability.

Many hospitals undergo an informatics duality in which so-called administrative computing (stays billing, payroll, and economic management) is separated from the so-called medical informatics [25].

Of another dimensioned, it is about a current phenomenon in the computing projects, and particularly when they touch

the medium of Health. The resistance to change result by a behavior of immobility towards the project suggested and this for to reach a statu or even a recoil of the Direction on the project For a hospital, healthcare personnel often see a dim view of the implementation of a new HIS within their institution. The most frequently cited causes are [9]:

- To learn how to handle a new HIS is chronophage;
- Their metier must be centered on the care of the Patient and not on data processing;
- There is already a HIS in place and that took time to tame it;
- There is no HIS in place and the hospital works “very well” with “paper” (ordinances of the Doctors, transmissions of the nurses...).

According to Morley, for a project of the information system whatever the type of organization, there exist many typologies of the risk factors. We will quote here some risk factors [4]:

- Size of the project: a great project means a range wide covered field which imposes a division of the labour between a large number of people; in the absence of device imposing a synthesis, there is loss of the control of the process ;
- The degree of integration: this factor measures the degree of dependence and autonomy of the future system; the flows many and varied, between the future subsystem and the existing system, make more difficult the identification of the impacts of the choices of design;
- The organizational configuration: it corresponds to the extent of the company touched by the project; the risk comes from the heaviness of the procedures of decision when several entities are stakeholders of the project; may also be added potential grounds of conflict which feed a political process blocking decision makings;
- the change aimed by the project: that means that the existing organization systems cannot be taken as stable reference and that the effort of innovation will be important; the abandonment of the status quo creates an instability which supports the psychological process; the risks of rejection or bad definition of the future system are high;
- the technical difficulty: it corresponds to technological novelty or a technique difficulty coming from the constraints imposed on the project; the risk is that of the absence of necessary technical skills which penalizes the production; the majority of the failures do not have a cause related to this factor although often quoted like such;
- the instability of the project team poses the problem of transfer of knowledge: the originators garner implicit knowledge on IS and the organization up that models formalized - when they exist, which is not often the case they are not always enough to transmit; the mistakes in interpretation can have consequences on the deadlines and the coherence of the design.

According to Fernandez and Houy, the information mobilized in the HIS have the particularity of being produced, seized and bound for different actors, each one custodian of a single know-how. Resulting and related to medical protocols and of coordination of the changing care, this information is subjected to recurrent transformations of form, nature and treatment. The information embarked in the HIS is thus characterized by a requirement of permanent scalability [32].

The success of establishment of an information system rests on two axes according to Gagnon and Nollet [33]; a technical axis based on the development of the tools of design and a social axis referring to the importance of the user and its relationship with the designer. According to Beaudouin [24], the leading causes of the failure of the information systems are:

- the requirements in information were badly evaluated, badly described, when they were not quite simply forgotten;
- the users were kept away from the project of change;
- the administrative procedures accompanying the change are non-existent or inadequate;
- the formation is incomplete as much for the staff of operation that of management; the modifications and adjustments with the roles and responsibilities in the new context are not carried out.

From a human point of view, DUCQ [34] considers that a medical institution is a particular service firm but one of these characteristics is the customer whom it must satisfy: the patient. According to the standard ISO 9000 [15], a customer is an organization or a person which receives a good or service. In fact, in medical environment, the customer will be at the same time the object and the recipient of an abundant service by many professionals who directly affecting his physical status and/or mental. Indeed, as of its assumption of responsibility and to its exit, from many trades will organize them-selves and interact to achieve the mission of the hospital. This is to ensure the patient safety and quality of care related to any medical act. These actions and interactions between patient and professionals interacting with other professionals go from the administrative treatment of the patient at the time of his entry to the hospital (constitution of its file), to radiology passing by pharmacy or even the surgery. It is in this synergy, that asserts itself the complex sociotechnic¹ character health care system.

Returning to the industrial world, the concept of time is one of the difficulties related to the relation between the world of management and the industrial world. Even if the commercial times are short, they will be all the same a minimum of several hours. In the factory, the time to take into

¹Complex Sociotechnic System (CSS) is a system where the role of the Man, seen like one of the components of the total system, becomes preponderant. Such a system is: “a composite whole of staffs, organized hardware and software so that their interworking allows, in a given environment, for fulfill the missions for which it was conceived”

account is much shorter! The exploitation of the industrial tools supposes reactivity without delay and the decisions, even in the event of risk, must be able to be taken within very short times. The software solution must thus be able to deal with information “continuous” and to propagate in real time the events which require an intervention [7].

In the current professional environment, the companies must answer promptly at the requests of the market. It is fundamental to anticipate the request for a type and a quality of product and to invest consequently in the research and the development upstream in order to satisfy the request in wanted times, it is the same case for the hospitals but the difference resides in the human factor[7].

B. Definition of process for two types of organization

Because the IS is a tool which must describe reality [30] of the organization, and according to a macroscopic²sight of the two types of organization, we chose to chart the processes using the various studies found in the literature for the companies of production and the hospital institutions, and that while basing ourselves on the process approach.

One of the requirements of the standard ISO 9001 [16] is thus to present the activities in the form of process, and not according to a functional flow chart, as the sign of a control to a total level of the whole of the activities: “One of the advantages of the process approach is the permanent control that it allows on the relations between the processes within the system of process, thus than on their combinations and interactions” [16] Thus the diffusion of the process approach led to integrate the concept of process in the definition of an information system.

The process term is used in various fields of the individual or collective human activity. Within the framework of an Organization, process metier and process of information system are two facets of the same reality whereas the informatics processes are of a nature and a different granularity [35].

We distinguish three types of process [19]:

- Central processes also called realization process: take part directly in the realization of the product, since its design until its provision setting near the customer.
- Management processes: represent the piloting of the actions, change, the conduct of the projects; they produce information, projections, necessary to the analyses allowing to lead the organization.
- Support processes: comes just as the name suggests in support of the production function and central processes, it is for example the logistics, information technology, maintenance of equipment.

²the macroscopic level indicates the higher level of observation, at the macroscopic level, the system is apprehended in its globality, the whole of the recipients form a whole, similarly than whole of human or material resources, the activity is also strongly aggregate

The cartography of the processes of a company or an organization is a graphic way to restore the identification of the processes and their interaction [11].

It is to be recalled that besides the prospect for improvement of the overall operation, a “macroscopic” cartography of the processes brings two important benefits[6]:

- It associates the project with the future users, which causes to valorize them and to imply them in the future approach of “management of the change”
- It makes it possible to better apprehend the extent of the functional perimeter and thus gets invaluable elements for the framing of the total workload of the project.

According to our study of a hospital institution (University Hospital Centre) and our previous studies of industries of production, and using some references on the cartography of the processes of the organizations [1], [5], [11] and [28], we have could carry out two cartographies, one to present the processes of a company of production and the other to present the processes of a hospital institution.

a. Cartography of a production company

As it is already mentioned, our cartography of the processes is fragmented according to three types of process, like it is clear in the following figure:

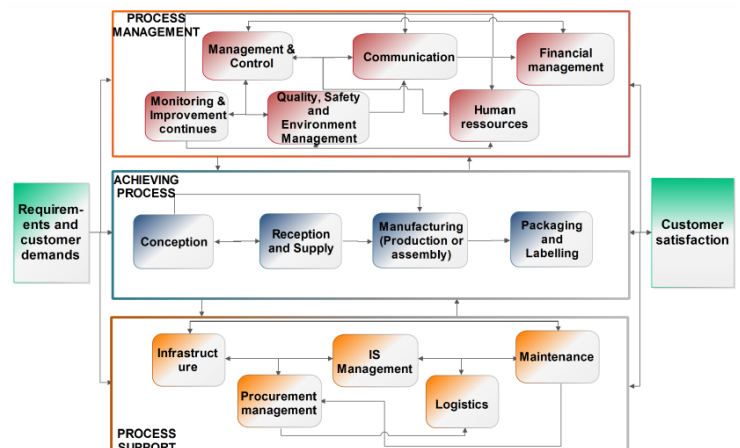


Fig.1.Cartography of the processes of a production company (PC);

The processes are defined as follows:

Management: They understand the determination of the policy, the deployment of the objectives in the company, the allocation of resources. They ensure the coherence of the processes of realization and support. They include the measurement and the monitoring of the process system and the analysis of the results for the continuous improvement.

Realization: They contribute directly to the realization of the product, of the detection of the customer requirement to his satisfaction. They gather the linked activities with the cycle of realization of the product. Within the framework of this document, four processes of realization are identified: design, reception, manufacturing and conditioning.

Support: They are essential for the functioning of the whole of the processes by providing them with the necessary help. They include activities related to the: IS management, logistics, infrastructure, procurement management and maintenance.

For the interface of the processes or the interactions between the latter, we find several definitions of this word, they have in general as a common point to refer to the informatics world, we can quote some of them[19]:

- “real or virtual zone which separates two elements”
- “together of standards and rules to respect to ensure the information exchange”
- “thing allowing the junction between two elements so that they can communicate”

The concept of information exchange, communication, and then this “thing” which perhaps of the matter, of competences, show us well that there is interdependence between several elements or several services.

For the cartography presented above, we have extract the number of interaction for each process, presented in the following table under two column, the first indicates the number of entries and the second the outputs number, table I:

Table I
Interaction enters the processes of each classification (PC);

Classification of process	Process	Number of entries	Number of outputs
MANAGEMENT PROCESSES	Management & Control	5	5
	Monitoring & Improvement continues	1	5
	Quality, Safety and Environment Management	2	2
	Communication	3	2
	Human resources	3	1
	Financial management	2	1
METIER PROCESSES	Conception	1	2
	Reception and Supply	1	1
	Manufacturing (Production or assembly)	2	1
	Packaging and Labeling	1	-
SUPPORT PROCESSES	Infrastructure	2	2
	Procurement management	2	2
	IS Management	4	4
	Logistics	2	1
	Maintenance	2	3
Total Number	15	33	32

b. Cartography of a hospital institution

In the case of a hospital institution, as for the previous case, our mapping is distributed on 3 types of processes:

Management processes: as for goods-producing companies, hospitals have processes designed to maintain the proper functioning of the process of realization and support, they have for objective to ensure continuous improvement of the activities of the establishment.

Realization process: at the hospital a production of the care, the benefit of patient, of the user, of the customer, is the heart of the trade.

Support process: at the hospital the processes supports are the activities of: transportation, laundry, restoration, maintenance of equipment, for example. These are processes whose importance continues to grow through their contribution to the competitiveness.

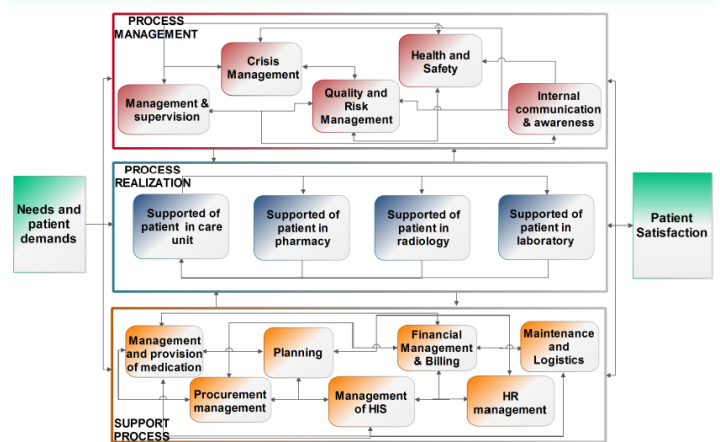


Fig.2.Cartography of the processes of a hospital institution (HI);

We present the interfaces between the processes for the hospital institution, in the same manner as for the companies of production, in the form of table made up of 4 columns, as follows:

Table II
Interaction enters the processes of a hospital Institution (HI);

Classification of process	Process	Number of entries	Number of outputs
MANAGEMENT PROCESSES	Management and supervision	3	4
	Crisis Management	3	2
	Quality and Risk Management	4	3
	Hygiene & Safety	3	2
	Internal communication & awareness	1	3
METIER PROCESSES	Support of patient in care unit	3	3

	Support of patient in pharmacy	1	1
	Support of patient in radiology	1	1
	Support of patient in laboratory	1	1
SUPPORT PROCESSES METIER PROCESSES	Management and provision of medication	4	4
	Procurement management	3	3
	Planning	3	3
	Management of HIS	6	6
	Financial Management & Billing	4	4
	HR management	2	2
	Maintenance & Logistics	2	2
Total Number	16	44	44

c. Comparison enters the two cartographies

According to a macroscopic sight, we notice that there is no common point between the processes of the 2 types of organizations, except for the general distribution of the processes (management, realization and support), and also for with dimensions the patient/customer.

We observe as well as for the case of the production company one has the processes RH and finances among the processes management, and for the hospital institution these 2 processes belong to the process support what marks the difference; it is of mainly with the nature of the branch of industry, since the company of production always seeks to increase its profile, on the other hand the hospital institution its first concern is the assumption of responsibility of the patient this is why we have the processes RH and financier which come to the support from the main activity.

For the difference enter the processes of realization, for the two cases, affects the main activities of the Organization, which is obvious, sight the difference of the activity sector. For example for the hospital institution, the human and technical risks: (security, data confidentiality) increase with the number of sites concerned and must be the object of a very detailed attention [25].

Let us not forget the interactions between the processes which draw the attention of any observer, for the hospital institution we notice that the processes are interacted more than for the case of the company of production seen the number of the entries and the outputs of the processes, which increases the complexity of the HIS. According to Degoulet

the horizontal approach consists in individualizing the processes having to be the object of a computerization and to "equip" these processes in computerized components. If the number n' of processes to computerize is low ($n' \ll n$), then the number of interfaces to achieve remains controllable [25].

The complexity of the hospital system is due to the structure of the process and the number of entities which interact simultaneously autonomous or concerted manner on the stream, thereby increasing the complexity of the HIS. Also any modelling of a hospital information system is based primarily on the description and or the modeling of the real system processes, which is the case for production companies, but the difference focuses on the rate of complexity.

C. Peculiarities of Moroccan case

The informatics irrigates today the whole of the processes trades of the organizations. A rupture of its services can have serious consequences in terms of production loss. It can generate problems with the suppliers for example. In case of outsourcing of production, key information have to be transmitted. Guarantee the reliability of computer services in order to allow its continuity is therefore essential. Morocco is concerned rightly, on the one hand, by what the services, increasingly computerized, represent approximately 70% of the GDP and on the other hand it has developed an offshore industry that today weighs more than a billion dirhams [3].

According to the barometer [14] which aims at establishing a reference frame allowing a continuous analysis of the evolution of the trends and use of IS. A survey was conducted between on September 13th and on October 24th, 2012. The latter presented the two following diagrams:

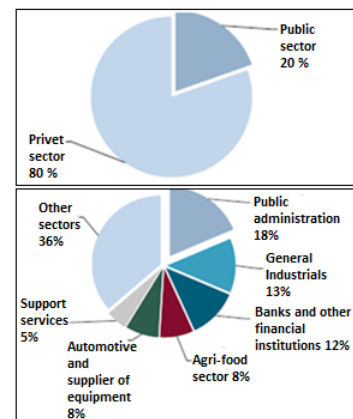


Fig.3.Public-private distribution & sectoral distribution [14];

According to the first diagram, we can observe that only 20% of the public sector use IS, whereas the 80% remainders belong to the private sector, which is confirmed on the 2nd graph, this last shows us that only 18% of sectoral distribution belongs to the public administrations, and the 2% remainders return to industries public. Knowing that public establishments of health are part of 20% using an IS. Beyond we can conclude that Moroccan private enterprises are more interested by the use of the IS, and the evolution of Information

technology use, that the public corporations (which contain the health care institutions). This is probably due to investment (expenditure level) in terms of the IS [14].

Knowing that the introduction of any change poses a certain number of problems and resistance at various levels. In the particular field of IS in health the problems of introduction, although being common to all the countries, seem to have a peculiarity in the African context. Indeed, the African hospitals differ under several angles relating with the context cultural, political, organizational and structural of the hospital structures. The management of these aspects constitutes obviously an additional challenge facing the implementation of the information systems [6] for example of some experiments of implementation of the HIS in Morocco:

- In May 2011, it was the launching of the implementation of a HIS in UHC Mohammed VI of Marrakech [2]. A few difficulties met were amongst other the reluctance on the part of the medical and paramedical staff [2].
- In the case of the hospital Cheikh Zaid, the existing HIS is a system made up of multiple applications, resulting from the internal and external developments specific, dedicated to well limited fields. On the basis of these limit, the strategic pole of the hospital decided to migrate towards a total solution and credits [13].

Finally we can conclude that production companies deploys solutions (they are based on reference frames which help the maintains of the solution, for example COBIT and ITIL) very in advance compared to the case of the hospitals (the companies of production have solutions quite solid and adapted compared to the hospital sector), in more according to our study of an Moroccan university hospital center, and our prior studies, the latter are opposite a problem of solution HIS not adapted to the volume of the establishment nor to the Moroccan context (financial coverage RAMED, languages used, question of volume and characteristic of the Moroccan healthcare system).

III. SWOT ANALYSIS

In this phase we will present using analysis SWOT, the inventory of fixtures of both IS treated throughout paper, with

an aim of gathering all the points, for each of the systems in a matrix formed of four lockers.

SWOT Method [12] is diagnostic tool of a situation, used at the beginning in the sector of the economy to study the position of a company in its medium, to allow him an optimal development. The principle is to elucidate the positive and negative points of this company by proposing its forces and its weaknesses from an internal point of view, and opportunities and threats coming from outside. The essential point and to position this analysis compared to problems well defined, precise. It is not a question of enumerate in an exhaustive way all the points characterizing the situation, but to summarize the most essential. This method examines the situation of an entity according to two axes and four dimensions [21] & [22]:

- On the one hand, it analyzes: the entity internal situation while underlining particularly its :
 - Strengths: list the most effective aspects of the system, what works well, what stands out competitors, and this on what there are convictions.
 - Weaknesses: described the aspects of the system, which put it in danger, which does not make proud, which harms the results, and what prevent from improving.
- On the other hand, it analyses: its external environment in order to determine the position of the entity and its strategic options and this in terms of:
 - Opportunities: described the external factors with the system which can help to improve it, which can be gained, which can arrive of better, and what can dope the results.
 - Threats: clarify the external factors which amplify the harmful effects of the internal weaknesses of the system, which must be avoided, which can arrive of worse, and what can harm the results.

Our synthetic Analysis, by means of method SWOT touches all the stages of a project of IS oriented process, for the two types of organization, dice the stage of planning until the implementation, it is noted that the analysis is not exhaustive, two matrices SWOT are presented in the following table (N°3):

Table III
SWOT analysis for the two information systems (IS and HIS);

SWOT Matrix No. 1	
HIS / Case of a hospital institution	Strengths
	<ul style="list-style-type: none"> - Better adaptation of the software to the request as of users. - The Application or L solution can be generalized for several establishments. - Allows to make a total follow-up of the process of care by inter-connecting the units of care and the stations of secretariat. - Coherent system in terms of integration. - Optimization of the resources. - Traceability of the acts. - Ease of sharing knowledge between actors. - Horizontal and agile system. - Optimization and harmonization of the processes. - Optimization of the interfaces - Sharing knowledge and productive discussion. - An HIS based process is evolutionary. - Folder single patient.
	Weaknesses
	<ul style="list-style-type: none"> - The system generates a large cost of installation (must make communicate between them each process present). - Need for development of specific interfaces. - Required of a continuous and immediate maintenance in the event of breakdown (all the organization which is concerned). - Users need simplicity and effectiveness in research for information and the use of the system considering the context of the establishment. - Users kept away from the project of change, considering the lack of their technical skills. - Incomplete formation. - Difficulty in identifying information needs. - Problem of informatics duality (informatics administrative is separated from the medical informatics) - Resistance to change at the time of the establishment or the improvement of the system. - Technical difficulty of the HIS and a lack of technical skills.
	Opportunities
	<ul style="list-style-type: none"> - Definition of need fast compared to the evolution for the organization. - Innovation and technological survey. - HIS based process must describe the reality of the organization. - Integration and maintenance costs reduced.
	Threats
	<ul style="list-style-type: none"> - Cultural and organizational context is complex. - Possibility of redundancy of information. - Escape of confidential information related to the patient. - Required implication of medical staff and others, and support from direction. - Lack of coordination of the evaluation of IS can involve confusion for the user. - Dependences of the operations carried out in the system, to the human factor. - A hospital system presents a multiplicity of interaction between its activities. - Investment depends on the state. - Absence of competitiveness against the other medical institutions. - Absence of charter related, to the management of hospitals and the use of the HIS. - Field less adapted to the evolutions of the scientific methods related to the industrial field. - Connection of the system to a context difficult to predict, which is the patient flow. - Activities of staff very diversified. - The hospital is a multiplicity of under functioning system in a competing way. - The hospital is a stochastic environment. - HIS presenting of the difficulties of interworking. - At the time of a HIS project, one is likely to lose the control of the processes. - For the organizational configuration, a sluggishness of decision procedures (considering the volume of the establishment and the fascinating number of stakeholders). - Scalability permanent of information (considering its passage by several professions). - Relation of the establishment with the editor of the solution (standard of contract).

SWOT Matrix No. 2	
<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> - Better adaptation of the software to the request of users. - Traceability of the activities. - Coherent system in terms of integrations. - Ease of sharing knowledge between actors - System horizontal and nimble. - Coherence and homogeneity of information. - The culture of the company promotes the IS operating flexibility and adaptation to change. - Allows sharing of knowledge and productive discussion. - An IS, oriented process is evolutionary. - Best mastery of operation of processes. - A general system having standard and known processes (already well identified) - Own investment, determined by and dependent on, the company. - An IS intended for the companies of production is with mastered great part, because it depends on the product path. 	<ul style="list-style-type: none"> - The system generates a large installation cost, we must make communicate between each of its processes. - Required of a continuous and immediate maintenance (in the event of breakdown, all the organization which is concerned). - Functional perimeter sometimes too broad and losses of company specificity. - Users kept away from the changes (considering the load of time). - Incomplete formation. - Resistance to change at the time of an improvement of the system.
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> - Definition of need fast compared to the evolution for the company. - Innovation and technological survey. - A process-oriented system should describe the reality of the organization. - Use of the reference frames intended for the company of production and based on the approach process. - Will of the use of new Information and communication technology (in order to increase competitiveness vis-a-vis the companies). - Cost less of integrity and maintenance. - System profiting from scientific progress of methods (operations research, computer engineering and field of industrial engineering) 	<ul style="list-style-type: none"> - Need for the involvement of staff and support from direction. - Espionage industrial: flights of information and leaks of knowing and competences. - Possibility of duplication of information. - Lack of coordination of the evaluation of IS can involve confusion for the user. - Connection of the operations carried out in the system with the notion of time (the solution must deal with information and propagate in real time the events requiring an interaction). - At the time of a project of IS, one is likely to lose the control of the processes. - Nature of the relation of the company with the editor of the solution.

IS/ Case of a production company

This analysis enabled us to deduct two things different, first is (compared to the internal analysis) that the process approach presents more advantages than of disadvantages for two organizations, presented in matrix under terms of force and weaknesses, which mean that it has benefits for any type of organization, it helps to decrease the complexity of the latter, by treating each one of its processes and their interactions. For our study it is clear according to the literature, the cartographies and SWOT method that the hospital or the hospital institution is a very complex cultural and organizational context, then the application of the process approach for this kind of organization, will allow better manage the hospital processes, which decreases at the same time the degree of complexity of this last.

The second point that we can notice according to the external analysis, it that is enabled us to reveal a large number of threats could impact the progress of a project HIS, because the hospital institution present more threats and less opportunities, that the companies of productions, considering several factors.

For our study, we can then say that the hospital institutions expose our big challenge, our objective will be to work on the adaptation of the process approach, to hospital field (by taking of account the human factor, patient path and the Moroccan context).

IV. CONCLUSION

This paper enabled us to arrive at several conclusions; most important are the following ones:

- The hospital institution is a cultural and organizational context very complex.
- The process approach has more advantages than of disadvantages for the hospital institutions and the companies of productions.
- The hospital institutions expose our big challenge.
- Our objective will be to work on the adaptation of the process approach, to hospital field.

In spite of these difficulties, the installation of a HIS seems from now on a need and must profit from a broad consensus on behalf of the various actors of the healthcare system and particularly of the decision makers.

As it is already mentioned, Certain process known as process of realization are directly linked to the heart of the business of the company (medical assumption of responsibility of the patients in a hospital). Other processes known as process of supports have the aim of facilitating the processes of realization (supply, accounting, human stock management, etc). Lastly, the processes of management are related to the piloting of the company (evaluation, assistance with research).

The effective realization of a process (the "how") requires that a suitable organization is installation. A good analysis of the objectives and processes can consequently call into question the existing medical and administrative structures. In a complex system, it is frequent that certain structures evolve for their own account while at the same time their finality is distant or without direct relationship

with the total purpose of the system (exaggerated place, for example, certain logistic services) or than contrary to the essential structures are tardily installation (insufficiency, for example, of the structures of piloting of the information system). The regrouping of these three main categories of process makes it possible to define three estates or subsystems of information of a SIH: the clinical information system, the logistic information system and the system of piloting [25].

Lastly, after having noted that the HIS presents more of negative points than the IS of a company of production, we will conclude our synthesis by some factors being able to help with the improvement of the state of HIS. Firstly, it is to be recalled that the success of an HIS is subjected to several conditions. The most important include [25]:

- The implementation of a data-processing governance adapted to the complexity of the tasks of computerization;
- A plan of urbanization of the information system of the hospital starting from a fine analysis of the processes trades;
- A computerization by progressive stages with realistic calendars of implementation and a strategy of control of the change;
- An estimate resources required to deployment and operation of the hospital information system;
- A good comprehension of the sociology of the organizations of the hospital and a good communication, intern between the various actors of the hospital and external with its environment;
- An analysis of the risks and a precise plan of continuity of service.

Secondly, it should be noted that the conduct of the change gathers all the approaches aiming at facilitating the transition from an institution, from a state A to a state B of its information system. The following elements are regarded as factors supporting the success of a HIS [25]:

- The installation of a structure of E-Governance visible;
- The participation of the users from the stage of selection of an offer HIS;
- The individualization of "leaders of opinion" being able to carry the project;
- A presentation objectifies of expected benefits and difficulties;
- The constitution of mixed teams "engineers – professionals of the medical computing – users";
- A formation adapted to each profession with individualization in each structure of the hospital of "super-users" better trained and being able to be a relay near their colleagues;
- A permanent evaluation of the satisfaction of the users;
- A good reactivity of the IT teams to answer at the requests of the users and to repair broken down equipment.

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