

New Technologies and their provisions in the workmanship of service and the risk management: Opportunity or border?

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Abstract

The world of transdisciplinarity, the advent of the science of danger and the glance on a situation engenders new skills today to take care of the complexity of that situation. Today, the control of risks added to safety functioning of the equipment is not any more reduced to a simple action plan of maintenance spread out over duration of exploitation.

Besides, the use of e management implies simultaneous techniques of mechanical engineering, electronics, automatism, the micro computing and the system analysis with the aim of the conception and optimization of products, equipments and processes. New Technologies of Information and Communication establish a major tool to organize safety, security and accompany the management of risks inherent to safety equipment.

The requirements of performance of these professions are often at the cross road of the stakes that the company meets within the framework of its adaptation to the system of e management in its environment.

Well organized, the operation application in developing country of the e-management may provide an opportunity of a healthy and effective management or constrains when it is under tightened by no economic anticipation

Keywords: Risks, danger, standards, management, E management, NTIC

1 Introduction

Our reflection focuses on the problem of the capacity of public and private institutions of countries in the process of development, to answer a technical and managerial demand, in the globalization context and environmental requirements.

In Algeria, We are concerned with understanding how we can join, the new tendency of the management, the e management generally and the risk management in particular, with regard to the following slogan: "How to cope with: better, faster, cheaper and at the same time more risky?"

We are also concerned with how to take up the challenges of the 3rd millennium, to face globalization with the opening of the markets, international competitiveness, the profitability computer-integrated manufacturing and financier, and the more and more marked rejection of the social acceptability of risk?

We are looking for hhow to reconcile complexity and interdisciplinary which involve technological, statutory, human, organizational, cultural and societal dimensions.

The question is how to do with sustainable development requirements, the various actors of economy and innovation, and the keystones of the control of risks today?

To prepare a society and its various constituents, it will be a question of identifying and mastering the logics and the contributions of effective tools, resulting respectively as well from disciplines of the exact sciences as those of the human ones. In a context of sustainable development, the stakes in a management system and integrated management: Safety Security Quality Health Environment would engage the irreversible process of a crossed step leaning on the contribution of the new technologies of information and communication in the normative frame of management and production.

According to the standard EN 13306 (June, 2001), Maintenance, is defined as being "all the technical, administrative measures and the management, having for objective to maintain a well being, or to restore it in a state where it is capable of performing its function. Reliability, availability, maintainability safety of functioning of equipment or of a service, represent the link with the control of risks which supports out a functioning in the normative frame of a world more and more computerized, automatized prone to High Tech innovations.

Nowadays Maintenance and Risks are closely connected to any sector of activities and we would not know how to reduce them in plans of action spread out over the duration of exploitation of an installation. During implementation of maintenance operations, the operators are confronted to the risks: Weather corrective ones (localization, diagnosis, repair and repair) or preventive aspects (revision and operations of surveillance). Besides, the new technologies became assets of the industrial systems which witness the emergence of standards of methods and conceptions of news systems. So, e management probes on the Information Technology tools which allow remembering the events bound to the maintenance planned and arising from equipment or an installation. It allows the management of operational aspects of performance, test, manufacturing, cost and planning of periods as well as planning left outs. There are so many parameters taken care of in planning technical and logistic aspects. It represents a genuine revolution in the domain. The data bases containing information on the events, the software to seize, modify or eliminate, consult the information of an event remembered in the data base. It also contains elaboration of reports of publishing for an intervention in real time or a remote technical support.

It establishes a set of measures to be upstream and downstream taken and approval of any organization.

2 Statement of the research question

The mode of management associated with the integration of the New Information Technologies and the Communication (NTIC), of which Internet, to all the administrative processes of a company or an organization, to improve its productivity and its efficiency raises the problem of adaptation of the entire staff to this situation. The use of the NTIC in the domain of the management generally and maintenance in particular lead to the creation of a new reality called e-management. Described as the association of the multimedia (sound, embellished with images, text) and the Internet (broadcasting) on line interactivity, it appears too many as the second breath of the market of these technologies since the IT bang of the 70s.

The connection between real and virtual is made through platforms. These are tools of distribution and management of knowledge, associating contents of procedures and controls through communication, tools of training and evaluation. Today, human resources represent the main wealth of a country. It is also the major competitive trump card of a company; it constitutes the best guarantee today: "You earn what you learn ". Now, technologies progress continually, professions evolve, organization changes, methods of management are transformed. But the available budgets and especially the time likely and necessary to spare are not scheduled ahead. With the advent of the NTIC, we have to, right now, "think of fast and effective learning ", with a minimum of problems of organization, and especially waste of time, and adapted logistics. E management is the solution because it is about a fast evolution of the technologies for learning, made possible by the global development of the Internet. That offers immense assets to the considerable economy of time and mobility.

It is important to underline that e management is a revolutionary domain, a radical change in the field of the learning and the technical, administrative and organizational management. The instructions which it offers on-line can be supplied whenever and wherever by a wide range of solutions, technical advice such as expert's newsgroups, virtual lessons "on line ", Video, audio and Web chat, simulations etc.

Consequently, a new office of manager in the time of Internet emerges from it. This one is transformed in the contents and practices by the development of the NTIC and identifies the new control level of shares which a manager handles to improve the performance and the motivation of his teams. The NTIC, the new control level of action of the function manager, the impact of the NTIC on the various engines of the performance of a company, the NTIC springs from conversion of organizations represent the indicators of progress today. Then how the NTIC upset the managerial setting?

Is it necessary to rethink the management and the managers from NTIC point view?

The manager, the reformer of organizations is in the heart of the debate: new requirements are born because in an uncertain environment, the employee is more and more assailed by multiple challenges:

- Always more information to be treated
- Always more productivity to be demonstrated
- Always more required ability to react?
- Always less time

To the traditional tasks connected to the post of individual work are added responsibilities increased towards the collective functioning of the organization:

- Produce more information
- Look for more information
- Participate in projects and in actions
- Pass on his knowledge
- Enrich his knowledge.

In answer to these needs, technologies and behavior stemming from Web comes to fluidity the cogs of the organization for the one who knows them appropriate and spread them towards employees. Successful solutions allow the manager to revitalize the organization of his company and set up a real policy of E-Management, notably by insuring the availability of:

- Intranet: to facilitate the internal communication and the sharing of information
- Knowledge Management: to capitalize the knowledge and the know-how of each of the actors in the company.
- E-learning: to give to each one the possibility of forming and of developing his/her skills at its pace and according to his/her needs.

The question put forward is to know how to integrate all these trump cards and how to transform economic constraints into challenges to remain in the competition for developing countries because what can represent an asset in so called developed countries can quickly be transformed into brake in countries said in the process of development.

3 Factual Contexts

Following the example of other companies in the world, developing countries made a commitment to a socio economic development policy more and more directed to integration of sustainable development as irreversible political choice. The context of globalization and the support in the World Trade Organization for some of them is doubtless a geostrategic choice. It is a question of adapting to an actual care of the current transfers particularly in terms of use of those new technologies of information and communication.

The stakes and the involvements not to say the crossed policies and strategies of development inevitably arranged between the various actors and socio economic operators are the conductive vector of progress and competitiveness today. The competitive logic of the laws of the market between the supply and the demand represents the survival of these countries.

Besides, the research for a compromise between political imperatives and commercial objectives, regarding to performance cost, the acceptance of a level of risk regardless of how small it may be, becomes a rule of management.

So what can be done in Algeria, being aware that the grip of consciousness and culture of the risk is non-existent?

Furthermore, Risk and Danger² concepts are difficult to round up because it is a social representation in which are linked laws of nature, technological constraints, political strategic objectives and in the same time socio economic problems, scientific rationality are determined by a political space.

Consequently, for a modern and societal organization, it would conduct to methodological approach consisting in ranging companies on the same implementation of integrated management system. It may lead to the identification of the real institutional actor's and/or operators of the process of strategies of implementation. It concerns sectors as well as Local Communities, Health and Work Industry as that of education in general.

The main question is treating problems and stakes engaged by identification and involvement of the institutional actors and professionals, the public and private institution, confronting and strengthening scientific, technical experiences during studies of ground in multidisciplinary team. The aim is to adapt a theoretical conceptualization to needs and to national preoccupations. The last major accidents that happened in Algeria (Alger Bab El oued in 2001, Boumerdes in 2003, Skikda in 2004 and 2005) and globalization have created a new context: organized by the legislative device to manage disaster situations, implementation of policy "Hygiene Safety Security Environment HSSE", adaptation to Environment Management system EMS, certification ISO 9000 and following ones, ISO 14000 and the next ones, OHSAS 18000 and the next ones and lately ISO 22000 and ISO 26 000. In this context, elaboration of management system of quality, environment, safety and security concern global coherence of management of the means.

There is a coherence in the system integrated Quality / safety / Environment / Health (Q-S-E-H) because of inductive and additional logic of their conception. Furthermore, those require common bodies improving permanently their performance in quality and environment.

Besides, in continuity and complementarily, Management of HSSE system, part of a system of global management, Health and Safety Security in the Work, aims to ease management of risks associated to company activities. As looking risks is a statutory obligation (environment Code, Employment law), it is necessary to implement tools, methods or steps to analyze, estimate risks and apply measures of prevention or protection adapted to each country.

Consequently, in Algeria, it is recommended to see, an awareness of risk built and developed by cultural risk perception, initiate good practices on the subject and harmonize management policies of maintenance and risks control. The passage from vocabulary to concepts, concepts in science danger to models, transform models in tools, and methods of risk analysis on practice knowledge and control of various types of risks, should

allow us to appropriate technological progress and transform constraints into assets. In any company, questions should be articulated around the following points:

- To Master information

Several years ago, we entered for, large area information, but without managing master streams. That is the reason, it is necessary to have a global approach of the information by consideration of its main system and environmental constituents. It is necessary to define a strategy of information, know how to define priority information to be shared and which process of information to set up: Prioritize information, Think Global and Act by anticipation, Set Up processes of information, and Sell information.

To manage political internal context of the company, we look for organization mode and internal political practices. It shapes broadcasting information. We notice that the political internal context is an element which is rarely taken into account when we wish to improve information circulation.

It is known 4 principal models of distribution of the power in company:

1. Monarchy: a function or an individual checks main parts of information. Very frequent model in small structures or within entities too independent from spirit of group.
2. Federalism: not enough centralization of information. Autonomous management of information by local units. It facilitates exchanges between units and extracts relevant information back to central authority.
3. Feudalism: strong segmentation of information which remains quartered in the perimeter of unity unit and is not taken into account in a central way.
4. Anarchy: each manages in an individualized way its own management and distribution of information. Rather current practice in companies and very fatal because it prevents the sharing of information.

After identified models of information distribution and its political intern context, it will need to develop this model towards the Federal one. This model facilitates communication and exchanges within company and its subsidiaries without denying the specificities of local unit information.

- To Adapt cultural and behavior

Today it isn't so much mass of information that is important, but its circulation and relevance. If certain companies privilege transverse circulation of information, many of them are still very far away. However all of them are conscious of importance of a transverse management of information without having operational method to change the current information system and to adapt behaviors to new context.

- To Develop experts' network

Nowadays, information through files, technical documentations, reference textbooks (reference manual workers) is little shared.

As for any organizational step, it is necessary to begin by identifying in all the main organs of company whose are various actors, relays and information experts.

It is a question of identifying present and optimizing management. It is a question of creating virtual community of interest or practice depending to all key actors of informative network.

So they can exchange on their practices experiments and create recognition of their function and valorized their activities.

4 Management and e management

The notion of management evolved a lot, this word comes from manus: the hand, by Italian manager and English to manage: handle, lead, it's to have well in hand. The management recovers all decisions and acts (technical, economic, financial, sociological, and psychological), used on a productive system according to normative criteria. E management came with a supplementary performance which guaranteed a functioning and a sharing on real-time information. Nowadays, it isn't more about an organization or about a classic management, its concerns, specifies and plans: role and Responsibility of Direction; put in Correspondence to Rules; Exploitation/Maintenance; Preparation for Emergency Situations; Products: packaging / labeling / transport; Projects / Modifications; Environment; Staff Management; Competitive Logic, with other companies; Surveillance and Measure; organized by an adapted policy of communication to external world by rational use and employment of NTIC methods.

That means, developing methodologies allowing companies to set up a structured internal organization and effectively management of person's protection and possessions by adapting itself in requirements of the globalization. Towards the requirements of normative procedures and through their evolutions, we can say that professions gradually change. Just a few years ago, the profiles of uses concerned essentially at first quality or safety without management clearly mentioned. Lately, professions evolved towards coupled skills Quality-safety then Safety-Security - Environment. This evolution is connected to the arrival of known management systems quoted (standards ISO 9000, 14000 1996, repository BS 8800 in 1996 and OHSAS 18001 in 1999 etc.).

In this context, the function of manager goes beyond the traditional conception of management and became inseparable of management of technological risks which requires detailed and general-purpose skills covering technical, organizational and human domains. He has to join control of risks and maintenance, control of risks and productivity, control of risks and competitiveness. He must be capable of assessment on socio-technical systems of production, where an appropriate cultural favorable environment to such coverage is necessary.

The culture of risk, still absent in process development countries, is connected to industrial crop. That situation varies from a country to other (from a continent to other one), but with globalization, we evolve towards normative procedures more and more, in even world international character.

The texts of laws inspired realities of each one are more and more directed to universality. The integration of existing and experiences feedback in world facilitates a step based on generalization of systematic vision and sharing information is not unimportant opportunity.

Consequently, requirements performances of high-level professions are in crossroad of economic challenges company or community, confronted to framework of its adaptation to environment management system and management of safety security and health. The transfers which ensue from it, should be objective of more steady attention, because articulation enters pre-required by industrial professions (sciences for engineer, chemistry of processes, management of production, etc.), and human organizations (management, social human, dynamic organizations of organizations, etc.) and specific knowledge on analysis risks (Cindynics, psychology, ergonomics, laws, etc.) would be answered at request of research for competent and general-purpose frames in field of risks control. These professions should be reflected, based and rethought again.

In this context of pure technical control, it neither was especially a question of making well, straight off, products meeting the needs of customers to there not very demanding nor regards quality. As for security aspect; he recovered from domain of rule and from social partners. The employer had a bond to insure safety security and to protect health of his employees, according to general principles of prevention expressed in work code. Today, besides to answer this statutory requirement, which was recently strengthened by obligation of evaluation of risks, he has to look for workers respect and environment in his global nature.

The concept of sustainable development (Rio in 1992), association of citizen (Johannesburg 2002) in any process of development economic socio, Alert concept (Bone on 2006) changed institutional and operators mentalities.

To estimate risks, to define priorities of share and to operate solutions allowing preventing accidents (to improve return on the company), and use of new technologies of information and communication are registered in a long-term global strategy.

It is a question of refocusing the reflection around human factor because analysis of accidents origin shows that attitude and man behavior are about 75 to 80 % of accidents, against only 20 to 25 % for materials causes. The risks of fall for same level and those connected to manual handling are, to them only, at origin of 56 % of accidents. It is strong or weak link of any channel, on which rests success and survival or disaster and drift: these considerations suppose behavior and skills at people as well on individual plan as collective.

Manager problems

In front of a world in movement (shortening of cycles of innovation, globalization, relocation, management multidisciplinary and scattered by the co-workers, the functioning of companies in network), companies have to learn, to adapt themselves and manager. Reactivity is first needs of companies need. But ability to react is possible only if ground of competition is blank of any manager trap.

- **Collective Intelligence vector of the dynamics of companies:**

It is about actors' dynamics interconnected, grouped included around shared ends leaning on control of new information technologies and communication (NTIC): there is a paradox enters pyramidal and treated on a hierarchical basis organization and informative organization. Today, the perpetuity and the growth of companies pass by overall of two crossed world: That of the system formal pyramidal treated on a hierarchical basis and often divided up, with that one more informal system, more transverse and more opened. We can imagine a company with 2 facets: the first one, it is governed in official environment respecting a certain shape of hierarchical order. A second case, less official and more muddled, which allows revitalizing company by reproduction of internal interconnections and grouping of persons possessing public interests. This one allows certain actors to use innovative tools based on internet protocols to exchange, share and build collectively real added value to company. The legitimacy of manager cannot indeed lean any more on fact that it would be alone to arrange information. On the other hand the e-manager who facilitates accessibility to information with most large number and at right time means that he will have understood interest to work in a bigger transparency towards his co-workers and will benefit from NTIC for a bigger collective efficiency. In this period of transversally and strategic associations, to have a global vision of projects, is fundamental.

At the same time, refusing sharing is only isolating individuals, unit's even departments of companies. The idea that division of information is spring of progress both for the e-manager and for his team must be shared. The NTIC upset the systems of management but everybody has not become aware of it yet. The main function of the e-management will be to facilitate individual and collective share by leaning at most on possibilities that NTIC offers.

- **The control of the maintenance and the New Technologies of Information and Communication: between opportunities and constrains?**

The field of maintenance particularly industrial group includes activities of maintenance, interview and repair which take place in industrial environment. The industrial maintenance has for first vocation to insure good functioning of production tools. This function is an essential link. It evolves continually because it is closely connected to ceaseless technological development, to appearance of new modes of management and to necessity of reducing production costs.

The objective today is not only to repair and to maintain tool of work but also to plan and to avoid any dysfunctions. The activity maintenance staff evolved with function, and their role is to increase more at same time with technological, organizational and relational skills.

In company, function "maintenance" consists less and less often, in reconditioning a working tool but much more to set up dysfunctions and to anticipate them.

We are so spent by a "curative maintenance" in a "preventive maintenance" to become predictive. Plans of shares and interventions are set up in a way of trying to foresee in advance supported by logistics at same moment automated and computerized endowed with successful software in measure to take care including unexpected situations.

The Algerian companies already made a commitment according to size and its financial health of each one, in process of certification ISO 9000, 14000 and OSHAS 18000, but regrettably, ground reality is far from being in produce of 3rd millennium.

The generalization of Internet, intranet tool and data banks it line is more and more present in public and prived companies, banking institutions, university establishments etc., testifies of political and strategic will of Algeria to make a commitment in convoy of developed countries.

Today labor market demand required level by possessing skills transdisciplinary aimed by contents of columns of standards or repository admitted over world. It asked to develop during exercise of a function, technical, legal and relational skills by knowing how to handle IT tool at any level of production or management of stock, management of maintenance, management of human resources etc.

It is also necessary to join a quality approach, to make market studies, to develop wallet customers of the company, to maintain competitive of company on market, to represent it in the external environment and to stimulate sales force by managing relation with customers. It will also be a question for him of insuring the coordination of a program of communication, of managing a product or a mark or still of developing or of strengthening markets abroad.

Indeed on, every skill this above mentioned requires a specialization for profiles of different disciplines, but regrettably we notice today, that managers are anxious to have all these skills, in load (learning by the passage in the professional ground is necessary but it is far from being sufficient (self-important), he can lead to the access to high-level assessment but nobody can replace a formative, evolutionary learning all along the route of the individual responsibility for them to make it on ground, work experience is expression.

Conclusion

We focused our reflection and step on developing an approach by skill which seems to us essential today. Independently of all the difficulties which would raise such a step, we look through this contribution to reconstruct an innovative and dynamic model in learning by adequacy Training) / for Employment Use, for Training) / Skill and for perspectives in the Training) / Research), with a critical glance on contribution of New Technologies of Information and Communication

A criticizes regards in sense, if by moment it is certain means of efficiency that to become a brake in case minimal conditions are not gathered.

Those concerned means of cultural, logistic and human order etc. It is a question of making profitable financial investment, adaptation to new technologies by avoiding becoming simple consumers.

At the same moment, development is confronted to in capacity of independences with regard to suppliers of high technologies, key lies in capacity of companies to combine conditions and to guarantee skills of its frames to take care of economical and social constraints of e management

A revision of our thought, with regard to a formative education with preventive character, should be for us, directed to a reform education system, based on a globalized and systematic vision. That this was centered on the link between prevention of risks, impact of industrial activities on environment and a research for development in a long-lasting processing rack would be of use as flat shape to construction of a progressive alteration.

NTIC generally qualified "to facilitate» on base of software tools, facilitates management and interactions in everyday life, but do not replace work of operator. This facilitation is essential in more and more complex environments, with constraints connected more and more to imperatives of real time, with multidisciplinary and scattered teams. The passage of the profile of the manager of the 80s in 2000 to the e-manager of tomorrow, will not be made but that organization gets organized in network. Essential condition to pass of a company organized into a hierarchy to a company in learning step. The company needs to change and to get organized to allow the conversion of the system of classic management towards a system of participative and transverse management to facilitate the area. And it is only this will of directions to open up the company and to integrate these new managers of knowledge who will allow a symbiosis completed to create and develop of the competitive advantage acceptation and the insertion. Besides, the functioning of the company, the profitability and the performance of companies base on the capacity of the authorities to set up a policy to take care of the technological challenge in a process continue which begins at school, continues through education in the citizenship, strengthens at university, place of the knowledge and innovation, pillar of performance and base on which the foundation of a state rests.

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