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Implementing Information Systems, from utopia to reality

Joys or sadness, productivity or bankruptcy?

In this paper we will try to approach some of the typical problems using the information technologies (IT), we will see some unfortunate cases in the implantation of such and we will try to arrive at the roots of the problems (which usually are in most basic) based on avoiding these technological catastrophes, trying to evaluate a little some concepts and how the information would have to be processed.

The present proliferation of Information Systems (IS) in the industrial and commercial world is a necessity that seems inevitable to approach.

When we think of the future of a company, we can see that the relation between it and the information systems is and will be a big issue.

There are some very well known paradigms, some of them are slogan loved of some companies, and we mention some as an example:

- To greater information better capacity we will have before the competition!
- We help you to use the information that you have and do not use!
- Information is power, to greater information we will have more power!

These currents have untied all a fever of information services that promise to centralize absolutely everything under systems that allow the total control of all the possible and imaginable information (a little exaggeration of mine side is forgivable, considering what IS companies are offering).

There are facts that do not lie, in December of 1998 in England we analyzed the process of implantation of an IS in a great transnational company, this had invested in 1998 enough million dollars in that implantation and still it was left much to do. When we began with the audit of the information, it was possible to be observed like this company it had fallen in one of the previous paradigms and was in a process

never to finish raising data that soon would try to use somehow. They had not stopped to observe that information was most important for its processes and as would have to be used, maintained, stored, etc. On other words the service cycle of the information had not been evaluated either. This case is quite common in the present industry.

Also is well known the case of the North American pharmaceutical company with sales of billions of dollars, that declared bankruptcy after an fault attempt of installation of one of the most current famous IS.

Once in an oil company of more important of world I observed how after a request for a key material in a gas plant, 30 days later the purchase requisition was lost in the levels of approval and security of an IS. The security had made that who it asked for the materials had to do it in a spreadsheet, to be sent by email and soon imported by the system (by somebody with level of authority to do it). Total when something was urgent the responsible needed that "to go to the supermarket " and to buy what required. All off this with more than a year in the implementation process.

Soon I saw the same tendency in another one of top ten oil companies, producing complex interfaces (they would be simple at first) to handle the super complex and super powerful IS.

Smaller scale I have not been invoiced for repair and spares of my car in a workshop because "We are closing the month and the system is not able to work properly".

Another enormous company lost six months of information in the "process of technological update" of its Maintenance Management System (CMMS).

I hope you found sufficient negative examples, in the end we will see how we could try not to fall in those traps of the technology.

The Gurus

Let see what say some gurus of our time, compilation by Norman Eason:

Peter Drucker:
An adequate information system must lead executives and managers to ask the right questions, not just feed them the information they expected that pre-supposes first that they know what information they need.

Data has to be integrated with strategy, it has to test a company's assumptions, and it must challenge a company's current outlook.

The tendency postmortem of the information must change towards future action bases.

Robert S. Kaplan & David P. Norton
If you are going to ask a division or corporation to change its strategy, you had better to change the system of measurement to be consistent with the new strategy.

Implementing a strategy begins with educating those who must execute it.

Ricardo Semler
The technology is transformed overnight, mentality takes generations to alter.

Either you can adopt sophisticated, complex systems to try to manage the complications, or you can simplify everything.

Motivation and feeling of belonging cannot be quantified. But that does not mean that the monetary value attached to the easily measurable items is greater.

Thomas Stwart
Nothing in corporate life is more dangerous than a function looking for a work.

Too much knowledge manage has been an inside job, automating the files. It is hyperlinked, hypersonic librarianship. Too little is about serving customers.

Dr E.M.Goldratt
A measurement not clearly defined is worse than useless. Productivity is the act of bringing a company closer to its goals. Every action that

brings a company closer to its goals is productive.
Every action that does not bring a company closer to its goals is non-productive.
Productivity is meaningless unless you know what your goal is.

Anonymous
Wisdom is the ability to see round the corners.

The Re-engineering and IT Systems

The relation between re-engineering and IT systems that in many cases sounds like direct, it is beginning to be questioned strongly, according to Varun Grover[1], in USA were invested near 900 billion of Dollars in the industry of services (in the last ten years) with a corresponding minimum growth (considered in a 0,7%). Also it esteem which a 70% of the projects of re-engineering fail, their study also shows that the Technical Competition does not seem to mean a strong problem in the implantation of projects of re-engineering. Then a great attention to technology management has a small effect or none in the final results of re-engineering.

This confirms thing that happened in a great study of Reliability Centered Maintenance (implies one re-engineering of the industrial Maintenance) made by a great electric power generation station in USA. Where a big amount of money was invested in the evaluation of information and the search of behavior patterns as well as automation methods. Five years after of much effort and few results, everything was abandoned and they remained with simple and commercial data bases, spreadsheets and word processors, where information was stored that threw the teams knowledge and re-engineering began to give results.

Information Systems

The Bases

If think that an IS would have to help to manage information, then we should start to think about the information, what is this, how can

[1] Varun Grover, From Business Reengineering to Business Process Change Management: A Longitudinal Study of Trends and Practices, IEEE Transactions on Engineering Management, Vol. 46 N0. 1, Feb. 1999

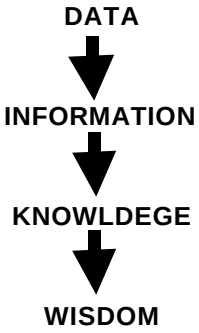
we use it? How must I manage it?, etc.

Well, now we will begin to try to break some paradigms.

Normally we do things right, but are we making the right things?

All IS based on data handling, which is raised, processed, etc.

Everything starts with data. Has one of us thought about data like assets?



Let us see the following diagram:

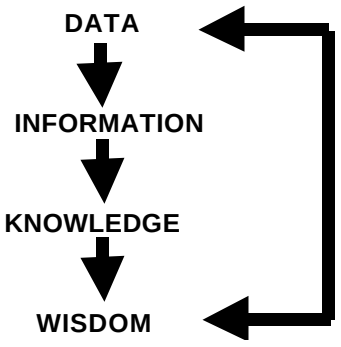
We can see how the data is the base of the knowledge and the wisdom of a company, which as well, are combustible for the productivity.

Now the reflection point comes in the poor attention that we give the data, we take care more in the process about such that in them like so. The result can be fatal, because how all process where the raw material is avoided, the result may be the not wished one.

- If we agree in seeing data like assets, strategies are due to: Acquisition
- Storage
- Processing
- Maintenance
- Etc.

At least some of the previous points is deficient in non-successful fault attempts to implement IS.

Into an organization that improves and learns, the previous diagram would have to become the following one:



This implies that data acquisition and the consequent IS must be handled with wisdom. The learning point is in fact simple, the data management must be done starting off of the concept of data are

valuable assets for the company, as important as turbines, generators, robots, etc, since all the assets of the company will be managed based on the information that we obtain from the data.

Wisdom and IT Department

The knowledge and wisdom of any company are not of course in the people of IT (unless it is an IT company). They are in the people who execute the processes. This sounds evident, but however is the IT people who often coordinates the implantation of IS, who decide how to implant (often dazzled by the technology and not by the necessities of its company), how doing it, where to begin, etc. At the end of the process is the final user, who is trained in the final phase so that the definitive implantation begins, " that will be made in time record ".

The challenge for the IT people is to be closer to the people who do the processes, to involve deeply much more and to work in a synergic way in function of reaching the common objective: **Improving the Company Performance**.

Where this is made is observed a better communion between people in charge of the implantation of these projects, which improves the sense of the ownership, a very valuable ingredient for success.

The paradigm of which the IT department is for doing what it is requested and nothing else is dying against facts. The IT people is very well prepared and must be used in a more proactive way, allowing them "to see" the processes and to leave they working with everyone to improve the whole processes.

Like the medicine and the industrial maintenance have been evolving of the repair to the prevention and eradication of causes. IT people must be generating a better future.

Re-engineering Again

The attainment of successful results of an organization after implanting an IS, will depend to a great extent on how prepared is it for using the system. Once again

the use of complicated systems to handle the complications has generated great problems in the implantation of IS. What I want to transmit is that wisdom applied to the IS will not be enough for a better productivity. Also the operation systems must be challenged trying to simplify, looking for simple processes helped by a system easy to use, offering solutions and not problems.

The IT Companies

In these years the amount of inverted money and to invest in systems of IT, is huge, this has brought to the market many unfair efforts that only look for to taking a great part market. Some companies have forgotten the objective the generation of technologies. They are looking for "jewels in the state-of-the-art" that in fact impress by their Performance, but that do not reflect it increasing the productivity of end user (to analyze the reasons is a serious motive for a book).

Those companies that are close to end user and understand their business, its problems and speak the same language will be the destined ones to win the market. Those that include/understand the companies and make things easier, the answer is there, they only need to look for it.

There are great companies managed without great IS of a quite efficient way and as well companies not so great with complex IS and are less efficient.

The approach towards the final objective of the company client is the one that must prevail.

Recognition

To Norman Eason whose lessons combined to our experiences are shaped in this paper. To all those it with commitment in the continuous improvement as a life way: operators, IT personnel, technical, managers, contractors, etc. with which I have shared and lived these restlessness in diverse industries, cultures and countries.

About the author

MSc. Author Jose Bernardo Durán jduran@ieee.org Tel/fax the 58-416-6742990 International Senior Consultant at The Woodhouse Partnership Ltd (Based on England), has worked in accounts with PDVSA, Shell, Petrozuata (Joint Venture CONOCO&PDVSA), EXXON, etc. Where he helped to save tens of millions of dollars by diminution of Cost/Risk of their operations. He is working in implantation and training in Reliability Centered Maintenance, Management of Industrial Risk, Optimization of Maintenance, Inspection, Materials, Spares, etc.

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