Analysis of institutional and business stress under new technologies implementation

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Abstract: *The paper explores the business cycle changes, costs and impact of a new software ERP (Enterprise Resource Planning) usage onto the work flows, employees' performance and professional behaviour, time line processes and overall performance of the activity in a public organization. The research is empirical, but lead by factual observations and data on institutional stress prompted by change in a large public organization. It stays mainly onto the HR input as both promoter and dissuader of the process, while wider organizational implications are being brought out as part of the equation.*

Key-words: *institutional change, ERP, performance, organizational stress*

1. Introduction to an ERP solution

What is ERP and how does it work? We hear about it, we see that more and more of the large organizations in particular decide to implement it, lately even the public entities; it must be more than a fashion to it and it really is when we look at the functions it integrates and the advantages it is bringing to the organization's work flow. The Enterprise Resource Planning (ERP) is basically a software tool that facilitates the integration of all data in a unique platform that maintains in a common database the information needed for a variety of business functions such as: financial processes, Manufacturing, Supply Chain Management, Projects, Human Resources or Customer Relationship Management. It is well known that all the processes and functions belonging to the value chain of a company contribute to the company's success or failure. These processes and functions do not act in an isolate way: no process or function alone can ensure the success of the chain (Şeitan Bărbulescu, 2008). We extract from this simple certainty the need of harmonization between sources of organization's performance.

Moreover, the ERP solutions have as well an impact on measuring organization's performance overall. Such expectations and assessments are commonly coming from leaders of an organization, these tools are designed to help their daily providing high level, executive information systems with dashboards

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using progress indicators and strategic enterprise management functions, or for technical performance measuring the Corporate Performance Monitor solution can be used (Selmeci et al., 2012).

Prior to the concept of ERP systems, it was quite common for each section or department within the organization to have its own customized computer system.

For example, the Procurement section, Disbursement Unit, Payroll Unit, HR section Travel Unit or Inventories Section could each have their individual computer systems and tools. As expected, emblematic intricacies involved the integration of data from potentially different computer manufacturers and systems. For example, the Payroll Unit would typically calculate and store paycheck information for each employee, while the financial department would normally store financial transactions for the organization. Each system would have to combine using a predefined set of common data which would be transferred between the components of the system. Any deviation from the data format or the integration schedule often resulted in problems.

So when is it advantageous to bring in and implement an integrated software solution? It is generally accepted that in order to be considered an ERP system, a software package must provide the function of at least two systems. For example, a software package that provides both payroll and accounting functions could technically be considered an ERP software package (Monk and Wagner, 2006).

2. Advantages, disadvantages and cost structure

As authors and practice confirm, many entities devote their attention to selecting and implementing an ERP system, but they ignore evaluating its effectiveness. The information managers get often overwhelmed by the diverse requirements of users instead of evaluating the advantages and drawbacks of the ERP system and further improve its performance (Wei, 2008). Some companies even go as far as including in their strategic plans the change of software packages, while considering that the fact of choosing the right harmonizing ERP solution is the key to able to enter new markets and to be successful (Neacsu, 2015).

Optimization is the keyword which compels when we bring out the implementation of integrated software at the organization's level. Such systems promise and indeed make it possible to enhance the performance of the organization in its whole and of each and every employee, credit to the capacity of the system to primarily store, and then convey in real time reliable reports/ratios on various elements of and on to the management of the activity. Especially in public organizations and from the lessons learned in public education from a UK study (Boyne and Chen, 2009), we understand that performance is to be linked to a goal: then while controlling other variables, the extent of performance improvement is influenced positively by the presence of a target. Thus, the results are consistent

with the view that clear and quantified strategic priorities lead to better organizational outcomes.

Back to the ERP implementation, the above mentioned features facilitate the access to the information and reduce the time frame in which the reports circulate between the hierarchic levels and operative decisions are taken. The use of the ERP system highlights the organization's reserves of improvement in terms of speed of reporting and decision, allowing to mainly save time, gain in productivity indicators and possibly build up competitive advantages. Finally, these systems help maintain the organization's capacity to anticipate, in order to identify new market opportunities and develop the skills that allow to put the company in a dynamics of constant consolidation. Due to its crossed functionality, this type of system allows the operational corrections necessary in order to optimize the actions of the organization day by day, while ensuring the means for dissemination of the best practices of management thus obtained beyond the organization, at the level of the sector's value chain. This initially targeted scope of the ERP solution was clearly designed and dedicated to a profit oriented organization, as speed in decision and reporting as well as data integration remain well known ways to concatenate key factors leading to performance. How then such effects would be applied and pragmatically incorporated in the core values of a public organization? The simple truth is that the same speed in treating and integrating data is required in any organization, despite its business nature, capital holders or judicial structure.

We would emphasize on the advantages related to the integration of various and current information in a database, which makes possible, due to their topicality and accessibility, to extract from the system all the operational reports for the management of the organization. Another advantage is linked to the work flow of the activity, which gets somewhat simplified, but the main advantage is that processes are under stricter control – checks and balances across hierarchical levels are liable, traceable and the responsibility of each employee is engaged; we can also add the circuit of the documents, appreciably reduced due to the specific authorizations which are assigned in the system at various levels, thus shortening the circulation of the documents and memoranda. The acknowledged goal is the installation of the concept of "paperless office", by the means of the integrated system, despite of the requirement of responsibility assumed by the signature of the manager on real paper/documents, which in fact sometimes doubles the assignments of authority already hosted into the system.

However not everything is green in paradise. If the organization is not of the right size, the ERP implementation cost compounded by the cost of ownership can be more important than the economies of scale and the resources that get saved. The ERP implementation tends to freeze the evolution of the work flows in the organization.

This is generally a positive aspect but when the organization is young or still growing or merging with other organizations, it becomes a disadvantage. To

implement a process as an ERP work flow requires the completion of several steps: internal agreement on the process definition, contracting its actual transposing in computer terms, developing, testing, correcting, regression testing, implementation in a quality assurance environment and finally its transportation in the production environment.

This work is highly recursive, rather complicated and very expensive. If the process definition was not complete or erroneous, the consultancy costs will soon rise out of control. Another issue is the user acceptance. At the first glance it would seem that an executive instruction will suffice in order to have the personnel adopt the new tool. In reality, if the users are not comfortable with the ERP, the productivity might plunge and all kinds of workarounds will be employed. The user training is, thus, vital and it should be executed with professional expertise, so more costs entrenched.

3. Organizational stress

Any change in the processes flow, in the daily routine, in the way we do things induces a form of stress, mainly known as resistance to change or inertial behaviour. It gets verified for the various processes of our lives and it is factual also for companies, organizations and economic entities, as people replicate their stress to change onto the processes, context and performance of their respective organisations.

Besides the cumulative behavioural stress depicted before, there is an additional institutional burden that comes into place once a new solution (on the technology, software or other fields) is implemented. Although the merits of the new software solution are prodigious, as stated before, many factors become prone to diminish the success of its implementation, as steps of the process are being taken. We will examine a few of these factors, with a focus on the human resource as both accelerator and disruptor of the processes.

The main utility of the new system is the consolidation of all the business processes that concatenate physical, financial and human resources of the entity, regardless of the geographical location of its components. Integration is then the main feature, quality and difficulty to be achieved through ought the whole process.

The approach of implementing such a solution is a phased one, leading to successive releases of system updates and functionalities that are to be finally integrated into a cumulative body that enjoys all the intrinsic features of the components, without as much of the difficulty to imbricate them.

This being said and the target being set out, one of the most significant encounters on the ERP system implementation is getting the employees to understand and essentially to accept the forthcoming change, as a first step to further down use and enter into their new roles. It is crucial for the management to correctly

pass on the new idea as a solution and not as a burden as employee need to understand that this is a new way of doing business and, most importantly that there is no way back to obsolete practices, nor that a choice is possible in that sense. As many studies explain, from a cultural and historical point of view, the employees in public administration are difficult to manage as future ERP user, as the resistance to change manifests in the ERP implementation. As a result of the implementation of the new solution, the ways the organization work change, so are the ways people do their jobs (Hurbean, 2009).

This becomes particularly difficult in the public sector, where the inertia is well settled into the collective mind and produces a specific behavioural response to change. And not any kind of change, a but a profound one, with implications on the day to day tasks, on the mind set and on the rhythm of work.

First of all, teaching to existing staff new skills is a far more complicated achievement than one could think. And taking into consideration that generally negative activators as fear of losing job is the main motivator for the employee to learn the new required skills, we get a quite fit picture of the difficulty of such task. Consequently, the employee's tendency is to delay to the maximum the plugging-in to the new requirements, thus not using the training opportunities properly and frequently showing dissatisfaction while taught. How can that be counter-attacked? Many motivators were put in place, such as focusing on mission and values of the organization, common goals, positive thinking, embrace change etc. The reality is that negative triggers are proven to be far more efficient and seemingly the only ones that eventually produce results. We refer to dread of losing pace as compared to the youngest or more adaptive colleagues, panic of being left behind, of being left out of the new work flow, and most of all, fear of losing the job and incapacity to find and integrate to a new workplace, if ever placed in that situation. It is definitely against all sound principle of general and HR management to emphasize on negative aspects to obtain positive effects, however we observe significant data on it.

4. Organizational change and consequent stress

Change does not necessarily or always lead to stress, but it is important to emphasize that change can have a negative influence on stress induced to employees.

On the other hand, we agree to statements (Holm-Nielsen et al., 2009) that withstand that stress is not an illness. There is no medical diagnosis called 'stress', and the word stress can therefore easily become a term used to describe physical and mental discomfort during a busy day. We retain as definition of the concept of stress, one often used in Denmark, and which asserts that stress is a state of high excitement and demotivation (Figure 1).

Another rather salvaged concept is the *burnout syndrome*, which signifies feelings of physical and emotional exhaustion, alienation from others, and reduced personal accomplishment. It is equally likely to occur in big corporations, small businesses, or government offices. In organizations that downsize through layoffs or hiring freezes, surviving employees have to work harder to cover the tasks of others (Abu-Jarour, 2014).

The associated reactions may include physical ones (from moderate: headache, dizziness, stomach pain, nausea to severe heart palpitations, aggravation of infections and chronic pre-existent illnesses), psychological ones (memory lapses, lack of concentration, fatigue, irritability, demotivation) and behavioral ones, such as disturbed sleep, loss of appetite, low self-esteem, indecisiveness, introverted accesses, negativity, dis-courteousness, and increased malingering.

Authors often cite the Occupational Stress Scale (OSS), developed by House, McMichael, Wells, Kaplan, and Landerman (1979), measures the frequency with which employees are bothered by stressful occurrences. The measure entrenches five subscales that assess the extent of occupational stress due to job responsibilities, quality concerns, role conflict, job vs. non-job conflict and workload (Fields, 2002). The coefficient alpha values are of .71 for responsibility pressures, .75 for job vs. non job conflict, .78 for quality concerns, .69 for role conflict and .81 for workload stress.
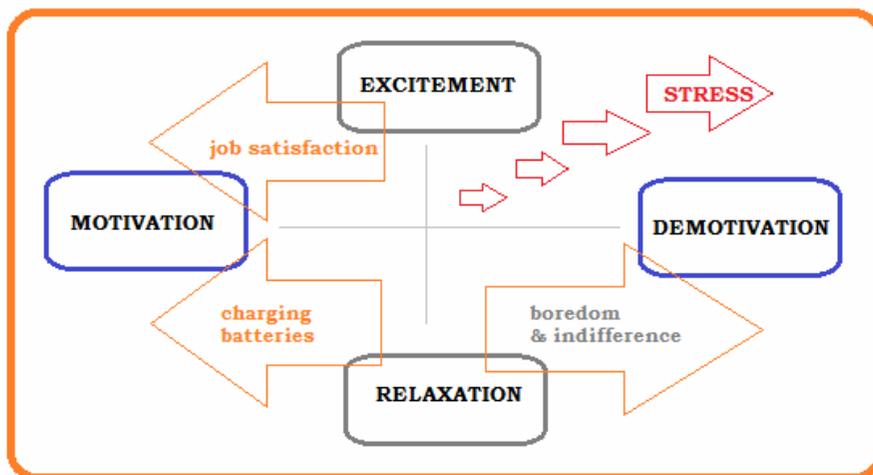
Figure 1. Institutional stress due to change (adapted from Holm-Nielsen et al., 2009)

It is why, once the decision is taken to implement a new paradigm that may cause a significant level of change and disturbance over staff, it is necessary for the management to ensure that all staff understand and is willing adapt to new conditions of their work environment. This process requires extra energy, and over a longer period of time, this can contribute to stress.

Considering the directions of studies on occupational stress impact on the employee's behavior we cannot avoid questioning whether particular types of organizations induce emblematic traits to the analyzed phenomenon. Given the role played in the modern state, we would inquire whether public organizations (in areas such as administration, education, health or even para-governmental institutions) accentuate the occupational/institutional stress on their employees by the inner nature and manner of expression of specific functions of their structure. The dilemma is generated by the existence of strong correlations between the nature of the organization and some forms of extreme stress, the emblematic case being the manifestation of post-traumatic stress disorder (PTSD) in the case of soldiers.

The functional area that is immediately linkable to this line of discussion is the human resources management. Here there is a clear distinctiveness of the public sector above all, observable in major developed countries over the past two or three hundred years.

5. Conclusions

Given that many national and international public organizations seek stability, specialization and improved human resources it became a practice for the employer to introduce a number of supplementary features (specific training sessions, enrolment in professional associations), in order to better form and then retain their employees. These additional conditions are obviously stated from the moment of entry in duty up to the time of ending the contract, and generate specific responses as seniority status, super-specialization and ultimately lack of employability elsewhere. All these combined generally involve, at the moment of the staff's eventual separation, keeping a prior commitment between the parties. The above mentioned additional conditions for maintaining the employee's commitment induce thus an amplified form of stress, adding to the "ordinary" level.

But this stress intensification may also be the result of some particular aspects of the public activities, brought by the nature of the organization. For example, employee's performance measurement is particularly problematic, as even public organizational performance - as concept - represents an issue (Băcanu, 2007). The consequence is that evaluation standards are affected by subjectivity and dispute between employer and employee, the organization's performance is anyway subject of political dispute while paradoxically, the employees' interest to keep their job in such an organization is continued. As stated before, additional processes have amplifying effects of occupational stress. However, the effects are different when we talk about "internal" and "external" staff of the organization. Employees will want to maintain their job and pursue a career while automatically accepting the additional stress that goes with it, while the same form of specific stress will make recruitment more difficult and may subsequently attract less qualified and motivated personnel.

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