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Dundar F. Kocaoglu

Research Paper Critical Review:

The Impact of Technological Change in a Service Organization

By Juli Bonini

This is an evaluation of the concepts outlined in the paper "The Impact of Technological Change in a Service Organization" by S. Globerson, I. Shalev, and O. Shenkar.

Study Outline

The paper studies technology implementation in a service environment. The authors chose to focus on the impact a technological change has on job satisfaction rather than on job performance. Job satisfaction is much more difficult to measure than job performance. Job satisfaction is subjective whereas job performance can have an output which is easier to measure. Their research indicated that technology has a significant impact but that impact can be either negative or positive. The authors conducted an extensive literary search as to the reasons for this and suggest the inconsistency in results is due to the influence of contingency factors. They proceeded to identify three major factors and formulated three test hypotheses, based on each factor. The purpose of the study was to determine weather or not these factors impacted employee job satisfaction by testing the validity of the hypotheses. The factors are paired with their respective hypothesis below.

Factor 1: The nature of change brought about by technology
Hypothesis 1: Employees exposed to the change will have increased job satisfaction

Factor 2: The effect of the change on different organizational levels
Hypothesis 2: Employees' reactions to change depend on their organizational level

Factor 3: Employees exposure to and preparedness for change
Hypothesis 3: Lack of proper employee introduction to change will decrease job satisfaction

A study was initiated in a large international bank to test these hypotheses. New technology was introduced in the form of a comprehensive software package to approximately half of the bank's branches while the other half served as the control group. There were three organizational levels present in each of the branches. Their results indicate that:

Hypothesis 1: False
> The nature of the change brought about by technology is not sufficient to promote job satisfaction alone (doing more in your job does not make it automatically better)

Hypothesis 2: True
> Technology affects job satisfaction in different levels of an organization differently (a change in your job may not make it better but that change may make another job better)

Hypothesis 3: Not definitively tested
> Suggested from research and hypothesis 2 that: Inadequate preparedness for technology implementation and the results that will ensue may have an adverse impact.

Method

A survey method was used. Three surveys were administered to both test and control groups. The first sought information related to aspects of job dimensions. This was used to indicate employee motivation or satisfaction as a function of job content. The survey used an integrated index that quantified the intensity of job richness. High scores are known to correlate with high job satisfaction. This survey was issued both before and six months after the implementation to all organizational levels. A comparison between the results indicated weather or not the technology change affected job satisfaction and in a positive or negative manner. This survey was used to test hypothesis 1 and hypothesis 2.

The second survey measured changes in technical job characteristics or output. This was issued after the implementation and only to organizational levels that were directly affected by the change. This quantitative survey was used to measure increased job performance due to the change. In this case, the test line employees were shown to be more productive than the control employees by processing more transactions. This survey was used to prove the implementation generated positive output results - it was successful.

The third survey was issued only to management and sought to identify how the technological change was introduced. This survey was not quantitative. This was used to test hypothesis 3.

The surveys seem to be well targeted toward the information sought and the statistical analysis appropriate. Care was taken that the test groups were indeed similar and their demographics were studied. The study was done with technical perfection and the procedure was suited to the task.

Discussion

There is a great deal written about the measurement of benefits derived from technological implementation in an organization, the importance of 'setting the stage' with pre-training to maximize benefits from implementation, and behavior aspects associated with technology implementation. This paper adds to that library a quantified study of the human element in technology implementation. The findings of this study support the findings by other researchers that the impact of technological implementation is dependent on other variables. The contribution is significant in that the study quantified and measured changes in an area where that is not normally done. It is also interesting because it studies employee job satisfaction rather than job performance. Satisfaction is a very subjective area and most research draws somewhat ambiguous conclusions. The focus of this study on a specific aspect of the implementation issue measured with quantifiable tools allowed useful and clear results. The reasons accounting for these results however are not as straightforward.

There is no mention of rewards. It would seem appropriate in a study measuring employee motivation and job satisfaction to account for rewards as a factor contributing to the study results. For example, the implementation of the software package increased teller productivity in the test branches. In the manufacturing industry it is likely there would be bonus incentives for increased productivity. If an employee received a bonus as a result of using a new technology, they might view their job as having increased in job satisfaction after such an implementation. This study done in that environment would have different results.

The reasoning behind hypothsis 1 is not clear. The idea is that change that broadens tasks and enriches content will increase job satisfaction. This seems intuitive but who is the judge of enrichment and

by what are they basing judgment on? The line and staff employees both experienced the same change yet one group cited increased job satisfaction while the other did not. Working backwards, this suggests the staff felt the change enriched their job content but the line did not. Thus the change would not generate increased job satisfaction in line employees because it did not enrich the their job content. Therefore hypothesis 1 would be found true rather than false. Hypothsis 1 was found false based on increased job performance. But job performance was not the object under study.

A weak point in the paper presentation is the prominence given to the concept that management must properly introduce and employees need to be informed in advance of technological change. This is an extremely important point and mentioned in virtually every training expose. But this concept is not tested in this study.

The strength of this study lies in the quantitative measuring tools used and clarity of the results.

Concepts

The conclusion presented by the paper, 'that technological change does not in itself have a particular impact on organization members, but that the impact depends rather on intervening or contingency factors', is significant. It is significant because service industries must implement technology on a continual basis just to survive. And they need to get all they can out of that technology. This implies there must be some investment other than just in the technology for the implementation to be positively embraced by the work force.

The authors go on to cite from their literature search that an important factor promoting job satisfaction is management involvement. And the authors also conclude that a lack of a formal organizational plan for introducing a change serves as a major contributor to an unfavorable perception of the change. There is no support for this in their study. The results of the third survey indicate there was little employee involvement in the implementation process. But it does not show unequivocally that more involvement would have generated different results. It would be instructive to see the results of this study

done again by introducing the same software to the current control group but with the addition of comprehensive training and involvement of all participants. A comparison of the new results with this study's current results would give substance to this conclusion.

Conclusion

   The results of this study assert that employee job satisfaction does not depend on what the technological change does to the job but how it changes the job. It is further suggested that with managerial input a greater degree of job satisfaction could be derived. This supports the widely held theory that the success of technological implementation depends on either orienting the technology toward the workforce or vice versa.

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