Chapter 8.3
Innovation in New Technology and Knowledge Management:
Comparative Case Studies of its Evolution during a Quarter Century of Change

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ABSTRACT

The research on which this chapter is based monitors the evolution of IT innovations and their effect on human emotions, including longitudinal influential factors, and examines some of the resulting syndromes, which are termed Computer Fear Syndrome (CFS) and User Alienation Syndrome (UAS). The research involves an analysis of the empirical data derived from several case studies and concludes with a funnel model that explains appropriate management action and puts forward new ideas for developing knowledge management systems in a variety of organizations that may alleviate or prevent such syndromes in the work place.

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INTRODUCTION

This comparative research depicts and explains the evolution of organizational innovation through the adoption and deployment of information systems. There are two cases that have been carefully and thoroughly investigated for years. The first is the M Company, one of the top two computers groups in Taiwan, which developed corporate publishing systems in 1988. The second was the C Company, the largest telecommunications group in Taiwan, which brought in knowledge management (KM) systems for corporate training in 2004.

There are differences in the objects and the objectives of innovation between the two cases. Technically, the corporate publishing systems are desktop based; relatively compact local working groups while the knowledge management systems

are web-based, with more sophisticated, boundaryless environments. The goals of the former systems were to reduce labor and increase sufficiency of production. The purposes of the latter intended to share intelligence and to encourage creativity through collaboration. In the early days of computerization, the Computer Fear Syndrome (CFS) was a conceptual threat while the User Alienation Syndrome (UAS) may be a subconscious threat at present.

It is worthy of note that there are more similarities in the processes of innovation of the current case with the first case that occurred more than a quarter of a century ago. The fundamental corporate decision setting is also the same as before. Management, as always, has to comply with innovative ideas, investment and risk at the same time. The goals of expected efficiency whether in physical profits or in mental productivity have also remained the same over the years. The individual user's behavioral factors involved in implementation and results of innovations have also always needed to be identified. The organizational factors in management actions are worthy of constant re-examination. Yes, there are many intriguing, even novel, variables that may affect innovations, according to the vast body of related literature. However, how many of these are fundamentally influential?

This research attempts to reveal, by selective quantitative and qualitative evidence from very fruitful resources, which factors are changeable and which are likely to stay in place for a very long time. The author/researcher concludes with several statements that may be helpful for those who want to adopt new technology, especially, in acquiring knowledge management systems in the future. Discussion of the measurement of the efficiency of knowledge management or latent, unstructured psychological constructs have also been amended according to the specific requirements of the present. The researcher of this study was the Director in charge of the Innovation Project for the M Company and a consultant for the C Company.

CASE 1: M COMPANY

The Problem

Around the mid 1980's, business began to seriously consider bringing in PC-based information systems to replace labor intensive work.[1] One of management's great concerns was that of the Computer Fear Syndrome (CFS). CFS referred to computer anxiety or negative attitudes toward adopting computing work and predicted that employees with CFS would performance poorly. (Wu, 1995). When computers "invaded" human life, some researchers argued as to whether the computer was "a threat or a promise?" (Cherry, 1971) They thought that senior persons or novices who were used to a traditional work environment would express negative attitudes towards computers. If they began to learn computing tasks, they would be slower and make more errors than new employees. The Fear Syndrome, generated by an anxiety of failure, might also limit their performance. (Caldeira &Ward, 2001) (Shneiderman, 1980). So, management had two choices: First, if the CFS did widely exist; they would have to recruit new, young employees and let the current workers go. Second, if the CFS did not really cause significant harm, they would need to provide training programs for current employees and educate them about the EUC environment.

The CFS was also cautiously perceived and discussed in Taiwan. Hung and Xu (1988), based on a survey of government organizations, found that staff employees who reported themselves as having the CFS was 20%. However, the range of the CFS that was recognized and evaluated by supervisors was bewilderingly greater, from 4.4% to 48.2%. Since the evidence was inconclusive, the reaction of different companies varied. The publishing business used to be a highly labor intensive