Title: A Critical Review of " An assessment of the influence of organizational characteristics on information technology adoption decision: a discriminative approach"

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Abstract: A paper titled "An assessment of the influence of organizational characteristics on information technology adoption decision: a discriminative approach" is critically reviewed in this individual report.

A Critical Review of " An Assessment of the Influence of Organizational Characteristics on Information Technology Adoption Decision: A Discriminative Approach"

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An assessment of the influence of organizational characteristics on information technology adoption decision: a discriminative approach

Submitted to Doctor Kocaoglu

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Introduction

The development of new information technology has offered new opportunities to consider for companies. The features of innovations as ISDN are attractive such as the ability to deliver simultaneous, faster, transmission of digital voice, data, image over a single telephone line. This innovation based on existing technology has created new stakes conducting organizations to adopt or reject it.

Most researchers agree to say that the adoption or rejection depend on three factors:

- Characteristics of innovation
- Characteristics of the organization
- Management process within the organization

If the investigation of the first and the third characteristics have given consistent results, the explanation provided by the exploration of the characteristics of the organization are limited. However many variables have been identified, the previous studies in this field were difficult to use, didn't provide additional insight or were valid only in restricted area: showing the complexity of the problem.

The authors have built an ISDN adoption model based on different assumptions suggested by different previous researches:

- The effect of organizational strategy subdivides in expansion and control.
- The effect of organizational context subdivides in openness, norms-encouraging-change, slack resources.
- The effect of organizational structure subdivides in centralization, formalization and complexity.

Model

Organizational strategy

Two assumptions were proposed and validated, supporting the previous studies of Huff and Munro[1] then Brancheau[2]:

H1) Organizational strategies designed to expand diffusion of an information technology are positively related to its ISDN adoption decision.

H2) Organizational strategies designed to control diffusion of an information technology are negatively related to its ISDN adoption decision.

Organizational context

The current study, concerning the openness use the idea of Brancheau[2] and Swanson[3]:

H3) A higher degree of organizational openness will positively influence the organization's decision to adopt ISDN.

Idea which is not validated and could even offer a supplementary obstacle because adopters would be informed of the eventual problems and limitations of ISDN.

Concerning the norms encouraging change, idea postulated by Souder[4]:

H4) The existence of a greater extent of norms encouraging changes in an organization will have a positive influence on ISDN adoption.

This assumption has not been validated empirically but recognized has a facilitator.

Concerning the slack resources, idea postulated by Hirsh and Al[5] then Swanson[3]:

H5)higher levels of organizational slack resources will positively influence the organization's decision to adopt ISDN.

This assumption is validated.

Concerning the organizational size, idea postulated by Swanson[3]:

H6)Larger organizations will be more inclined to adopt ISDN.

This assumption is validated but the size alone can not predict adoption or rejection.

Organizational structure

It's here that appear the least discriminative factors: this was not expected and even contrary to many prior researches and so seems to be the most sensitive aspect of the problem:

The degree of centralization inspire different conclusions: some researchers like Williams[7] thought and validated that a centralized structure facilitated faster, more efficient adoption in spite of the resistance of the lower level managers. However the majority of the others like: Moch, Morse[8], Grover, Goslar[9] assumed it was, on the contrary, negatively related to the adoption:

H7)Higher levels of organizational centralization will negatively influence the organization's decision to adopt ISDN.

Assumption chosen by the author of this research ,but not validated.

The degree of formalization has known the same problem: only two researchers Burns and Walker[10] thought that formalization could negatively impact the adoption. All the other have suggested that there is no impact between formalization and adoption.

H8)Higher levels of organizational formation will negatively influence the organization's decision to adopt ISDN.

Assumption chosen by the author of this research ,but not validated as this following assumption, based on the employee's range of knowledge, expertise and experience:

H9)Higher levels of organizational complexity will positively influence an organization 's decision to adopt ISDN.

This model has been first validated by two telecommunication directors, proving the serious the study then only, sent to the MIS Directors of the Business Week 1000 companies. The rate of answers was 23%.

At this level of the study: I ask me some questions:

- Is it sure that these persons express the opinion of all the company ?as it is written in observation: "management alone cannot be aware of the prospects and problems associated with ISDN availability."
- Is this sample is enough to extract a conclusion?

Discussion of the results

The outcome of the adoption decision were 3 categories: "yes", "no" and "unknown". We can appreciate the authors of this research have investigated more in depth this "unknown" category which mixes those who are still considering the adoption and those who are not considering the adoption: category which regroup 2 different behaviors.

The reasons for adoption and rejection were classified in order of significance:

Concerning the adoption decision:

- it was more often the cost of the system and the economy realized thanks to its use than the features of the system itself.

Concerning the rejection decision: three main ideas are proposed

- The fact that ISDN is not a revolutionary communication technology, very incremental.
- The fact that the technology is immature, unavailable.
- everybody waited the establishment of standards.

Observing the organizational strategy we can observe two different approaches to deal with ISDN adoption or rejection: those who are involved in the expansion of IT diffusion thanks to champion and those who practice more action control such as the acquisition constraints and strict adoption standards. It has long been recognized by practitioners and academics that it is highly risky to attempt complex change without a champion. But because the champion role is poorly understood, it is difficult to know whether the champion is really a champion or simply someone who says he or she will support the project.[11]

A plan for a successful ISDN setup should include[12]:

1) availability
2) selection
3) installation

4) configuration and confirmation

The bottom line on ISDN is that the real price is not determined merely by equipment and tariffs .Net managers who want to deploy ISDN across the enterprise need to consider all the costs when drawing up their ISDN budgets. Additional staff time and training will definitely be a factor.[13]

Most analysts believe the older technologies are still the best choice for the next future. ASDL and ISDN are both part of a last mile transport system called DSL that can carry high speed data over standard copper telephone lines, rival technologies are several years far away from wide-scale deployment and have their own problems, such as the need to recondition telephone and cable lines[14]. ISDN is starting to play a major role in providing services for accessing enterprise network and the Internet. ISDN's biggest advantages are in its improved throughput over modems and the facts that it is already deployed in many locations. However it is customer service that is the problem.

While not available everywhere, lack of availability is no longer the biggest complaint[15], according to a other survey of ISDN providers taken by Hekimian(Rockville, Maryland). The survey revealed four main problems among ISDN service providers:

1) Improper Server identifier (SPID) programming
2) Three way mismatches between what the customer wants, what the service order says and the information that is provisioned and built up in the switch
3) Line quality
4) Call completion

It is clear in this case that a company which is linked with the external working environment, even with a few resistance to change may be has to reconsider its adoption policy, seeing the result of this survey.

A commentary states that, for many IT professionals, it has been frustrating to have to wait for telecommunications providers to exploit the potential of high speed data communications services such as ISDN. Nevertheless a number of development could quicken the pace of adoption. Reforms offered by Federal Communications Commission are applying increased pressure on the old guard by letting new players into the market for voice and data services[16].

Even if ISDN has most of its proponents within large organizations , because the economy of scale is more obvious, not only it reduce the size of the sample of surveyed companies but also it doesn't take in account the small businesses which are more and more interested in ISDN adoption.

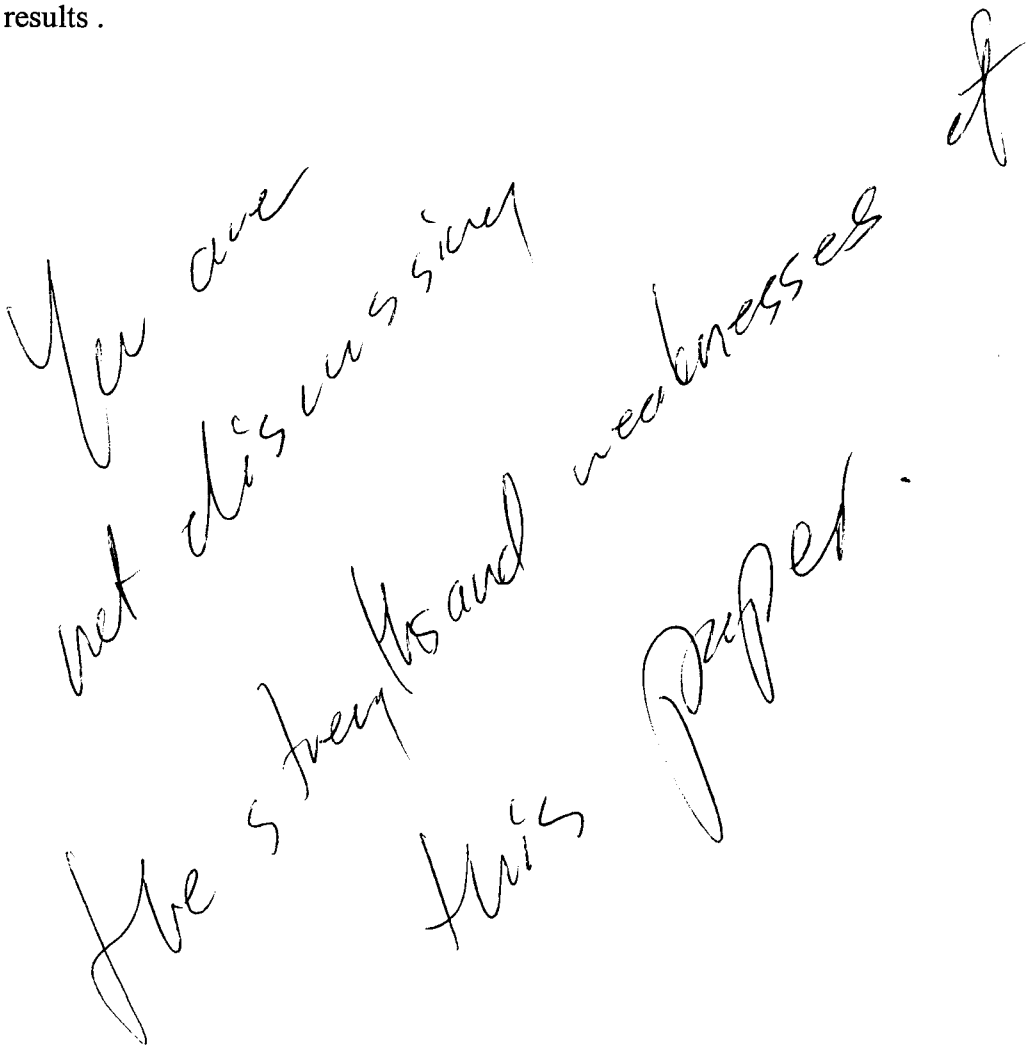
ISDN offers real benefits for a telecommuter or small business[17]. For example, hospitals and health organizations are finding that ISDN, with its ability to carry voice , video, and data on one line, is a cost-effective way to bring medical services to remote locations. New England Medical Center uses ISDN lines to let specialists in Boston view fetal ultrasounds that are being conducted at clinics across Massachusetts. It also has an ISDN line to Buenos Aires so cardiologists in Boston can offer 2nd opinions to Argentinian heart patients. Before ISDN was used to link 5 hospitals in the Syracuse area (New York), outlying hospitals would send echocardiograms to specialists in Syracuse via videotape. Now, doctors in Syracuse can perform long-distance triage on cardiac patients in real time and determine which cases need to be transported to the central hospital.[18]

In recent years, ISDN's sales have increased due to several factors, including[19]: 1. Lower prices, 2. More lines, 3. The advent of the Internet.
ISDN has become the technology of choice for connecting branch offices and telecommuters, as well as breaking into the high-end residential user markets. In addition to a growing number of applications, the adoption of more universal ISDN standards has helped push the technology along . Many of ISDN's problems have been solved over the past few years as regional Bell operating companies have extended their service coverage and sharpened their marketing strategies. According to International Data Corp. about 500,000 ISDN lines are installed nationwide , and that figure is predicted to increase nine-fold by 2000[20]. Doing of this innovation, as incremental it is, a good decision for the long run.[13]

conclusion

This study was one of the first to discriminate the adoption behavior IT adopter at the organizational level.If it was possible to distinct different variables that affect the diffusion of ISDN at the level of the organizational strategy and organizational context , it was much more difficult to depict in what the organizational structure, play a role in the assessment of the ISDN.

Personally, I think it's very difficult to isolated the 3 factors that are: the characteristics of the innovation, the characteristics of the organization, and the management process within the organization, especially in the field of the communication where everything changes so fast, and where the adoption decision is based more on what the other have done, rather the potential attitude toward the innovation. I am quite sure that the same study done today should give different results .



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