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Performance Measurement and Comparison of Lossless Compression Algorithms

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ABSTRACT

Data compression is widely required in the era of Information-communication-Technology (ICT), where it can be used to conserve the energy of networks, because a file with reduced size requires less time to get passed over the network. Thus the technique of compression and decompression can be quite effective in establishing efficient communication over the computer networks. The work performed in the paper, compares the Loss less data compression algorithms and analyses various parameters like compression ratio, compression speed, decompression speed, saving percentage. An experimental comparison of a number of different lossless data compression algorithms is presented in this paper. The article is concluded by stating which algorithm performs well for text data.

KEYWORDS

Data compression
Lossless Compression
Lossy Compression
Compression parameters

PREAMBLE

Data compression enters into the field of Information Theory because of its concern with redundancy. Redundant data or information consumes both more space and time, because redundant information in a message takes extra bit to encode, and if we can get rid of that extra information, we will have reduced the size of the message and hence the processing speed. There are various compression techniques to get rid of this redundant information. This paper examines the performance of various compression techniques viz. the Run Length Encoding Algorithm, Huffman Encoding Algorithm, Shannon Fano Algorithm, Adaptive Huffman Encoding Algorithm, Arithmetic Encoding Algorithm and Lempel Zev Welch (LZW) Algorithm. In particular, performance of these algorithms in compressing text data is evaluated and compared.

REVIEW OF LITERATURE

The Compression techniques can be lossless or lossy. Lossy data compression concedes a certain loss of accuracy in exchange for greatly increased compression. Lossy compression proves effective when applied to graphics images and digitized voice. Whereas Lossless compression consists of those techniques guaranteed to generate an exact duplicate of the input data stream after a compress/expand cycle. This is the type of compression used when storing database records, spreadsheets, or word processing files. In these applications, the loss of even a single bit could be catastrophic. Lossless compression techniques like run-length coding [i], Huffman encoding [ii][viii], arithmetic coding [iii], Limpel-Ziv-Welch (LZW) coding [iv] etc. are widely used in compressing medical and satellite images as they retain all information from the original image. Lossy compression techniques like Discrete Fourier Transform (DFT) [v], Discrete Cosine Transform (DCT) [vi], Discrete Wavelet Transform (DWT) [vii] transform the image data to a different domain and quantize the coefficients. These techniques give higher compression ratios.

Run Length Encoding

Run Length Encoding or simply RLE is the simplest of the data compression algorithms. The consecutive sequences of symbols are identified as runs and the others are identified as non runs in this algorithm. This algorithm deals with some sort of redundancy [9]. It checks whether there are any repeating symbols or not, and is based on those redundancies and their lengths. Consecutive recurrent symbols are identified as runs and all the other sequences are considered as non-runs. For an example, the text "ABABBBBC" is considered as a source to compress, then the first 3 letters are considered as a non-run with length 3, and the next 4 letters are considered as a run with length 4 since there is a repetition of symbol B. The major task of this algorithm is to identify the runs of the source file, and to record the symbol and the length of each run. The Run Length Encoding algorithm uses those runs to compress the original source file while keeping all the non-runs without using for the compression process [xi].

Huffman Encoding

Huffman Encoding Algorithms use the probability distribution of the alphabet of the source to develop the code words for symbols. The frequency distribution of all the characters of the source is calculated in order to calculate the probability distribution. According to the probabilities, the code words are assigned. Shorter code words for higher probabilities and longer code words for smaller probabilities are assigned. For this task a binary tree is created using the symbols as leaves according to their probabilities and paths of those are taken as the code words. Two families of Huffman Encoding have been proposed: Static Huffman Algorithms and Adaptive Huffman Algorithms. Static Huffman Algorithms calculate the frequencies first and then generate a common tree for both the compression and decompression processes [9]. Details of this tree should be saved or transferred with the compressed file. The Adaptive Huffman algorithms develop the tree while calculating the frequencies and there will be two trees in both the processes. In this approach, a tree is generated with the flag symbol in the beginning and is updated as the next symbol is read[xi].

The Shannon Fano Algorithm

This is another variant of Static Huffman Coding algorithm. The only difference is in the creation of the code word. All the other processes are equivalent to the above mentioned Huffman Encoding Algorithm[xi].

Arithmetic Encoding

In this method, a code word is not used to represent a symbol of the text. Instead it uses a fraction to represent the entire source message [x]. The occurrence probabilities and the cumulative probabilities of a set of symbols in the source message are taken into account. The cumulative probability range is used in both compression and decompression processes. In the encoding process, the cumulative probabilities are calculated and the range is created in the beginning. While reading the source character by character, the corresponding range of the character within the cumulative probability range is selected. Then the selected range is divided into sub parts according to the probabilities of the alphabet. Then the next character is read and the corresponding sub range is selected. In this way, characters are read repeatedly until the end of the message is encountered. Finally a number should be taken from the final sub range as the output of the encoding process. This will be a fraction in that sub range. Therefore, the entire source message can be represented using a fraction. To decode the encoded message, the number of characters of the source message and the probability/frequency distribution are needed [xi].

Lempel Zev Welch Algorithm

Dictionary based compression algorithms are based on a dictionary instead of a statistical model [x]. A dictionary is a set of possible words of a language, and is stored in a table like structure and used the indexes of entries to represent larger and repeating dictionary words. The Lempel-Zev Welch algorithm or simply LZW algorithm is one of such algorithms. In this method, a dictionary is used to store and index the previously seen string patterns. In the compression process, those index values are used instead of repeating string patterns. The dictionary is created dynamically in the compression process and no need to transfer it with the encoded message for decompressing. In the decompression process, the same dictionary is created dynamically. Therefore, this algorithm is an adaptive compression algorithm [xi][xii].

RESEARCH OBJECTIVES

- **To compare and contrast various compression algorithms for different compression performance evaluation parameters**
- **The finding of this paper could create a greater awareness on the choice of the compression algorithm which works best for textual compression.**

RESEARCH METHODOLOGY

In this paper we studied compression ratio, compression time, saving percentage as the parameters to evaluate the effectiveness of compression algorithms using file sizes. Some more parameters to evaluate the performance of compression algorithms are: Compression speed, computational complexity and probability distribution, which are also used to measure the effectiveness.

The performed work involves implementation of various compression algorithms. Further, the text files of various size are processed through the implemented code of the different compression algorithms, and parameters like compressed file size, compression time, decompression time etc are recorded to evaluate various parameters like compression ratio, compression speed, saving percentage etc.

Compression Ratio is the ratio between the size of the compressed file and the size of the source file.

$$\text{compression Ratio} = \frac{\text{size after compression}}{\text{size before compression}}$$

Compression Factor is the inverse of the compression ratio. That is the ratio between the size of the source file and the size of the compressed file.

$$\text{compression Factor} = \frac{\text{size before compression}}{\text{size after compression}}$$

Saving Percentage calculates the shrinkage of the source file as a percentage.

$$\text{saving percentage (\%)} = \frac{\text{size before compression} - \text{size after compression}}{\text{size before compression}}$$

All the above methods evaluate the effectiveness of compression algorithms using file sizes. There are some other methods to evaluate the performance of compression algorithms. Compression time, computational complexity and probability distribution are also used to measure the effectiveness.

The performance measurements factors discussed above are based on file sizes, time and statistical models. Since they are based on different approaches, all of them cannot be applied for all the selected algorithms. Additionally, the quality difference between the original and decompressed file is not considered as a performance factor as the selected algorithms are lossless. The performances of the algorithms depend on the size of the source file and the organization of symbols in the source file. Therefore, a set of files including different types of texts such as English phrases, source codes, user manuals, etc, and different file sizes are used as source files. A graph is drawn in order to identify the relationship between the file sizes, the compression and decompression time.

The performances of the selected algorithms vary according to the measurements, while one algorithm gives a higher saving percentage it may need higher processing time. Therefore, all these factors are considered for comparison in order to identify the best solution. An algorithm which gives an acceptable saving percentage within a reasonable time period is considered as the best algorithm.

ANALYSIS AND INTERPRETATION

Five lossless compression algorithms are tested for ten text files with different file sizes and different contents. Followings are the results for 10 different text files.

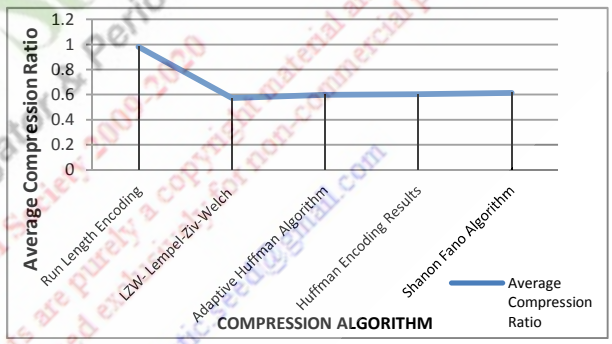
Compression Ratio

After applying compression algorithms on the ten text files, following results are observed for the compression ratio. Table-1 represents the average compression ratio observed for various algorithms. Based on the data recorded in Table-1, below, it is analyzed that LZW algorithm gives excellent compression ratio, where as the RLE algorithm provides the worst of the same. The Graphical representation of the average compression ratio variation is given in Figure -1 below. Where as Figure-2 depicts the observed compression ratio for the entire set of 10 text files under study. Further, Table-2 describes the trend analysis of the compression ratio pattern followed by the various algorithms under the study. Among all algorithms, its observed that compression ratio of the RLE increases with the increase in the original file size.

TABLE – 1: COMPRESSION RATIO – COMPARISON

COMPRESSION ALGORITHM	AVERAGE COMPRESSION RATIO
Run Length Encoding	0.98235853
LZW- Lempel-Ziv-Welch	0.571981384
Adaptive Huffman	0.597829479
Huffman Encoding	0.603261853
Shanon Fano	0.61491948

FIGURE – 1: COMPRESSION RATIO – COMPARISON



FIGURE–2: FILE SIZE Vs COMPRESSION RATIO COMPARISON

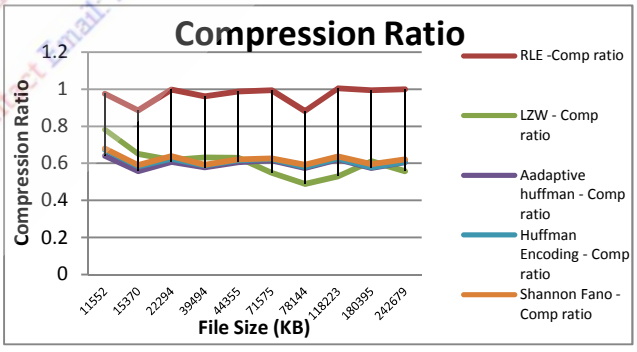


TABLE – 2 : COMPRESSION RATIO – TREND EQUATION & R^2 VALUE COMPARISON FOR COMPRESSION RATIO

Compression Time

Based on the values tabulated in Table-3, it is identified that RLE consumes least amount of time where Adaptive Huffman algorithm for file compression requires maximum amount of time. This doesn't mean that RLE is the best because, comparing the results of Table 3 and Table-1 for RLE, we observe that the compression ratio is quite poor in case of RLE, which means that compression , which is the basic purpose of the algorithm is performed quickly but not effectively. Whereas the compression ratio of Adaptive Huffman algorithm is observed to be second best among the algorithms under study and this is reflected in its average compression time which is on the higher side. Apart from this LZW's , compression time is slightly lesser than that of Adaptive Huffman and its compression ratio is also slightly better than that of the Adaptive Huffman Algorithm for file compression. Analysing the Trendline equation data and R^2 Values, given in table-4, we observe that results for LZW and Adaptive Huffman coding are quite close and that of the Huffman coding and Shanon Fano Algorithm are also quite close but results for RLE are not observed to be matching with either of the algorithm under study.

TABLE – 3 : COMPRESSION TIME – COMPARISON

COMPRESSION ALGORITHM	AVERAGE COMPRESSION TIME(SECONDS)
Run Length Encoding	9.3498
LZW- Lempel-Ziv-Welch	314.241
Adaptive Huffman	338.4653
Huffman Encoding	145.0981
Shanon Fano	131.1463

FIGURE –3: COMPRESSION TIME – COMPARISON

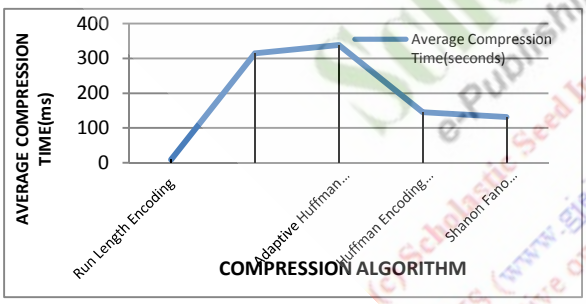
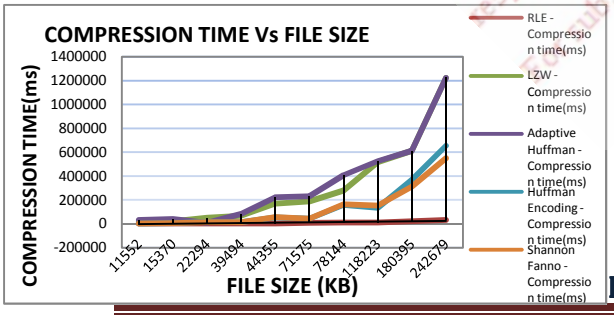


FIGURE – 4:FILE SIZE Vs COMPRESSION TIME



COMPRESSION ALGORITHM	TREND EQUATION TO APPROXIMATE COMPRESSION RATIO	R^2 VALUE FOR EQUATION TO APPROXIMATE COMPRESSION RATIO
Run Length Encoding	y = 0.004x + 0.942	0.094
LZW- Lempel-Ziv-Welch	y = -0.019x + 0.713	0.536
Adaptive Huffman	y = -0.001x + 0.603	0.009
Huffman Encoding	y = -0.003x + 0.632	0.160
Shanon Fano	y = -0.003x + 0.636	0.105

TABLE – 4: COMPRESSION TIME – TREND EQUATION & R^2 VALUE COMPARISONVFOR COMPRESSION TIME

COMPRESSION ALGORITHM	TREND EQUATION TO APPROXIMATE COMPRESSION TIME	R^2 VALUE FOR EQUATION TO APPROXIMATE COMPRESSION TIME
Run Length Encoding	y = 2990x - 7098	0.735
LZW- Lempel-Ziv-Welch	y = 10899x - 28523	0.754
Adaptive Huffman	y = 11086x - 27129	0.792
Huffman Encoding	y = 57060x - 16873	0.666
Shanon Fano	y = 49577x - 14152	0.719

Saving Percentage

Analysis of the values tabulated in Table -5 and Table - 6 Adaptive Huffman offers maximum saving percent, apart from this there is a close contest between LZW, Huffman Encoding and Shanon Fano algorithms, but RLE stands ot of the line and offers least Saving percent. Results of Table-6 shows that RLE follows negative slope of trend line, thus it is interpreted that the saving percent declines with the increase in the original file size.

TABLE – 5: SAVING PERCENTAGE – COMPARISON

COMPRESSION ALGORITHM	AVERAGE SAVING PERCENTAGE (%)
Run Length Encoding	3.177851664
LZW- Lempel-Ziv-Welch	39.51374914
Adaptive Huffman	40.12850652
Huffman Encoding	38.95399071
Shanon Fano	38.03128421

FIGURE –5: SAVING PERCENTAGE – COMPARISON

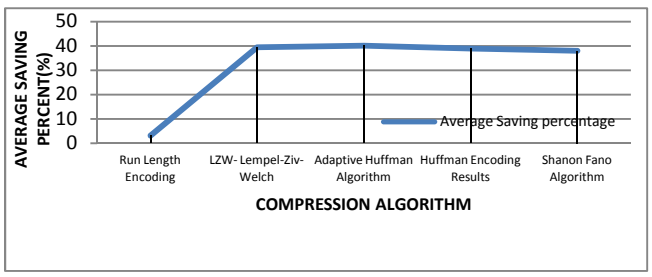
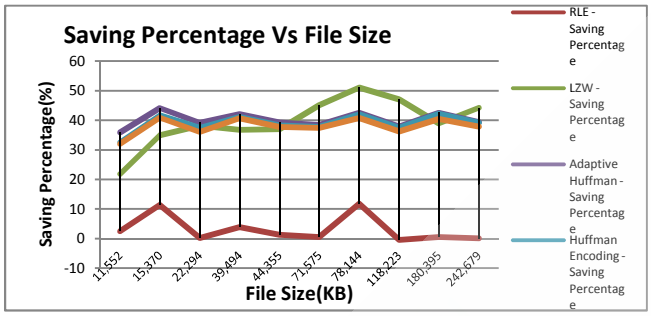


FIGURE – 6:FILE SIZE Vs SAVING PERCENT



VALUE COMPARISON FOR SAVING PERCENT

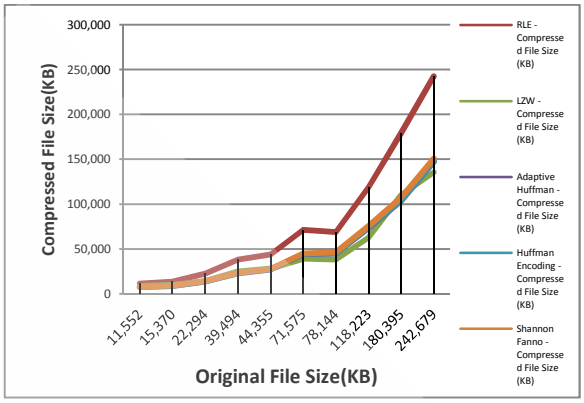
COMPRESSION ALGORITHM	TREND EQUATION TO APPROXIMATE SAVING PERCENTAGE	R^2 VALUE FOR EQUATION TO APPROXIMATE SAVING PERCENTAGE
Run Length Encoding	y = -0.467x + 5.750	0.094
LZW- Lempel-Ziv-Welch	y = 1.965x + 28.70	0.536
Adaptive Huffman	y = 0.081x + 39.68	0.009
Huffman Encoding	y = 0.391x + 36.8	0.160
Shanon Fano	y = 0.307x + 36.34	0.105

FINDING AND DISCUSSION

Adaptive Huffman Algorithm needs a relatively larger time period for processing, because the tree should be updated or recreated for both processes. The processing time is relatively small since a common tree for both the processes is used and is created only once. LZW approach works better as the size of the file grows up to a certain amount, because there are more chances to replace identified words by using a small index number.However, it can not be considered as the most efficient algorithm, because it can not be applied for all the cases.

The speed of the Run Length Encoding algorithm is high, but the saving percentage is low for all selected text files. Run Length Encoding algorithm is designed to identify repeating symbols and to replace by a set of characters which indicate the symbol and number of characters in the run. The saving percentage is low for selected text files as there is less number of repeating runs.

FIGURE–7: ORIGINAL FILE SIZE Vs COMPRESSED FILE SIZE FOR DIFFERENT ALGORITHM



Huffman Encoding and Shannon Fano algorithm show similar performances except in the compression times. Huffman Encoding algorithm needs more compression time than Shannon Fano algorithm, but the differences of the decompression times and saving percentages are extremely low. The code efficiency of Shannon Fano
Algorithm is a quite a low value compared to the Huffman encoding algorithm. So the generated code words using Shannon Fano algorithm have to be improved more than the code words of the Huffman Encoding. According to the differences of the compression time Shannon Fano algorithm is faster than the Huffman Encoding algorithm. So this factor can be used to determine the more efficient algorithm from these two.

CONCLUSION

The performances of the selected algorithms vary according to the measurements, while one algorithm gives a higher saving percentage it may need higher processing time. Therefore, all these factors are considered for comparison in order to identify the best solution. An algorithm which gives an acceptable saving percentage within a reasonable time period for compression and decompression is considered as the best algorithm. Based on the results tabulated in table-7 below, the saving percent parameter recognizes Adaptive Huffman as the best algorithm. But, on grounds of compression & decompression time, plus reasonably acceptable compression ratio makes Shanon Fano as the most suitable algorithm for file compression.

TABLE – 7 : CUMMULATIVE COMPARISON

Compression algorithm	*Compressed File Size-KB*	*Average Compression Ratio*	*Compression Time-ms*	*Decompression Time-ms*	*Saving percentage-%*
Run Length Encoding	*80954.3*	*0.98*	*9.35*	*10.54*	*3.18*
LZW	*47107.3*	*0.57*	*314.24*	*391.64*	*39.51*
Adaptive Huffman	*49236.1*	*0.60*	*348.47*	*438.45*	*40.13*
Huffman Encoding	*49683.5*	*0.60*	*145.10*	*200.25*	*38.95*
Shanon Fano	*50643.6*	*0.61*	*131.15*	*146.50*	*38.03*

FUTURE WORK

The Performed work can be extended to evaluate the performance of Lossfull compression algorithms, which are quite useful in image and video compression. Different Lossfull compression algorithms could be implemented and their performance parameters can be evaluated. This comparison could help to choose the most appropriate algorithm among the implemented ones.

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Techno stress in Gender perspective:
An Empirical Investigation

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ABSTRACT

One of the greatest challenges facing information technology (IT) managers is adapting to change. IT managers must cope with frequent changes while implementing new applications within their organizations. There are many indicators that this constant change is a challenge for IT professionals and managers. This paper reveals the gender differences in occupational stress among information technology (IT) personnel in India. Data was collected via a combination of mail surveys and semi-structured interviews. Results of the survey using analysis of variance show that ,female IT personnel reported significantly higher scores on sources of stress originating from "internal factors to the job", "managerial role", "relationships within office", "career and achievement", and "organizational environment", where as no significant gender difference was found for stress originating from "work-home conflict". The information inputted by this study will help and assist employees, especially female IT personnel, in their professional development and achievement and will help to root up the key issues which are generating stress to female personnel so as to strive higher satisfaction level and enhanced profitability.

KEYWORDS

ANOVA	Techno stress
Gender Differences	Information Technology

PREAMBLE

Various types of stress have been defined by researchers in the past. Especially, work related stress is considered as the major reason for being stressful, i.e. 'technostress'. This is a stress caused by the inability to cope with the new computer technology in a healthy manner. Craig Brod (1984) was the first to define technostress in a more formal manner. This study attempts to identify the factors responsible for gender specific technostress in organizations. The empirical study elaborates that to feel pressured to accept and use computers is anxiety.

This anxiety is expressed in many ways: irritability, headaches, nightmares, resistance to learning about the computer or outright rejection of the technology. Sometime, the anxiety turns into technophobia or computer phobia by which employees started to hesitate or avoid the use of technology (Rosen *et al.*, 1987). The early impact of technostress was felt by librarians when most of libraries across the world switched over to implementation of library software for the maintenance of libraries (Lalitha & Pangannaiah, 2006).

The concept of technostress can be understood in terms of Mooers' law which says that an information retrieval system will tend not to be used whenever it is more painful and troublesome for a customer to have information, than for him not to have it (Mooers, 1960). Information technology has revolutionized the working pattern of many organizations. Technostress affects work related culture, differently for males and females and it has brought its own problems to many employees of the organization.

Inspite of several training programs, employees in many organizations are not able to cope up with it and are unable to make themselves comfortable (Lalitha & Pangannaiah, 2006), especially in respect of gender related issues. There are three levels for expressing this technostress, as exhibited by three types of users:

(1) Anxious technophobe: exhibits the classic signs of an anxiety reaction when using technology: sweaty palms, heart palpitations, headaches.
(2) Cognitive technophobe: on the surface is calm and relaxed, but internally seethes with negative messages: "Everybody but me knows how to do this!" or "I'll hit the wrong button and mess this machine up!"
(3) Uncomfortable user: may be slightly anxious or use some negative statements, but generally not in need of one-on-one counseling (Rosen *et al.*, 1987).

This paper is focused on explaining the relationship in the contemporary business organizations mainly between IT personals and increased usage of information technology (IT) and how these relationships differ across gender. This paper will give insights on all critical factors generating stress and will empirically identify the occupational stress experienced by men and women in the IT profession in India.

This research paper is divided into five sections. Section 1 i.e. the present section gives the conceptual framework of technostress affecting IT personnel in Indian context. Section 2 gives a comprehensive review of existing literature which is the prime tool in identifying the research gap. Section 3 identifies the research objectives, data and methodology used. Section 4 presents the analysis and interpretation of the results and Section 5 entails the summary and conclusions of the research study.

REVIEW OF LITERATURE

The entry of women into traditionally male dominated fields, like, science, technology, engineering, and mathematics (STEM), has created interest among researchers and academicians because of gender differences in work related factors. Males and females are affected differently

by this modern culture (STEM), hence, the programs, policies, issues will be different for them keeping gender mainstreaming into account. These reframing and revisiting of programs which are gender based will us the holistic view of all stress generating factors. We have conclusive evidence about these differences among males and females like, in Jick & Mitz, 1985; Martocchio & O'Leary, 1989; Lee *et al.*, 1995; Fischer, A., 1998; Francis, B., 2000, Benemati & Lederer, 2001 and Straub & Watson, 2001. Studies based on technostress incorporated due to the rapid use of IT/ICTs are as follows: Craig Brod, 1984; Compeau & Higgins, 1995; Clark & Kslin, 1996; Arnetz & Wiholm, 1997; Thong & Yap, 2000 and Sethi *et al.*, 2004). Negatively influences on IT usability, (Burton-Jones & Hubona, 2005, and Ragu-Nathan *et al.,* 2008) which found that technostress is an important fallout of the inevitable use of ICTs in organization and illustrates the bivalent nature of their organizational influence. Some of the previous citations suggest that women lack inherent confidence in their competency to use and operate technical tools and machines (Campbell, 1990) and tend, more so than men, to perceive themselves as not being technologically literate (Geppert, L., 1995; Markert, L., 1981).

Most of the researcher confirmed that female personnel showed more stress than men (Burke & Belcourt, 1974; Davidson & Cooper, 1983; McDonald & Korabik, 1991; Nelson et. al., 1990; Smits *et al.*, 1993; Baroudi & Igbaria, 1995; Igbaria & Baroudi, 1995; Ranson & Reeves, 1996; Moore, 2000; Ahuja, 2002; Perrons, D., 2002; Sumner & Niederman, 2003; Harris & Wilkinson, 2004; Kaminski & Reilly, 2004). Studies which focused on the issue of stress and gender differences are such as, Igbaria & Chakarabrati, 1990; Rosen & Maguire, 1990; Gefen & Straub, 1997; Whitley, 1997; Venkatesh & Morris, 2000; Day & Livingstone, 2003; Matud, M., 2004, and Cameron B. & Butcher-Powell L., 2006 also reveals that female personnel would experience greater technostress as compare to their counterparts. While others insist that there are no differences between the sexes on the issue of technostress (Martocchio & O'Leary 1989, and Hamilton & Fagot, 1988). Whereas a single study showed that female IT professionals had less self perceived occupational stress than men i.e. Tung, 1980.

While there has been a paucity of research on occupational stress among IT personnel, anecdotal evidence in popular IT journals and magazines indicates that IT staff are experiencing rising levels of stress as a result of increasing user demands, advances in technology and growing use of IT in organizations. With the increasing number of women entering the workforce as well as the IT profession, attention on the occupational stress experienced by both men and women in the IT profession is warranted. In India less comprehensive and adequate work is available so as to bridge the gap this study is conducted. This will be a useful contribution especially to the organisations which have a diverse group and would need such type of information to draft-redraft, frame-reframe the strategies which are gender specific.

RESEARCH OBJECTIVES

The aim of this study is to examine if male and female IT personnel in India would differ in the types of occupational stress they experienced. Clearly, if gender differences do exist in occupational stress, there are implications for the design of intervention programmes intended to alleviate the harmful aspects of job stress. It is important for managers and organizations to understand how male and female IT personnel differ in their stress experiences, so that programmes can be tailored to meet their specific needs. Hence, the objective of this paper is to examine whether gender differences in job-related stress exists and to investigate the relationship that to what extant increased IT usage affects differently to the workforce engaged in IT sector.

DATA AND METHODOLOGY

1. DATA

The study of sample consisted of IT personnel in private sector organizations operating in India. This paper is focused on analysing the impact of increased technostress in organization on. To analyze this, questionnaire technique is used, taking inputs from the experts in this field. The interview sessions were also organized to supplement the information which is not elicited by the questionnaire with a further exercise of probing the respondents about their responses on the survey. Hence, the data was collected through a combination of mail surveys and semi-structured interviews. Total 275

questionnaires were distributed and all the responses which were received mainly from IT sector (145 respondents) or others areas (130 respondents). Among 275 participants, 52 per cent are male respondents (N = 143) and 48 per cent are female respondents (N = 132). Mean of age=32.065. The age group is distributed from 15 to 60 years. 58.2 % of the respondents are single (N = 160), while 41.8 % are married (N = 115).

2. METHODOLOGY

Sources of stress were assessed with 61 items adopted from Cooper *et al.*'s (1988) occupational stress indicator (OSI). The psychometric properties of the OSI have been established in previous studies. Items were scored from 1 (strongly agree that it is a source of stress) to 5 (strongly disagree) on a five-point **Likert Scale** response. The OSI consists of six subscales which tap six dimensions of stress: (1) Internal Factors to the job taps sources of stress originating from aspects of the job such as the amount and scope of tasks, number of hours worked and variety in the job. (2) Managerial Role measures how individuals perceive the expectations that others have of them. These expectations pertain to behaviors that managers are expected to exhibit when occupying their positions and performing routine job tasks. (3) Relationships within Office taps stress originating from personal contacts at work such as lack of social support from superiors, and office politics. (4) Career and Achievement is concerned with respondents' perceptions of their career development, promotion prospects and perceived threats of job obsolescence. (5) Work-Home Conflict measures stress originating from difficulties in coordinating family responsibilities with career demands. More specifically, this subscale measures whether non-work (home) stress has negative consequences on the individual's work and whether work demands have a negative impact on home life. (6) Organizational Environment measures stress originating from the bureaucratic nature of the organization, communication problems and morale in the organizations.

ANOVA

Data is processed using the most reliable method i.e. **analysis of variance (ANOVA)** and **t-test** (significant level of 0.01 & 0.001), which give us the appropriate results. In statistics, analysis of variance is a collection of statistical models, and their associated procedures, in which the observed variance in a particular variable is partitioned into components attributable to different sources of variation. In its simplest form ANOVA provides a statistical test of whether or not the means of several groups are all equal, and therefore generalizes t-test to more than two groups. Hence, ANOVAs are useful in comparing two, three or more means. Analysis of variance became widely known after being included in Fisher's 1925 book, Statistical Methods for Research Workers. *Assumptions* of ANOVA: The analysis of variance has been studied from several approaches, the most common of which use a linear model that relates the response to the treatments and blocks. Even if statistical model is non-linear, it can be approximated by a linear model for which an analysis of variance may be appropriate. One-way ANOVA is used to test for differences among two or more independent groups (means), e.g. different levels of urea application in a crop. Typically, however, the one-way ANOVA is used to test for differences among at least three groups, since the two-group case can be covered by a t-test. When there are only two means to compare, the t-test and the ANOVA F-test are equivalent; the relation between ANOVA and t is given by $F = t^2$. However, when applied to data from non-randomized experiments or observational studies, model-based analysis lacks the warrant of randomization. For observational data, the derivation of confidence intervals must use subjective models, as emphasized by Fisher, R. (1918). In practice, the estimates of treatment-effects from observational studies generally are often inconsistent. In practice, "statistical models" and observational data are useful for suggesting hypotheses that should be treated very cautiously by the public.

ANALYSIS AND INTERPRETATION

ANOVA was used to test whether gender differences in occupational stress exists. Three covariates – job title, marital status and age controlled. This is to ensure that any significant gender differences found in experienced stress are attributed to gender and not to any of the covariates. Age does not affect computer related stress, as this is opined in the following studies, i.e. Rosen & Maguire (1990) and Hudiberg & Necessary (1996). Results of ANOVA procedures are presented in Table 1 and show that only five sources of stress (Internal Factors to the Job; Managerial Role; Relationship within Office; Career and Achievement;

and Organizational Environment) remained statistically significant after the three covariates were introduced. Gender differences on stress originating from Work-Home Conflict failed to reach statistical significance when the above covariates were introduced; hence, it is excluded from the analysis. This result is rather surprising, since previous studies have revealed that women tend to be more likely to report stress originating from this interface than men and this result is corresponding to a study conducted by Lim V. & Teo T. (1996) which generates the same output that there is no effect on stress by work-home conflict. Age as a covariate is statistically significant for career and achievement, and work-home conflict.

Table 1: Results of ANOVA for Basic Sources of Technostress

Dependent Var./Sources	Gender (Main)	Job Title	Marital Status	Age	(For all)	Error	
	MS & F**	MS & F	MS & F	MS & F	Df	MS	df
Internal Factors to the Job	3.53 & 10.84	0.29 & 0.92	0.05 & 0.12	0.59 & 1.73	1	0.32	296
Managerial Role	3.68 & 8.36	0.06 & 0.11	0.19 & 0.46	0.08 & 0.06	1	0.43	296
Relationship within Office	3.74 & 9.68	0.47 & 1.12	0.34 & 0.83	0.09 & 0.09	1	0.38	296
Career and Achievement	5.61 & 10.39	0.08 & 1.37	0.03 & 0.04	2.87 & 5.28 *	1	0.54	296
Work-Home Conflict	1.64 & 2.53	0.07 & 0.08	1.37 & 2.17	2.86 & 4.37 *	1	0.65	296
Organizational Environment	5.67 & 12.99	0.49 & 1.07	0.95 & 2.15	0.11 & 0.19	1	0.43	296

*P<0.01
**P<0.001

#All Sources are Covariates accept Gender which is a Main Source.

FACTOR BASED ANALYSIS

To examine further gender differences in specific aspects of the job, t-test was also used for male and female IT personnel on various items in each dimension of the OSI. Items on which significant gender differences occur are reported in Table 2.

INTERNAL FACTORS TO THE JOB

Significantly higher scores on three questionnaire items relating to internal factors related to the job were reported for female IT personnel. These items are: "Pay Scale"; "Rapid advance in Technology" and "Variety of work". Results of t-tests on these items are shown in Table 2. Survey n interview data revealed by t-test exhibit that women are more likely than men to cite inadequate pay as a source of job stress with respect to "Pay Scale". This result is not surprising since if we see the equivalence of the job positions, the pay scales earned by females is far less as compare male IT personnel. Our survey results correspond with a study conducted on IT personnel in Singapore, Tan M. & Igbaria M. (1994) which found that on average, female IT personnel are paid $400 less than their male colleagues. Similar picture is seen in qualitative data also, which revealed that there is a constant fear in female IT personnel that they might fall behind in rapid technological advancements which proves to be a major source of stress among them. As more and more advances are there in technology, there is an increase in constant pressures, work demands, fear of male domination as far as knowledge and competence is concerned amongst female IT personals. This is perceived as a major source of stress to a greater extant than male IT personals. Female IT personnel also felt that there is not much variety in their jobs. Whereas, in case of their counterparts, they are offered more challenging and non-routine tasks which is a major factor contributing to their stress level. Some empirical studies confirmed this fact that women who occupied traditionally male jobs tended to report less

confidence in their ability to excel in their jobs compared with their male colleagues (Hollenbeck *et al.*, 1987). By virtue of this, supervisors become biased in their opinion and reconfirm the fact that female IT personnel are less knowledgeable and competent than their male counterparts.

MANAGERIAL ROLE

Female IT personnel scored significantly higher on "Potential of Taking Risk", "Fear of doing Mistake" and "Available/Visible for Organization" which is exhibited in Table 2. Female IT personnel were more likely to show less potential of taking risk as compare to their male counterparts and were more concerned about making mistakes in their jobs. In fact, several female IT personnel quoted "fear of doing mistakes" as stressful as confirmed by qualitative data too. Superiors take female IT personals granted for assigning them additional tasks in the organization and consider them always available/visible for organization all the time, which proves to be significant factor contributing towards stress in case of female personals. Negative responses are expressed by IT users towards enhanced IT innovations/ information technologies, because of the fear of doing some wrong actions while using computer by pressing a wrong key or other gazettes due to the indistinctness (Heinssen *et al.*, 1987; Gaudron & Vignoli, 2002, and Compeau *et al.*, 1999).

RELATIONSHIP WITHIN OFFICE

Significantly higher scores are revealed on this sub-scale of OSI: "Social Interactions", "To handle Office Politics" and "Superiors' Support" in case of women shown in table 2. Our interviews with female IT personnel reported a considerable amount of stress originating from interactions at the work place and handling with the office politics which is generally more pronounced and extensive in modern organizations. It also affects male IT personals but relatively female IT personals are more stressed as there are often excluded from different networks in the organizations. They are excluded in the IT profession as there has been a male domination traditionally and women entered this field late. So they are not a core part of "old boys" networks. These findings of our study are consistence with the results of the studies i.e. Nelson *et al.*, 1990 and Lim V. & Teo T. (1996). There is a high level of stress on account of lack of support and encouragement by their superiors in case of females which is completely reverse in case of males. The results of our study are in consistence with Loscosso & Spitze (1990) which reported that men have higher levels of support from their superiors.

CAREER AND ACHIEVEMENT

Female IT personals reported on account of career and achievement related factors, significantly higher scores on stress, i.e., "Under-Valued and Less Opportunities" and "Dominance for Male Personnel", shown in table 2. To supplement the empirical results the interviews were conducted in which it was found that female IT personnel even complained that they have limited access to training and upgrading opportunities. It leads to forming of a perception by female that they are under-valued, less important, leading to in frustration and stress. They also felt that they have to prove themselves on each step of the functioning of the organization; it is a major cause to feel them less efficient as compare to their male counterparts. All employees in the organization strive for admiration, support and encouragement from superiors which helped them advance in their careers with an exception in case of females, which need little degree of support structure. In IT industry there is a less parity of males and females experts and in major cases role models and careers mentors are not as readily available for female IT personnel, as compare to their male collogues. This may lead women to recognize the lack of opportunities in their workplace and eventually they have to adjust their aspiration levels downward to match the career paths or jobs that appear to be available to them (Freedman & Phillips, 1988). Perrons, D. (2002) opined that for male IT professionals, many factors within the workplace (dominant numbers of males, male-oriented metaphors in training material, and gender statistics at the executive level) already contribute to a sense of belonging within an IT organization.

ORGANIZATIONAL ENVIRONMENT

Significantly higher scores on three questionnaire items relating to organizational environment, such as, "Independence and Opportunities to Male", "To Deal with Delicate Situations" and "Increased Gender Discrimination", shown in table 2. Stress reactions are resulted in case of female IT

personnel, on account of more independence and opportunities to male personnel. Men are usually found commonly in jobs with higher autonomy, self-direction and freedom from close supervision was confirmed by many studies (Hollenbeck *et al.*, 1987 and Cameron B. & Butcher-Powell L., 2006). The reason for this why men prefer to seek such jobs, could be the possible nature of men who have more preference of autonomy and independence by virtue of which male IT personnel are likely to report less stress and they take this as an opportunity to work independently. Reverse reporting is addressed by female saying that there is always gender discrimination because of which they are granted less opportunities and challenges, less visibility, less financial assistance and inadequate resources to work , less supportive relationships with their supervisors (Igbaria & Wormley, 1992). While both male and female IT personnel cited this as a source of stress, female IT personnel complained that, under delicate or ambiguous situations, end users would often view them as being less competent than male IT personnel and would be reluctant to accept their recommendations regarding systems design which shows the shadowed role of females. All theses factors generates considerable amount of stress environment. So it is not astounding that female IT personnel reported significantly higher scores on stress arising from the organizational environment relatively to male IT personnel.

Table 2: Results of t-test on Individual Stress Topics B/w Male & Female IT Employees

Stress Topics	Mean (Male)	Mean (Female)	t-value	Significance
Internal Factors to the Job				
Pay Scale	3.42	3.71	-2.08	0.04
Rapid advance in Technology	3.61	3.95	-2.57	0.01
Variety of work	3.28	3.83	-4.02	0
Managerial Role				
Potential of Taking Risk	3.44	3.84	-2.72	0.01
Fear of doing Mistake	3.68	4.06	-3.23	0
Available/Visible for Organization	3.19	3.47	-2.18	0.03
Relationship within Office				
Social Interactions	3.15	3.52	-2.82	0.01
To handle Office Politics	3.14	3.41	-2.25	0.03
Superiors' Support	3.47	3.84	-2.81	0.01
Career and Achievement				
Under-Valued and Less Opportunities	3.52	3.94	-2.87	0.01
Dominance for Male Personnel	3.75	4.06	-2.49	0.02
Organizational Environment				
Independence and Opportunities to Male	3.65	4.06	-3.01	0
To Deal with Delicate Situations	3.68	3.94	-2.05	0.04
Increased Gender Discrimination	3.44	3.86	-3.024	0

CONCLUSION

The paper reveals gender differences in occupational stress among IT personnel in India. Results of ANOVA show that in five of the OSI dimensions, namely: internal factors to the job; managerial role; relationships within office; career and achievement; and organizational environment gender differences are there but in work-home conflict variable no gender difference is found for stress origination. Our results are consistent with the study conducted by Davidson & Cooper's (1983), which suggest that generation of stress among females is mainly because of discrimination factors which originate from corporate policies, work culture and male dominance. Another factor which contributes towards stress generation amongst female IT personnel is lack of confidence and fear of committing mistakes are mainly because of lack of

knowledge and skills in performing work. Such evidence has strong implications for management in terms of providing exhaustive training to female IT personnel to augment their skills and build up their confidence so that they able to handle with their job demands.

The scores on stress stemming from "to handle office politics", for female employees were higher than their male counterparts and the main reason which contributed to this is marginalization of women from the organizational political networks (Nelson *et al.*, 1990). To cope and to avoid this situation, the managers should guarantee that female IT personnel are well equipped with interpersonal skill to enable them to cope with office politics. The results show that female IT personnel, on stress originating from inadequate support from their superior and others at work, scored significantly higher than their male colleagues which was earlier male dominates. An assiduous effort is needed to ensure that female staff receives the support and guidance from their superiors as this is crucial for them to go ahead in her profession. Because of gender discrimination in organization that female IT personnel may constrain access to career opportunities for them and many hamper their career ambitions (Lim V. & Teo T., 1996). Same Sex Role Models and career mentor for female IT workforce is needed ensuring that male and female are both very important resource in organization and steps should be taken to assist employees, especially female IT personnel, in their professional development and career achievement. The significant insights are achieved by this empirical exploration which could be helpful for the management of IT industry.

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The Future of Online News Business: *Online news executive level and managerial level' perspective*

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ABSTRACT

This paper uses qualitative interviews with senior editors, managers and executive from online news businesses in Thailand. The article examines the inclination of online news organization and future of online news business. The results show that, news content of online news is the first thing that respondents are mentions. Most of the respondents (30) are attempt to develop the news content such as format of news by writing the clearly and easily format. The executive of online news predict the media convergence of online news that online news should be develops multimedia content base on texts, photographs, videos, and audios for attractive the audiences. Online news business depend on the devices for operate the newsroom. So the executive try to select the advance equipment and suitable for their organization. Moreover, they need the vision of executive and organization management in order to operate the business.

KEYWORDS

Online News	News	New Media
Future		Business

PREAMBLE

Media are major role in the social, cultural, economic, and political of countries around the world (Levinson, 1999). Since the 1960s, the internet has been steadily involved into the lifestyles and increase larger segments of the population (Comer, 2004). The inclination of internet usage will growing and change unlimited (Lee, 2008). In 2005 the internet users has 1018 millions, five years later the internet users has 1650 millions, and 2011 has 2,110 millions of internet users (from http://www.internetworldstats.com/emarketing.html). Sagan and Leighton (2010) predicted by 2013 there will be 2.2 billion internet users worldwide.

Thus, it is not surprising that, as part of this process, online news have grown in importance in the media systems of most countries (Mitchelstein & Boczkowski, 2009). The Pew Research Center's Internet & American Life Project surveyed internet user who gotten online news notable increases. In November 2008, 74% of internet users between 18-33 years old had gotten online news, and 76% of internet users between 34-45 years old had gotten online news. In May 2010, 76% of internet users between 18-33 years old had gotten online news, and 79% of internet users between 34-45 years old had gotten online news (http://www.pewinternet.org, 2010). In Thailand, National Electronics and Computer Technology Center surveyed in 2010, Thailand has internet users about 21 million users, most of the internet user access internet at home 54.3%, popular time between 8 pm-12pm 37.3%, internet user who send e-mail 27.2%, and gotten online news 14.1%, more than 2009 about 9.3% (http://www.nectec.or.th, 2010).

For this reason, both government and private organization are extensively using website as a key channel of communication with their various strategy for their organization, demonstrate company profile, public relation and interesting activities (Jo & Kim, 2003). Furthermore, the growth of internet affected the media businesses are increasing interest the internet due to the advantage of invest in online media and lower operating cost (Ahlers, 2006). The media organizations initiated the new way of connecting to audiences by provided their own website (Rogers, 1995). Because the website permits continuous updating content, convenience, continuously and low cost to operate (Cook, 2008). So, the television station, radio station, newspapers organization and cable news network take part in the online news services in order to coverage the information. To establish the online news department many company must established technology for computer system development, personnel skill and content (Albarren, 2002). This situation is very interesting to investigate for mass media changing and predict online news business. Consequently, this paper aims to explore and understand further of online news business. Trend of online news and method to improve online news organization are identified on this article.

LITERATURE REVIEW

This section is organized the prediction of online news business into two parts. The first part examine about the direction of online news business. The second parts show about the business model of online news.

THE DIRECTION OF ONLINE NEWS BUSINESS

Online news is different from other traditional news. Some of the special characteristics of online news are immediacy (Deuze, 2003; Massey & Levy,1999; Pavlik, 2000) and interactivity (Boczkowski, 2004; Cover2006; Deuze, 2005). Immediacy is important characteristics of online news. Immediacy means when information is received to news producers then pass on to the news consumers (Karlsson, 2007), the news cycle of online news become radically shortened (Merritt & McCombs, 2004). The interactivity characteristics can define as the degree to which the communication technology can create a mediated environment in communication such as one-to-one, one-to-many, many-to-many (Kiousis, 2002). Interactivity can breaking up the news producers receive relationship and placing more power in the hand of the audiences (Karlsson, 2008). The immediacy and interactive features make media organization extent the business to embrace the special characteristics of online news and challenge the direction of online news (Karlsson & Strömbäck, 2009).

Duangmanee, (1996) presented the direction of online news in the future and changing of information diffusion from this following: (1) *Interactive Feature*: the mass media take action in to two-way communication toward the website. The communication method also has real time information between webmaster and users. (2) *Easy*

to Search Information: the information superhighway gather enormous and variety information from over the world. This characteristic supported the convenience of online news users and can connect to other related news issues. The users can search the interested news in order to serve the uses and gratification. (3) *Online News Uses Internet and Multimedia*: Online news has increasing to use multimedia technology such as video, audio, graphic and picture for completely presentation.

The efficiency of multimedia features present on a websites is increasing user's perception of usability and positive attitudes toward the sites (Rajani & Rosenberg,1999). (4) *Consider to Download Speed*: The online news organization consider to users for download and search information. Although, they improve the technology and program computer for fasten and easy to use. (5) *International Publication*: the presentation of online news illustrate by Thai language but it difficult to publicize to other foreign website and hard to data transformation. (6) *More Online News Identity*: The online news organizations attempt to create separate information from traditional news and not duplicate the same content. (7) *More High Storage Information*: online news has become search engine and storage data devices such as e-library, electronics content, and news database for users. (8) *On-demand Information*: The webmaster of online news will keep the series of data and show only headline news. User can also call for news on-demand when desire. (9) Become marketing instrument: internet become increasing marketing instrument for business competition. The online news organization will improve the business strategy from this feature.

BUSINESS MODEL OF ONLINE NEWS

Business model of online news providers was employed over the past few years (Picard, 2000a). The early work was discussed varying approaches for business models in online news. But the meaning of business model is often confused with the same as strategy, such as marketing strategy, product strategy and management strategy (John, 1990). Strategies are the means used by organization to get their goals (Karlöf, 1989) and integrated set of commitment and actions design to exploit core competencies and gain the competitive advantages (Ireland, Hoskisson & Hitt, 2009).

Business models involves the conception of business operation and exchange activities and upon which the successful. Business models are described dimension of product, service, and including various business activities (Timmers, 1998). Consequently, the Business models of online news are concentrated on content (Picard, 2000b) and convergence (Palmer & Eriksen, 1999a).

Content: content or information is the major product of online news services especially online news (Santos, 2003). The news production process should consider by professional working on organization and high experience in making news (Tuchman, 1978). In this process are consist of many persons such as executive news content, editors and reporters. They are involves in development of news content (Palmer & Eriksen, 1999b). They also take part in selection or non-selection the news topics, interviewees relevant questions, language and tone of news (McQueen, 1998).

Although, several scholars are focus on news content selection and news staffs. On the other hand, the news business owner, chief of news, and editors are influences in news content. They can set the organization policy and toward to news content. Ownership of new media will consider to commercial pressure and profit. The profit is made by news outlet as a key factor in news production (Herman & Chomsky, 1988).

Additionally, format of online news is very significant. Its can demonstrates the quality of online news content. Numcharoen (n.d.) revealed most of the online news use news format similar with the newspapers news format. It has 3 structures (1) Headline (2) Lead and (3) Body. Online news generally cut "lead" from news structure. It will present only "headline" on home page. If users want to read some information, they can click to headline for link to the fine details. Some online news also created multimedia-text, video, and audio- and users can reiterate information that they want to receive. Attkisson and Vaughan (2003) revealed art of online news writing, he called "printcast" – news writing that combine outstanding characteristic of newspaper, radio and television script. News writing format in pyramid style is very appropriate for online news because the research found news users dislike reading news all of the web page. So selection, collection and summary only news climax are available for first section.

Likewise, other scholars are predicts news values are increase significant in online news organization. Montgomery (2007) stated news values combine with recency/timeliness, intensity/discontinuity, scale/scope, conflict, personalization, power, negativity, unexpectedness, consonance, proximity/cultural relevance, meaningfulness/unambiguity, composition/fit. Abels, White & Hahn (1997) demonstrated influential content can present by means of concise, easily to understand, readily to found, useful and current. Rich (2005) criticized writing for the internet is not the same as for broadcasting or print. But on most online news sites, the content mirrors the broadcasting or print copy. Hilliard (2004) presented that "a Web site is not normally 'scripted' in the sense of linear drama. The code that lays the content out into the browser is more integral to the user' experience than any linear storyboard, but this code is meaningless unless interpreted by the browser".

The task of developing "guideline" for the effect design and layout of text on the internet is as broad as the subject of computer/human interface itself. On the internet, the text is "content", the design and nature of which is determined by various factors, among these are: (1) intended audience (2) purpose of display (3) nature of Web project (4) nature of interface design paradigm (5) target technology base.

CONVERGENCE

New technologies permit the integration of other communications and allow readers, viewers, listeners more control and choice. It provides different methods for participating in and receiving communication. These changes and particularly the interactive possibilities that permit users to select materials and the forms of that material, create a significantly different relationship than exists between users and traditional media. But, given the existing technologies and the technologies currently in development for media and multimedia, that interactivity is fairly limited to making more effective use and personal choices based on already existing content forms or combinations of those forms (Kozma, 1991). This current is come from media convergence which is an ongoing process and included intersections of media technologies (Jenkins, 2001).

The internet is the product of convergence, which the researchers defined as the "coming together of all forms of mediate communication in an electronic digital from driven by computer" (Pavlik, 1996). Another researcher defined convergence as "merging of communication and information capability over an integrated electronic network" (Dizard, 2000). The internet is a convergence of enormous of characteristics of traditional media such as text, graphics, moving picture, and sound into unique medium (Medoff & Kaye, 2011).

Online news is the excellent example for media convergence. Online news should be develops multimedia content base on text, photographs, video, and audio (Kling, 1994; Lee, Stavrositu, Yang & Kim, 2004). Many features' presentation of content could affect to user's perception and increase attract to audiences (Chen & Corkindale, 2008). Influential content can present by means of concise, easily to understand, readily to found, useful and current (Abels, White & Hahn, 1997).

Although the convergence could be included inform of content and features but also demonstrated into media organization management. McQuail (2005) was revealed that the distinctive physical characteristics of media cease to matter, at least for purposes of production, processing and transmission. The contemporary trend of convergence has been used as an argument for media deregulations, the regulatory regimes are linked to specific technologies such as printing, broadcasting, and cable. The potential for convergence were present in from of single apparatus, and diversification seems to increase.

Not only the convergence of media features but also the other researchers, Briggs & Burke, (2009) defined the meaning of convergence is the process particularly coming together of the media industries and it also had broader users in relation to whole societies and cultures. Albarren, (2002) revealed the interesting in globalization that the media business had emerged the news online department in the media company. For instance, television business, newspapers business, radio business. They established the news online department for take advantages from new gateway to audiences. Every media organizations try to established the online news section for competitive opportunities with

others media organizations to present faster and deeper information. Because of news can provides information to improve learning, aids in awareness of our society norms, values and beliefs.

METHOD

In order to find the influential factors effect to trend of online news the researcher employed the qualitative approach because it take the researchers to closer and understand the perspective of directors and executive of online news about how to management, operation and factors that effect to the online media between the technology changing condition and globalization. Both the primary data and secondary data were used. The primary data were collected by techniques in-depth interviews by the researchers. The secondary data were searched from recent reports, dissertations, articles, journals, online resources, databases, and others, which were beneficial to informing the primary data collection process, and also used to interrogate the findings.

PARTICIPANTS AND SETTING

Non-probability sampling and purposive sampling are employed in order to finding the trends of online news. This study considered the background of participants such as age, level of education, working experienced, and organization. So, the researchers contacted to the 90 samples who work in the executive level and managerial level of online news organization which located in Bangkok capital city of Thailand. While 30 persons give permission to interview individually. The participants are based on 15 online news services included local online television (Channel 3, Channel 5, Channel 9, Channel 11, and Thai Public Broadcasting Services), online cable news (VoiceTV, Spring News, TNN), online newspapers (Thairath, Dailynews, Khaosod, Matichon, Prachachadthurakij, Thansettakij, and Nation).

RESEARCH FINDING

Thirty (30) respondents were interviewed face-to-face individually. All of them are base in Bangkok, Thailand. Most (24) of the respondents were male and 6 were female. The respondents were varies in age. They grouped in 2 groups: 20 were 30-40 years, and 10 were 41-50 years. A large number of respondents (21) were bachelor degree and only (9) respondents were master degree. The major of their educational qualification was mostly in the fields of journalism and mass communication. The thirty (30) respondents were work in the executive level and managerial level of online news business.

THE ONLINE NEWS CONTENT PREDICTION

The quality of content was the first thing mentioned during the interviews from respondents. They were pointed out the trend of online news content is very significant because the quality of information can attractive the audiences and remind the brand awareness of online news business. Most of the respondents (30) are attempt to develop the news content such as format of news by writing the clearly and easily format. The news format may be not have lead or heading news and will be demonstrate only body of news for inform the objective of the information. The online news producers will add the window for breaking news area in order to audiences can be finding this format when they access to online news. The online news producers also predict about the audiences will be desire to read only core concept of news and pass the other detail. Sometime audiences want to receive more frequently of news and news current in daily life to making decision. Consequently, (25) most of the news editors will be activate the online news reporters to send the faster news, videos and photos in order to increase the variety news on the websites.

The photos and videos are the second things that online news executives thinking of its. The online news organization will purchase the smart phone, blackberry, and I-pads for online reporters to send the photo and video. They mentions about the faster, more information, and competitive advantages between other online news organizations. The audiences will expect about the clip-video and photo which relate to each news. They will access to news with video and photo more than news with text only. The popularity of audiences are send the news with video and photo to their friends for widespread the interesting information.

Between interviews from the respondents the online news's executive (15) was disclosed the important issues about the trend of news content. They will

consider the news comment and news editorial more than current and routine news on website. The audiences will be access online news for reading the deeper information for planning in the future such as exchange rate, and gold price. Online news business will determine the news host or anchor, who create the news content such as the prolific writers, politician, celebrity and actors. These mentions for attractive the audiences and fan club in order to increase the rating and advertising.

Moreover, the online news business will take advantage from the citizen reporters, who are the primary news sources for each incident areas. They can reporting the news to the newsroom center immediately and understand the truly information. The online news producers will support the devices and budget for the citizen reporters for send the information, video, and photo.

The last issues which the respondent mentions are the interactivity of online news consumers. The online news business were also send the breaking news to audiences by e-mail and social network for inform important news. The sending news to audiences has many benefits because the business can investigate the target group, online news use rate, frequency, and cause to use. They can send the activity of company to audience and set the promotion campaign.

THE CONVERGENCE OF ONLINE NEWS

The convergence is the window of opportunity for media. Most of the online news expect from profitability and efficiency of organization. Thus the media company will attempt to seek the suitable method for changing in the future. 25 respondents of the executive of online news predict about the media convergence of online news that online news should be develops multimedia content base on texts, photographs, videos, and audios. The collections each features are support the interesting of online news to attractive the audiences. In the future, Web Television or WebTV is the first thing which the online news executives are interesting and desire to establish. It's a television on demand and audiences can access all the time for watching television by internet. The news organization also set it in the business strategy and planning to set the technology devices. For example, they will prepare the new application on computer to converge news content and motion pictures for present real-time on the website. Additionally, they established the news online department for take advantages from new gateway to audiences. Every media organizations try to established the online news section for competitive opportunities with others media organizations to present faster and deeper information. Moreover, they will cooperate with foreign company and increase long-term investment.

THE ONLINE NEWS BUSINESS IN THE FUTURE

Online news business in the future seemed to be the challenge and difficult to prediction. Most of the participants (30) was exposed the technology changing the way of online news. Online news depend on the devices for operate the newsroom. So the executive try to select the advance equipment and suitable for their organization such as the large server for internet, edit room, control room, on-air section and newsroom. Moreover, they need the vision of executive and organization management.

Interestingly, every news organization has improved the news instruments, news workers, law and regulation of organization following the technology changing. Online news department was established in news organization. The suitable content and website for audiences was created in online news department. The organization will pay attention to send the workers to learn the modern technology and news devices. The workers who used to learn the new innovation, they must teach and recommend the novices. Sometime they involved in seminar and conference with other organization for exchange the opinion.

Audiences are now generating their own content and displaying on the internet to potentially millions of users. People from all over the world have uploaded millions of videos and post comment on online news. The phenomenon has ubiquitous on cyber world among young people who enjoy short clips of videos about news content, academic until miscellaneous. Some people can edit video and audio on their laptops and produce television and video program in their home.

The online news has made social network on Facebook to increase the brand awareness. The online news business take advantages from the interactivity by set the online community and seek

new target group. Sometime the webmaster of online news will send the promotion to audiences for increase the frequency access.

CONCLUSIONS & RECOMMENDATIONS

The goal of this study was to investigate the online news in the future. The researcher was evaluated the direction of online news business, and the business model of online news concentrate on content and convergence. The online news prediction came from executive level and managerial level of online news such as online news executive, manager, and editors. The dimension of executive news organization can indicate the way to improve the organization. Most of the news company attempt to adjust the news content, news devices and news worker for next innovation. They should focus on the new technology devices because the advance innovation changing all the time. Social network will be more power in this era. The news audiences uses social network for spread the news to other person. Furthermore, the vision of online news executive is very important for global communication society. The business strategy and media management are mentions for online news organization.

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The Impact of various Dimensions of SCM Practices in Indian Oil and Gas Sector

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ABSTRACT

The Indian oil and gas sector is one of the core industries in India and has very significant forward linkages with the entire economy. India has been growing at a decent rate annually and is omitted to accelerate the growth momentum in the years to come. The paper investigates the complex relationships between the six dimensions of supply chain management practices (strategic relationship, customer's relationship, information sharing, postponement, delivery dependability, time to market) in oil and gas sector. An empirical study of 309 respondents in oil and gas industries were taken for empirical study, SPSS- 16 software were used for analysis, out of six factors three factors were selected through factor analysis and further correlation was done among the selected variables, reveals that strategic relationship, customer relationship and information is positively correlated with Supply chain management(SCM) practices. The oil and gas sector in India presents a significant opportunity for investors and is exhibited to demonstrate robust growth in line with the growth of the Indian economy. The lack of available supplies has so far hindered the growth of this segment.

KEYWORDS

	Supply chain		**Oil sector**
	Gas sector		**Flexibility**
	Customer Relationship		**Information Sharing**
	Strategic Relationship		**SCM**

PREAMBLE

Supply chain management can be defined as the configuration, coordination and continuous improvement of an organized set of operations. Its goal is to provide maximum customer service at the lowest cost possible, where a customer is anyone who uses the output of a process. Since the goal of a company is to maximize profits, it must weigh the benefits versus the costs of its decisions along the supply. Very few industries can benefit more from maximizing supply chain efficiencies than the oil and gas companies. As competition in the 1990s intensified and markets became global, so did the challenges associated with getting a product and service to the right place at the right time at the lowest cost. Organizations began to realize that it is not enough to improve efficiencies within an organization, but their whole supply chain has to be made competitive. The understanding and practicing of supply chain management (SCM) has become an essential prerequisite for staying competitive in the global race and for enhancing profitability. The study is concentrated only on the above mentioned factors and their relationships.SCM practices are defined as the set of activities undertaken by an organization to promote effective management of its supply chain (Suhong Li, 2004)

OIL SECTOR IN INDIA: AN OVERVIEW

A typical oil industry supply chain includes exploration of new petroleum (crude oil) reservoirs, drilling of crude wells, crude extraction at onshore and offshore platforms, its transport to the refineries, the refining of the crude oil (raw material) in the refineries in order to produce the final products (petroleum derivatives), such as gasoline and diesel, the transport of those products to distribution terminals where they are dispatched to distribution companies, and finally the delivery of the derivatives to the final customers (e.g. gas stations). There are different types of crude, with distinct qualities.

Each of them has a specific production profile, yielding definite proportions of each derivative product. As to the transport of crude and its derivatives, it is carried out by ships, trains, trucks, and mainly by-pipelines. Oil supply chain management is intrinsically associated with integrated planning. First, it is concerned with functional integration of acquisition of raw material (crude oil), manufacturing (refining), transportation, and warehousing activities . In the oil industry supply chain, an important component in supply chain analysis is the choice of performance measures, which are used to determine the efficiency of a system, or to compare alternative ones. The literature categorizes these measures as either qualitative or quantitative. In general, quantitative measures are related to monetary values, as cost and profit, whereas qualitative ones are based on customer satisfaction.

GAS SECTOR IN INDIA: AN OVER VIEW

Natural Gas has emerged as one of the most preferred fuel due to its environmentally benign nature, greater efficiency and cost effectiveness. At present, the main producers of natural gas are Oil and Natural Gas Corporation Limited (ONGC), Oil India Limited (OIL) and the Joint Ventures of Panna Mukta & Tapti, and Ravva. Out of the total production of around 96 MMSCMD, after internal consumption, LPG extraction and unavoidable flaring, around 73 MMSCMD is available for sale to various consumers. In addition, around 7 MMTPA of re-gasified LNG (about 23 MMSCMD) is also being supplied to domestic consumers. GAIL (India) Limited, is India's flagship Natural Gas company, integrating all aspects of the Natural Gas value chain (including Exploration & Production, Processing, Transmission, Distribution and Marketing) and its related services (Source-infraline).

The Government has introduced attractive fiscal terms and conditions in the oil and gas exploration policy. This has facilitated the major gas discovery by Reliance; however, apart from the discovery by Reliance, wells have been drilled by other players but without major success. Apart from the gas find by Reliance, the gas reserves being discovered are small in size and require advanced technologies and attractive fiscal terms & conditions to be commercially viable. Gas produced by ONGC and OIL from the existing nominated blocks was earlier sold at administered prices fixed by the Government. As against a total allocation of 150 MMSCMD of gas, actual supply under APM is presently around 53 MMSCMD.

The total estimated gas supplies in India based on the projection by Working Group of XI 5 year plan is as under: Table 1

Sources	2008-09	2011-12
ONGC + OIL	57.19	51.08
Pvt. / JVs (As per DGH)	22.21	57.22
LNG Supply	33.6	83.13
Additional Domestic Gas Anticipated	40.0	90
Import through Trans Border Route	0	0
Projected Domestic Supply - Conservative	153.00	281.43
Additional Gas Anticipated(GSPC)	-	6.5
Total Projected Supply - Optimistic	153.00	287.93
DEMAND SUPPLY GAP	43.0	-8.0

(Source:British Gas 2009-10)

DEMAND

Natural gas is not a renewable source, since there is a fixed volume amount of it trapped in the Earth. The price of natural gas is quite comparable with the prices of alternative fuels/raw materials (based on the thermal equivalence of substitute fuels).

This factor, along with other advantages, has led to a sharp increase in the demand for natural gas. The demand for natural gas (allocated so far) in India, at about 120 mmscmd, is over one-and-a-half times the current gas supply of about 70 mmscmd.

The demand for natural gas is from industries like power, fertiliser, sponge iron and glass/ceramics. However, currently the main supplies are made to the fertilizer and power sectors because of the shortage of gas. Further, according to the India Hydrocarbon Vision 2025 Report, the demand for natural gas is expected to show a sharp rise in future because of its environment friendliness and cost competitiveness.

The total estimated gas demand outlook in India based on the projection by Working Group of XI 5 year plan is as under: Table 2

Sector	2008-09	2011-12
Fertilizers	42.89	76.26
Power	91.2	126.57
City Gas	12.93	15.83
Industrial	16.05	19.66
Petrochemical / Refineries / Internal Consumption	27.15	33.25
Sponge Iron / Steel	6.42	7.86
Total	196.64	279.43

(Source:British Gas 2009-10)

SUPPLY CHAIN MANAGEMENT IN OIL & GAS SECTOR

The supply chain in oil and gas consists of operators (oil & gas companies), main contractors, subcontractors and suppliers. Procurement is performed during the development and abandonment of oil and gas fields and during operation of fields (production). During development, the majority of procurement is structured as project execution tasks (Chima C.M, 2007). oil/gas companies are big and getting even bigger – mostly through mergers; oil/gas prices fluctuate greatly; and oil/gas companies are subject to various political pressures (Shapiro JF, 2006.). Large operators interface with governmental entities worldwide and some are closely linked to governments themselves. Main contractors are often traditional engineering/construction/service companies, some of which have been nurtured under years of protective development policies.

The structure of the paper is a follows, in section 2 research methodology which is followed by hypothesis and later in section 4 model identification which is followed by the correlation among variables and in later section results and conclusion. A detailed correlation matrix is given in appendix A and the results of factor analysis are also provided in the same appendix .

RESEARCH MODEL AND HYPOTHESIS

Figure1 displays the conceptual basic relationship model between supply chain management (SCM) practices. The conceptual model, as shown in Figure 1, shows the expected links between the dimensions of supply chain management (SCM) practices.

SUPPLY CHAIN MANAGEMENT PRACTICES

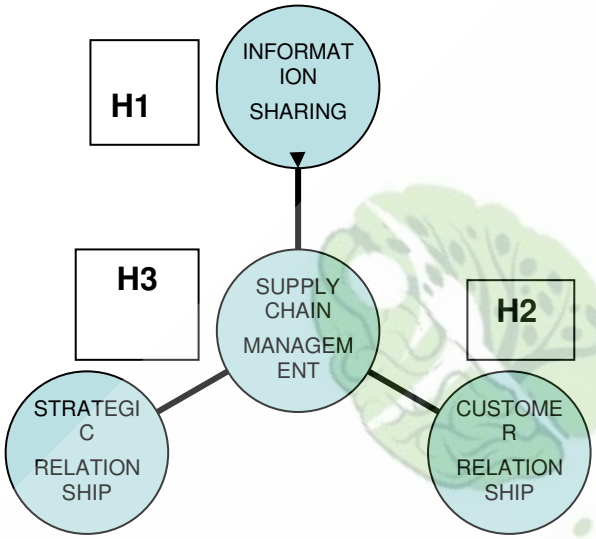


Figure1: Basic Supply chain practices model (Haleem-2009)

H1: There is a positive association between information sharing and supply chain management practices

H2: There is a positive association between Strategic relationship and supply chain management practices

H3: There is a positive association between customer's relationship and supply chain management practices

RESEARCH METHODOLOGY

This study focuses upon 309 respondents in oil and gas sector and the study is entirely based on NCR region. The industries in these two sectors frequently introduce new products and continuously develop new technologies. Therefore, these two sub-sectors are primarily chosen for this study. A questionnaire was designed to measure the constructs in the model.

QUESTIONNAIRE RESPONSE RATE

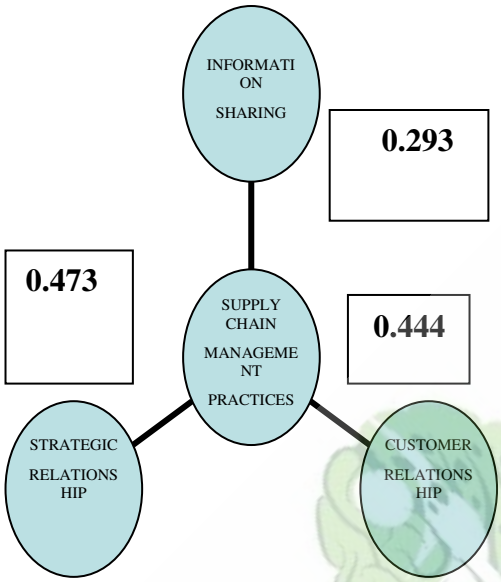
The research objectives were translated into hypotheses, which were then defined as relationships of guiding variables. The guiding variables were further divided into micro variables and translated into specific questions or statements. Rensis Likert has developed Likert type scale where the respondents are asked to express their position on a scale, which has two extremes. Here 5 point Likert scale (1-5) is used starting from "very low to very high" as two extremes of continua, which have been divided in five intervals for measurement. In addition, the approximations were used in terms of numbers and/or percentages, obtained for measurement. To convey the intent quickly, question description has been kept short and precise.

The questionnaire was sent to the oil and gas sector within the NCR region. The survey was done through sending the emails ,personal interviews

Non Response bias: Table 3

Designation	No. of respondents Received
General Manager	8 % (25 responses)
Deputy General Manager	4% (15 responses)
Chief General Manager	10% (28 responses)
Senior Manager	24% (75 responses)
Manager	11% (31 responses)
Deputy Manager	18% (55 responses)
Senior officer	12% (35 responses)
Executive Trainee	3% (10 responses)
Others	8% (25 responses)
No information	3% (10 responses)

MODEL IDENTIFICATION



Validated Model for Relationship of Supply Chain Practices (Beta Values).

	INFOSHAR	CUSTRLSH	STRAGLSH	SCMPRT
INFOSHAR	1			
CUSTRLSH	.280**	1		
STRAGRLSH	.379**	.328**	1	
SCMPRT	.293**	.444**	.473**	1

Table:4 Correlation among Selected Variables

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

RESULTS ANALYSIS

The respondents were asked to indicate the importance of various items, which measured different dimensions of supply chain management(SCM) practices in their industry. The results in Table 4 indicates that both Strategic relationship and customers relationship are positively correlated with supply chain management(SCM) practices whereas information sharing is less positively related in supply chain management(SCM) practices as compared to strategic and customer relationship. The results show that the strategic relationship is most important factor in SCM practices in oil and gas sector which effects the supply, so the industry always focus on long term relationship supply as these are the continuous line production and after that the next important aspect is customers relationship which is again strongly related with SCM practices as the variation between the two is less, both are the major factors of SCM practices.

CONCLUSION

Strategic relationship and customer relationship are vital and play crucial role in SCM practice. The validated model so developed shows the relationships among the selected variables. A relationship between information sharing, strategic relationship approach and customer relationship was developed in SCM practices has been observed. From the model analysis we have not observed any significant direct relationship between six dimensions of SCM practices .Strategic relationship and Customer relation has been observed to be directly linked with SCM practices and not by any other variable.

This observation has emerged from the statistical analysis of the data collected from questionnaire based survey. Information sharing are directly affected by SCM practice. In the perception survey research, the variables are correlated to each other at 99% and 95% confidence levels. SCM practices have emerged as the most influential variable in the perception of the respondents. Organizations need to involve users in the initial stages in order to have their participation and there by commitment. This may help in SCM practice and in maximizing output from the process. The results show that both strategic and customer relationship can undertake effective SCM practices . The study is only a modest attempt to bring out the significant variables and factors affecting the SCM practices. These findings need to be applied in the industry and based on the learning; it can be further refined, evolved and reapplied.

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APPENDIX A- CORRELATION MATRIX Table 5

		STRATRELNP	CUSTRENLP	INFORMSHAR	POSTPONMT	DELEVRYDEP	TIMEMARKT
Correlation	STRATRELNP	1.000	.328	.070	.004	.026	.038
	CUSTRENLP	.328	1.000	.280	-.032	-.011	.031
	INFORMSHAR	.379	.280	1.000	.203	.087	.089
	POSTPONMT	.004	-.032	.203	1.000	.299	.160
	DELEVRYDEP	.026	-.011	.087	.299	1.000	.404
	TIMEMARKT	.038	.031	.089	.160	.404	1.000
Sig. (1-tailed)	STRATRELNP		.000	.109	.474	.323	.254
	CUSTRENLP	.000		.000	.287	.425	.296
	INFORMSHAR	.109	.000		.000	.063	.059
	POSTPONMT	.474	.287	.000		.000	.002
	DELEVRYDEP	.323	.425	.063	.000		.000
	TIMEMARKT	.254	.296	.059	.002	.000	

EXTRACTION METHOD: PRINCIPAL COMPONENT ANALYSIS.TABLE 6

	Component	
	1	2
STRATRELNP	.271	.629
CUSTRENLP	.324	.767
INFORMSHAR	.505	.362
POSTPONMT	.590	-.263
DELEVRYDEP	.703	-.377
TIMEMARKT	.644	-.283

Time Optimization for Real Time Traffic Signal Control System Using Genetic Algorithm

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ABSTRACT

In this paper, a "real-time" traffic signal control strategy is provided using genetic algorithms to provide near optimal traffic performance for intersections.

Real-time traffic signal control is an integral part of the urban traffic control system and providing effective real-time traffic signal control for a large complex traffic network is an extremely challenging distributed control problem. The developed "intelligent" system makes "real-time" decisions as to whether to extend green time for a set of signals.

The model is developed using genetic algorithm implemented in MATLAB. A traffic emulator is developed in JAVA to represent dynamic traffic conditions. The emulator conducts surveillance after fixed interval of time and sends the data to genetic algorithm, which then provides optimum green time extensions and optimizes signal timings in real time.

The optimization parameters are - total number of vehicles in a road and importance of the road in the intersection. In the end, by comparing the experimental result obtained by the fixed time and real time based traffic systems which improves significant performance for intersections, we confirmed the efficiency of our intelligent real time based control system.

KEYWORDS

Intelligent System	Traffic Emulator	Genetic Algorithm

PREAMBLE

The increase in urbanization and traffic congestion creates an urgent need to operate our transportation systems with maximum efficiency. One of the most cost-effective measures for dealing with this problem is traffic signal control.

Traffic Signal Control is a system for synchronizing the timing of any number of traffic signals in an area, with the aim of reducing stops and overall vehicle delay or maximizing throughput. It provides control, surveillance, and maintenance functions i.e. control of traffic by adjusting and coordinating traffic signals at intersections, surveillance by monitoring traffic conditions with vehicle detectors and cameras; and maintenance of equipment by monitoring for equipment failures. These functions allow a traffic management agency to service traffic demand, share traffic status with other agencies and operate and maintain the traffic signal control system.

Traffic signal control varies in complexity, from simple systems that use historical data to set fixed timing plans, to adaptive signal control, which optimizes timing plans for a network of signals according to traffic conditions in real time [1].

Although traffic signal control has been studied for many years, it remains an active research topic. A summary of recent advancements is provided in [2].Kirschfink et al. introduce intelligent models to catch as much as possible from vehicle traffic features [3]. Papageorgiou et al. give an overview of the main traffic control problems and their approach methods [4]. Some studied the reserve capacity of a road network under fixed time traffic control [5].

Hong & Lo [6] developed a methodology to analyze the Phase Clearance Reliability (PCR) of a signalized intersection and describe the performance of traffic signal.

Han & Zhang [7] proposed an approach to detect and count vehicles at an intersection in real- time to increase efficiency on traffic control.

In this paper, we developed emulator for representation of traffic conditions at an isolated intersection with the following silent features: Graphical User interface (GUI) developed in JAVA, random generation of vehicles, random vehicular direction, collision avoidance, and traffic signals with fixed phase sequence, surveillance of traffic conditions(stopped vehicles) at specified intervals, traffic signals with minimum green length duration. Genetic algorithm is used for traffic signal timing optimization.

Factors considered for genetic optimization are weights allotted to each road (depending upon their usage and traffic capacity etc), fixed maximum and minimum green timings, fixed cycle timings and total stopped at each incoming lane.

The Figure 1 shows the traffic flow behavior in the network depends on control inputs that are directly related to corresponding control devices i.e. traffic lights, variable message signs, and disturbances etc.

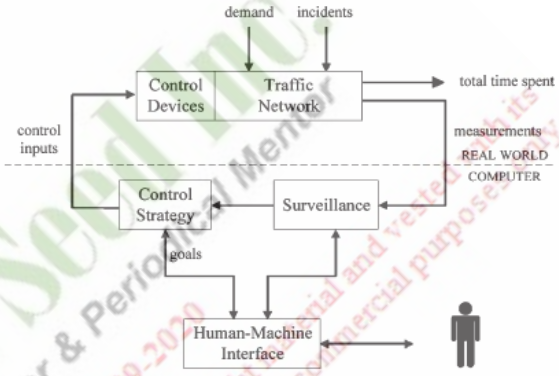

Fig:1: Modeled Diagram of Traffic control System

The function of the control strategy module is to specify the control inputs in real time based on available measurements (e.g. from loop detectors or traffic cameras). Surveillance system provides real time status to the control algorithm which decides control inputs. A human interface is required to monitor the control strategy [8].

MODELING TRAFFIC EMULATOR

The traffic emulator is modeled to implement a fully concurrent emulator of cars and traffic signal lights interaction at an intersection. Traffic emulator consists of a four legged isolated inter section with corresponding four traffic lights for controlling straight and right turn traffic, while the left turn is free. The car generation speed and car speed can be changed as per desired.

COLLISION AVOIDANCE

Collision avoidance is implemented by the concept of locks. A lock is a fixed sized space that can be occupied by a car. A car can occupy a lock ahead of it only if it's unoccupied and the signal is green if it is the first car in the lane.

Similarly, while turning, before moving, a car must grab all lock objects it needs, otherwise, it will be blocked. The traffic emulator implements fixed cycle length and fixed phase sequence to ensure that all the roads gets their turn and no road is neglected for a very long time.

The emulator conducts the surveillance and sends the data to the control algorithm for evaluation. Traffic light management at an intersection is an extremely challenging and complex. Normal traffic behavior even though seems pretty normal, is however extremely difficult to predict & simulate in an artificial environment.

The number of different factors affecting the sequence and duration of traffic light signals can be very wide. Several assumptions had to be made, in order to reduce the overall Complexity. The various assumptions made are as follows:

(i) The intersection is assumed to be relatively "busy" and under-saturated with significant demand variations in all the approaches.

(ii) The intersection is assumed to be four-phased with a phase for each approach.

(iii) The phase sequence does not change from cycle to cycle.

(iv) The cycle time remains fixed.

(v) All cars are assumed to have same speed.

(vi) Cars can take a free left turn provided they do not have a vehicle in front. There are no unnatural traffic situations such as accidents, disruptions etc.

MODELING TRAFFIC CONTROL PROBLEM

The current Traffic Management system is designed scientifically but usually fails to provide an optimum throughput of vehicles through an intersection. Providing effective real time traffic signal control for a large complex traffic network is an extremely challenging distributed control problem.

We aim to develop an efficient traffic adaptive control strategy that identifies the real time traffic scenario in small steps (surveillance interval), and gives appropriate green time extensions to minimize a fitness function consisting of linear combination of performance indexes of all the four lanes .

Fitness function, f = P.I.1 + P.I.2 + P.I.3 + P.I.4

The Performance Index (P.I.) for each road depends upon

weight of the each road (i.e. capacity of the road and priority of the road assumed same), the total number of vehicles on the road given by S. S = S1 + S2 + S3 +S4 Performance Index (P.I.i) = Wi * Si /GTi i=1,2,3,4; where Wi is weight allotted to road i respectively; Si is number of vehicles at road i respectively; GTi is sum of minimum green time (Gmin) and green extension time (g).

PROPOSED SOLUTION TO THE PROBLEM

USING GENETIC ALGORITHM

A Genetic algorithm (or GA) is a search technique used in computing to find true or approximate solutions to optimization and search problems. MATLAB Genetic algorithm application interfaces are used to implement the algorithm.

The Genetic algorithm is constrained with a fixed cycle length of 70sec and green extension times (g) with the bounds of 0 to 5 seconds. g1 + g2 + g3 + g4 – 10; where (gi represents green extension time, i=1, 2, 3, 4) and 10 is total extension time of the entire signal.

Gmin = 15sec (Fixed green time for each road).

G.T. = Gmin + x (Green time allotted to the road).

The surveillance data from the emulator is sent to GA. They produce a set of green time extensions, which minimizes the fitness function, simultaneously satisfying the constraints.

The Figure 2 illustrates the process schematically as follows:

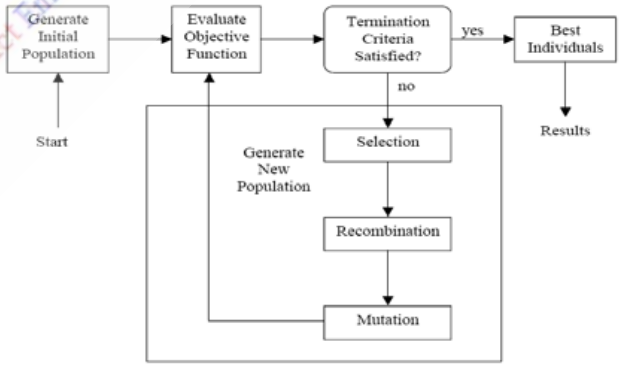

Fig:2: implemented Genetic Algorithm

(1) An emulator is developed which shows dynamic conditions of traffic on an isolated four-way intersection.

Code for surveillance is written which gives the total number of cars on each road in the intersection.

(2) After each predefined surveillance interval, genetic algorithm is executed with the input as total number of cars on each road as determined by S.

(3) The Genetic algorithm (GA) executed as to obtain the best possible solution. The steps of algorithm are as:

(i) Generate the random population (i.e. green time extension) which is selected by a random function within the specified range (0-5).

(ii) Evaluate objective function (i.e. fitness function used). The fitness function is to be minimized (i.e. it gives small values for better generations) .

(iii) Check, if termination criteria is satisfied (i.e. either the predefined maximum number of generation have reached or fitness function is not satisfied, the performance is tested with both 100 and 6 generation.

A small improvement in case of 100 generation is observed but to increase the speed of algorithm, 6 generations have used). (iv) If the termination criteria are not satisfied; selection is performed from the given population to obtain fitter parents, which can lead to fitter sons.

(v) These parents, thus selected are mated to produce fitter children and this phenomenon is called crossover or recombination.

(vi) Some mutation is performed (i.e. some bits of children are altered from the above result). This emulates the real life as children may have some traits different but the chances are generally kept very low.

(vii) After mutation we have a new set of generation, now go back to step (ii).

(viii) If the termination criteria in step (iii) are satisfied, get the solution (i.e. the current generation).

(4) The result is received from GA is the green extension times for all the four roads. These extension times are added with predefined fixed green times and applied to the emulator.

SIMULATION RESULT

In this section, we compare the results obtained by proposed real time based system with traditional fixed time system. Both the systems are tested on the setting of fixed green signal time of 15 sec. , with a green extension of up to 5 sec. in case of real time based system.

The comparison parameter considered is the total number of exit vehicles at a fixed car generation speed and car speed settings for fixed intervals of times. The results obtained are as follows: for car generation speed of 200 ms and car speed of 200 ms is given in Table I.

The sample results shown in Table I gives the output of 573 vehicles and 662 vehicles in the case of fixed time based system and real time based system respectively thus showing a significant performance increase of 21.9 % in case of real time based system.

CONCLUSION

In this paper, an “intelligent” isolated intersection control system was developed. The developed intelligent” system makes “real time” decisions as to whether to extend (and how much) current green time. The system applications appear to be very promising. The system shows significant performance improvement compared to fixed time based system within experimental limits (computation power, random path selection, emulator settings) under the given assumptions. The model developed is based on the genetic algorithm, which optimizes traffic signal timings in real time and provides a set of optimum green time extension for all the four phases depending upon the surveyed traffic conditions.

Time (in min.)	Out Traffic (Fixed Time System)	Out Traffic (Real -Time Based System)
1	30	37
2	75	73
3	120	141
4	158	181
5	190	230
	Total: 573	Total: 662

Table: 1: Comparison Between Real Time & Fixed Time Systems

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Bancassurance Technology Road Ahead: Indian Perspective

ABSTRACT

Bancassurance is a system in which a bank has a corporate agency agreement with one insurance company to sell its product (life and general insurance) and by selling insurance products bank earns a revenue stream apart from interest. Bancassurance in India has taken a flying start. Little has been studied of this phenomenon in emerging markets. And Bird's eye overview with the economies of scale and scope, has also been put up. This study can give a picture of the parties how could be a feasible task to make lucrative business with the pace of emerging scenario.

KEYWORDS

Bancassurance	RBI	IRDA

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PREAMBLE

The theories of banking and insurance contain a number of similarities that contradict the traditional distinctions between the two businesses. Lewis (1990) explained that banks take advantage of economies of scale in portfolio management, which arises from the law of large numbers. Insurance economics rely on the law of large numbers, which states that the expected loss distribution approaches the true loss distribution as the sample grows. This enables insurance companies to pool individual reserves to protect against adversity. Similarly, banks provide the insurance of financial security for their clients; the insurance premium is reflected in service charges and the spread between interest rates on loans and deposits. Levy-Lang (1990), argued that insurance companies undertake some form of fund management (a banking attribute) through the investment of their technical reserves. This function brings them closer to banking.

Gumbel (1990) summarized the affinities of banking and insurance as follows: Both operate with reserves, rely on the law of large numbers, use economies of scale, and have expertise in administration and money management. They create liquidity and assume a risk-spreading function through reinsurance or refinancing. Endowment policies have been a long-term financial tool to meet financial objectives that were the domain of banks. In the UK, 83% of mortgages were financed by endowment policies in 1988. In France, most insurers experienced growth through capitalization products, originally single-premium policies, which are very similar to time deposits of banks. Although these products are classified as insurance, they were in direct competition with traditional banking products. As insurers developed more and more products with shorter maturities, savings became a focus of competition for banks and insurance companies. Another similarity between banks and insurance is that they often relate to the same purchase.

They are in a sense complementary, if not similar. Banks require their borrowers to insure against various risks, including death, disability, unemployment and property damages. These guarantees become an inherent component of the loan that is granted. Both banking and insurance products provide means of savings and insurance. In general, banks and insurers have more in common than their separation may suggest. The traditional view is that banks handle funds and insurers take risks. However, funds management and risk-bearing are clearly features of both types of activities. Banking and insurance rely on the pooling of resources to protect financial security (banking) or protect against adverse events (insurance). In practice, some insurance products are really savings vehicles. This is particularly evident in India, where a survey conducted in 2008, revealed that Indians consider life insurance as the most popular vehicle for long-term savings. Banking and insurance are often complimentary, as is the case for mortgages that require credit and property insurance. Bancassurance therefore is a natural outlet for both businesses to diversify.

The trend towards bancassurance or Allfinanz refers primarily to banks entering the insurance sector by offering insurance products to their retail customers. The definitions of bancassurance concept focus on distribution and cross-selling. A broader definition of bancassurance was provided by Swiss Re (1992): "Bancassurance can be described as a strategy adopted by banks or insurance companies aiming to operate the financial services market in a more or less integrated manner. In practice, the term 'bancassurance' is consistently used to describe a new strategic orientation of financial institutions in private customer business". Morgan (1994), argued that a proper approach is one whereby financial institutions can be placed along a continuum denoting the degree to which an insurance company and a deposit-taking institution co-exist within a common structure (holding company), but also integrate their strategies. Morgan's continuum is shown in Figure1 from the deposit-taker's point of view. Vaquin (1990) described the development of bancassurance along two dimensions: the degree of integration and product profile (life or general insurance).

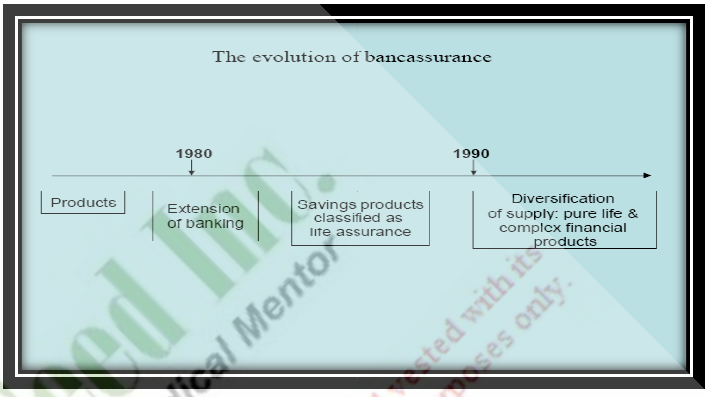
The concept of bancassurance differs from one observer to another. This is because the integration of insurance and banking can vary from a simple distribution agreement to some type of capital link between the two activities.

HISTORICAL DEVELOPMENTS OF BANCASSURANCE

The strategy for using the established, entrenched distribution network for one product to market other new products has long existed in the consumer goods sector. Thus the networks for soaps and detergents have been used by companies to distribute newly launched food products, the distribution channel for radios has been used to market televisions and so on. Of course, the basic premise for this kind of cross-selling is the fact that companies keep diversifying their product portfolios, using established 'incumbent' networks to promote and distribute new product lines. Banks, too, have in the recent past adopted this strategy both in India as well as internationally.

They have moved away from the classical model of deposit taking and credit disbursal through their branch networks and have begun to offer a wide range of products and services like security broking facilities and mutual funds. This is the phenomenon of 'universal banking' that builds on the principle of leveraging existing networks to broaden portfolio offerings. Change in regulatory regimes also facilitated this diversification. This diversification of banking services has been driven by a number of factors, all of which have threatened bank profitability. In the US, the banks were earlier not allowed to sell insurance due to the restrictions imposed by Glass-Stegall Act of 1933, which acted as a wall between banking and insurance. As a result of this life insurance was primarily sold through individual agents, who focussed on wealthier individuals,
leading to a majority of the American middle class households being under-insured. With the repealing of this Act in 1999, the doors were opened for banks to distribute insurance and cater to the large middle class segment. Daniel (1995) provided an analysis of how 'bancassurance' products have evolved, which reflects the way the concept of bancassurance itself grew. The analysis of Daniel is based on the French market with reference to other European countries. Daniel divided the evolution of bancassurance products into three periods.

- In the first period, prior to 1980, banks sold insurance guarantees that were a direct extension of their banking activities, but were not associated with life insurance. For example, credit insurance was not regarded as bancassurance.
- After 1980, savings products that benefited from advantageous tax regimes associated with life insurance flourished in the banking markets.
- Around 1990, the supply of insurance products by banks became much more diversified in both life and general insurance categories.

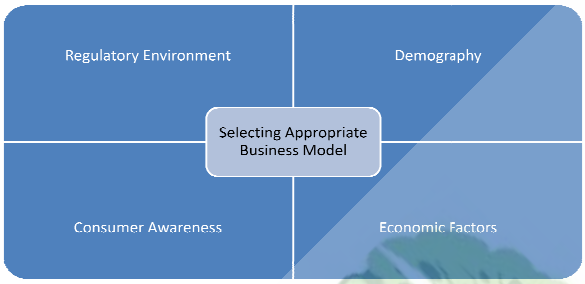


WHY SHOULD BANKS ENTER INSURANCE?

There are several reasons why banks should seriously consider Bancassurance:

- **The most important of which is increased return on assets (ROA).**
- **Another advantage banks have over traditional insurance distribution is lower cost per sales.**
- **Banks have extensive experience in marketing to both existing customers and non-customers.**
- **Banks have access to multiple communication channels such as statement inserts, direct mail, ATMs, telemarketing etc.**
- **Banks proficiency in using technology has resulted in improvements in transaction processing and customer service.**
- **By successfully mining their customer databases, banks can convert their insurance leads into sales.**

FACTORS INFLUENCING THE DEVELOPMENT OF BANCASSURANCE

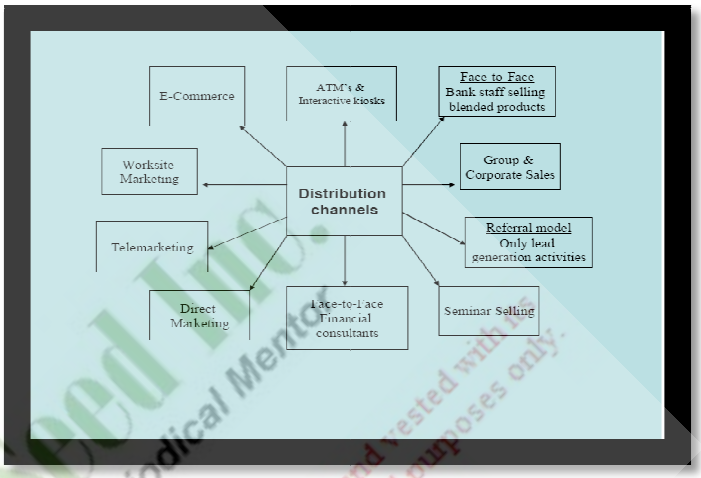


BANCASSURANCE TECHNOLOGY

Bancassurers should plan a technological infrastructure that will exploit customer information found in the bank's database to uncover sales opportunities and produce transactional simplicity for insurance customers. The information banks have about their customers' buying habits, economic status and money management practices constitutes a valuable asset often unrecognized even by large, sophisticated banking institutions. Using technology to order information about the economic behavior of customer segments can provide valuable insights about insurance-selling opportunities. For instance, customers buying a home through a bank mortgage can be approached for a variety of insurance products. With a traditional insurer, behavioral information about policyholders is usually unavailable, but even when known, can only be employed by agents (who have an economic interest in thwarting a direct relationship between the company and the client).

Bancassurers should use technology to simplify the insurance purchase as much as possible, thereby making the purchase an easier, more pleasant experience and further differentiating themselves in the process. Buying insurance in the traditional way means dealing with agents and the complications of the underwriting process, which bancassurance can eliminate. Branch customers are usually in a hurry and don't want to wait, so banks will serve them best by simplification. With point-of-sale technology, customers should be able to buy policies in a short time and leave the bank with coverage in hand. Particularly with an intangible such as an insurance policy, the buying experience itself is a key part of the purchase. Bancassurers should make the experience as positive as possible, and technology can contribute greatly to this effort.

DISTRIBUTION CHANNELS IN BANCASSURANCE



The main characteristics of each of these channels are:

- **Career Agents:** Career agents are full-time commissioned sales personnel holding an agency contract.
- **Special Advisors:** Special advisers are highly trained employees usually belonging to the insurance partner, who distribute insurance products to the banks corporate clients.
- **Salaried Agents:** The only difference between career agents and salaried agents is in terms of remuneration. They are paid on a salary basis and career agents receive incentive compensation based on their sales.
- **Platform Bankers:** Platform bankers are bank employees who spot the leads in the banks and gently suggest the customer to walk over and speak with appropriate representative with the bank
- **Direct Response:** The consumer purchases products directly from the bancassurer by responding to the company's advertisement, mailing, or telephone offers.
- **Outside Lead Generating Techniques:** One last method for developing Bancassurance eyes involves "outside" lead generating techniques such as seminars.

- **Internet:** Internet banking is already securely established as an effective and profitable basis for conducting banking operations. The reasonable expectation is that personal banking services will increasingly be delivered by Internet banking. Bancassurers can also feel confident that Internet banking will also prove an efficient vehicle for cross selling of insurance savings and protection products. It seems likely that a growing proportion of the affluent population, everyone's target market, will find banks with household name brands and proven skills in e-business a very acceptable source of non-banking products. There is now the Internet, which looms large as an effective source of information for financial product sales. Banks are well advised to make their new websites as interactive as possible, providing more than mere standard bank data and current rates. Functions requiring user input (check ordering, what-if calculations, credit and account applications) should be immediately added with links to the insurer. Such an arrangement can also provide a vehicle for insurance sales, service and leads.

- **E-Brokerage:** Banks can open or acquire an e-Brokerage arm and sell insurance products from multiple insurers. The changed legislative climate across the world should help migration of bancassurance in this direction. The advantage of this medium is scale of operation, strong brands, easy distribution and excellent synergy with the internet capabilities.

- **E-Commerce:** This channel is the fastest growing and most convenient way of purchasing insurance cover. Online sales of insurance policies can be encouraged by designing special non-medical term policies, which are easy to understand, and which do not warrant expert advice from trained advisors. E-commerce sites that offer the lowest quotes from all insurers are being introduced by entrepreneurs and they are slowly making the mark. Growth of broadband connections and personal computers will clearly fuel the growth of online purchases of insurance policies, especially by the white-collar employees, for whom time and convenience are top-most factors in any buying decisions.

INTEGRATION OF VARIOUS DISTRIBUTION CHANNELS

It seems very difficult for a single distribution channel to successfully reach the bancassurer's goals and specific target markets. Many bancassurers are using multiple distribution channels. This way they avoid becoming locked into one channel and they can offer services to a greater number of target markets. Multiple distribution channels provide another valuable feature. They enable the enterprise to offer customers multiple options for access. Therefore, if a customer wants to see someone about a particular service on one day but wants to transfer funds at a later date, e.g. on a Sunday night, the availability of both branch office and 24-hour telephone access increase the service value to that customer.

However, conflicts may arise among the various channels and also within channels under a multi-channel system. To avoid this it is necessary to ensure the following:

- Colleagues within a channel are motivated to cooperate
- There is communication of the importance of every link in the distribution process
- Cultural differences are communicated and respected
- The goals of every partner in the distribution process can be fulfilled by the process
- The specific role and performance expectations of each channel member are clearly stated, understood and accepted
- Communication between channels is encouraged
- Channel leadership is strong and committed to success.

By completely integrating their distribution channels in accordance with an established model, companies can achieve substantial cost savings, improve productivity and ensure that all stakeholders, shareholders, customers and staff are satisfied. The future of integrated distribution calls for the customer to be placed at the heart of the distribution network.

The call centre and the agency no longer operate as separate channels. Rather a synergy is realized through realignment of roles and responsibilities and the creation of a new sales integrated sales process, maximizing lead generation activity. Whatever the combination of distribution channels, the financial services company must seek to always improve the customer experience and deliver the service more cost effectively.

BANCASSURANCE MODELS

There are several Bancassurance models, and each has its own advantages and disadvantages. The challenge remains for most bancassurers to effectively combine the sales and support techniques for the life company structure into a non-threatening banking environment. Achieving this balance will allow them to bridge the gap between high net-worth advice and high-pressure product push.

Structural Classification

1. **Referral Model:** Banks intending not to take risk could adopt 'referral model' wherein they merely part with their client data base for business lead for commission. Referral model is nothing but a simple arrangement, wherein the bank, while controlling access to the client's data base, parts with only the business leads to the agents/sales staff of insurance company for a 'referral fee' or commission for every business lead that was passed on. This model would be suitable for almost all types of banks including the cooperative banks and even the cooperative societies both in rural and urban.

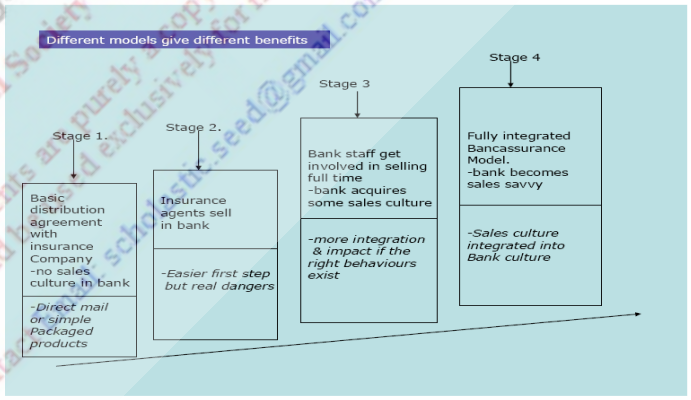
2. **Corporate Agency:** In corporate agency agreement the bank staff is trained to appraise and sell the products to the customers. Here the bank as an institution acts as corporate agent for the insurance products for a fee/commission. This model is best suited for majority of banks including some major urban cooperative banks because neither there is sharing of risk nor does it require huge investment in the form of infrastructure and yet could be a good source of income.

3. **Insurance as Fully Integrated Financial Service/Joint Venture:** As per the regulation of insurance sector the foreign insurance company could enter the Indian insurance market only in the form of joint venture, therefore, this type of bancassurance seems to have emerged out of necessity in India to an extent. There is a greater scope for further growth both life and non-life insurance segments.

PRODUCT –BASED CLASSIFICATION

1. **Stand-alone Insurance Products:** In this case of bancassurance involves marketing of the insurance products through either referral arrangements or corporate agency without mixing the insurance products with any of the banks own products/services. Insurance is sold as one more item in the menu of products offered to the bank's customer, however, the products of banks and insurance will have their respective brands too, e.g., Karur Vysya Bank Ltd selling life insurance products of Birla Sun Insurance or non-life insurance products of Bajaj Allianz General Insurance Company.

2. **Blend of Insurance with Bank Products:** This strategy aims at blending of insurance products as a 'value addition' while promoting its own products. Thus, banks could sell the insurance products without any additional efforts. For example, the home loans/vehicle loans have been packaged with the insurance cover as an additional incentive.



The various models/ stages for bancassurance ventures

RECENT SCENARIO OF BANCASSURANCE IN INDIA:

The insurance sector opened up in India about ten years ago, Bancassurance has now secured its position as a key distribution platform, and it's widely attracting the attention of banks, insurers, regulators and policy planners. India is

known for its large variety of banks and extensive branch networks, and over the last few years, these branches are increasingly being utilized to serve the insurance needs of over 400 million bank.

Banking is fully governed by Reserve Bank of India & Insurance sector is by Insurance Regulatory and Development Authority. With effect from October 29, 2002, banks have also been allowed to undertake referral business through their network of branches. However, before entering into insurance business, banks are required to obtain prior approval of the IRDA and RBI. It has now been decided that banks need not obtain prior approval of the RBI for engaging in insurance agency business or referral arrangement without any risk participation, subject to the following conditions:

- The bank should comply with the IRDA regulations for acting as 'composite corporate agent' or referral arrangement with insurance companies.
- The bank should not adopt any restrictive practice of forcing its customers to go in only for a particular insurance company in respect of assets financed by the bank. The customers should be allowed to exercise their own choice.
- The bank desirous of entering into referral arrangement, besides complying with IRDA regulations, should also enter into an agreement with the insurance company concerned for allowing use of its premises and making use of the existing infrastructure of the bank. The agreement should be for a period not exceeding three years at the first instance and the bank should have the discretion to renegotiate the terms depending on its satisfaction with the service or replace it by another agreement after the initial period. Thereafter, the bank will be free to sign a longer term contract with the approval of its Board in the case of a private sector bank and with the approval of Government of India in respect of a public sector bank.
- As the participation by a bank's customer in insurance products is purely on a voluntary basis, it should be stated in all publicity material distributed by the bank in a prominent way. There should be no 'linkage' either direct or indirect between the provision of banking services offered by the bank to its customers and use of the insurance products.
- The risks, if any, involved in insurance agency/referral arrangement should not get transferred to the business of the bank.

BANCASSURANCE IN INDIA SWOT ANALYSIS

Strengths: In a country of 1 billion people there is a huge potential market for life insurance products. In India the penetration of the insurance sector in the rural and semi-urban areas is low. There is a market of 900 million for life insurance and 200 million for householder's insurance policy. In addition to this the affluent section can be tapped for Overseas Medi-Claim and Travel Insurance Policies. Whether it is banks or insurance companies there is no dearth of skilled professionals in India to carry out a successful Bancassurance venture.

Weakness: In spite of growing emphasis on total branch mechanization (TBM) and full computerization of bank branches, the rural and semi-urban banks have still to see information technology as an enabler. Complete integration of branch network involves huge investments for creating IT and communication infrastructure. Though we have a huge market for insurance policies, the middle class who constitutes the bulk of this market is today burdened under inflationary pressures. The secret lies in inculcating savings habit but considering the amount of surplus funds available with the middle class for investing in future security, the ability to save is very nominal.

Opportunities: Banks have a huge customer database which has to be properly leveraged. Target segments should be identified and tapped. A wide distribution network of banks provides a great opportunity to sell insurance products through banks. Another potential area of growth of bancassurance is exploiting the corporate customers and tying up for insurance of the employees of corporate clients.

Threats: Success in Bancassurance venture requires a change in mindset. Though we have a large talent pool, the inability to sell complex insurance products on the part of bank professionals and their reluctance to learn can be severe setback. There has to be a change in the thinking, approach and work culture. Non-response from the target groups can also pose a challenge as it happened in the USA in 1980s.

BANCASSURANCE CHALLENGES AHEAD

The challenge of Bancassurance lies in innovation. Both partners, whether banks or insurance companies must be creative in thinking. Banks need to think differently and analyze (probably anticipate) customers' requirements and put a demand on the partner insurance company to reciprocate. The insurance company on its part must be able to manufacture products in tandem with bank's requirements. Other challenges facing Bancassurance today are complexity of regulation, lack of long term vision and commitment from top management, too much emphasis on fee income and sometimes mis-selling by banks. Banks would do well to factor these before they embark on a Bancassurance journey. The success of Bancassurance also lies in integrating it within the bank's structure so as to harness its full potential. Each division within the bank whether corporate or retail, has to accept the new neighborhood called Bancassurance and should be willing to share the leads and customer relationships. There are challenges ranging from assimilation process within the bank to the ownership of the customer; from profit sharing between multiple divisions within banks to bringing in the sales culture.

CONCLUSION

With the opening of insurance sector and with so many players entering the industry, it is essential to come up with well established infrastructure facilities with superior call centre service to attract and provide information to customer regarding high quality product and their premium payment scheme. Banks will bring a customer database, leverage their name, recognition and reputation of both local and regional levels. But the proper implementation of Bancassurance is still facing so many hurdles because of poor manpower management, lack of call centers, and no personal contact with customers, inadequate incentives to agents and un-fulfillment of other essential requirements.

Finally we can say that the Bancassurance would mostly depend on how well insurers and bankers understanding is with each other and how they are capturing the opportunity and how better service them are providing to their customers. Let us you all pay more attention towards the products and enjoy the service provide by banks and insurance companies by The Mode of Banassurance.

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E-COMMERCE: BARRIERS OF SUCCESS IN THE RETAIL INDUSTRY

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ABSTRACT

The globalization is the key success factor of a business. Information technology provides a rapid platform to achieve the globalization. In the contemporary global business technologies, e-commerce has emerged as a strong application of Information technology, which endowed with the resource and methodology by which the globalization has been achieved along with the accuracy and rapid speed.

E-Commerce in business is used in four forms; B2B, B2C, C2B, and C2C. These forms are used in the communication and transactions of information and wealth in between the business and it is equally functional for the retailer as well as customer. A business can have a very wide reach through e-Commerce irrespective of the geographical locations and other natural boundaries. The marketing and advertisement, selling of goods, payment of goods, purchase order, transaction of money, and even the delivery of goods can be done (in case of pure e-Commerce) through Internet.

In the customers' perspective, though e-Commerce seems to be very attractive and useful but the majority of the retail customers still rely on the traditional mortar and bricks system. In this paper I have tried to find out the reasons of distrust in e-commerce of retailing customers. All the data collected is secondary and from the centralized source in USA.

KEYWORDS

Mixed e-commerce
Pure e-Commerce
E-retail
E-commerce Sales
Mortar and Bricks Sales
e-Money

THEME BASED PAPER

PREAMBLE

The form of e-Commerce, which is seen today, is quite different from the form in which it was begun 40 years back. In its original form, in its early days, e-Commerce was used to facilitate commercial transactions electronically. The two popular technology for the purpose were Electronic Data Interchange (EDI) and Electronic Fund Transfer (EFT) . These were both introduced in the late 1970s, allowing businesses to send commercial documents like purchase orders or invoices electronically. In the 1980s, the other form of e-Commerce like credit cards, automated teller machines (ATM) telephone banking, and the airline reservation system by Sabre in the USA and Travicom in the UK, were introduced.

The concept of retailing in e-Commerce was introduced in UK by Michael Aidrich in 1979. According to the records the world's first B2B type e-Commerce was used by Thomson Holidays in 1981, the first B2C was Gateshead SIS/Tesco in 1984, and the world's first online shopper was Mrs Jane Snowball of Gateshead, England. During the 1980s, online shopping was also used extensively in the UK by auto manufacturers such as Ford, Peugeot-Talbot, General Motors and Nissan. All these organizations and others used the Aldrich systems. The systems used the switched public telephone network in dial-up and leased line modems. There was no broadband capability. The revolution began during 1990s when the concept of ERP (Enterprise Resource Planning) , Data Mining, and Data Warehousing were incorporated with the e-Commerce. By the end of 2000 many renowned American and European business organizations started providing their services and product through Internet and World Wide Web. By this time the people had become aware of e-Commerce and became familiar to purchase the goods and to make the payment online through secure Internet Connections/Protocols

GROWTH RATE IN RETAILING

According to the data published by US Census Bureau News, U.S. Department of Commerce, Washington D.C.20233 on November 18, 2009, the retailing e-Commerce Sales or e-Retail is increasing but it is having a very small ratio in the market of retailing business. The e-Retail is only attempting to touch the 5% share of the entire retailing business market. It is dangling in between 3-4% of the total retail industry. So, it is very clear that more than 95% of the entire retail industry is still held by the Mortar and Bricks Sales. In this statistics the major contribution in the e-Commerce sales is of Airline Tickets, Online Travel Agents, and Travel Accommodation. The next major e-Retailing is of publications (books, magazines, and journals), media products, and the software. The another retailing business like FMCG (Fast Moving Consumable Goods), Apparel Industry, Food and Beverages Industry, Electronics Hardware Productions Industry is still either intact of e-Commerce Sales or is negligible

Table 1. Estimated Yearly U.S. Retail Sales: Total and e-Commerce (Food Industry not included)
(Estimates are based on data from the Monthly Retail Trade Survey and administrative records.)

1. Total retail upto November 2009.
2. e-Commerce Sales upto November 2009

Year	Retail Sales (in Millions of Dollars)		%age of e-Commerce	Change from Prior Year (Approx. %)	
	Total	e-Commerce		Total	E-Com
1999	2,806,464	19,838	0.59	-	-
2000	2,762,149	27,720	0.79	39	-1.5
2001	3,067,837	34,451	1.07	24	11
2002	3,135,123	44,925	1.34	30	2
2003	3,264,407	56,719	1.67	26	4
2004	3,462,140	71,087	1.97	25	6
2005	3,684,998	87,846	2.24	23	6
2006	3,876,257	107,014	2.76	21	5
2007	3,997,706	126,697	3.17	18	3
2008	3,948,441	132,257	3.29	4	-1
2009	3,363,378[1]	92,951[2]	2.76	-	-

Data Source: US Census Bureau News, US Department of Commerce, Washington DC 20233.

Chart 1: The Comparison Chart of The total Retail and the e-Commerce Sales

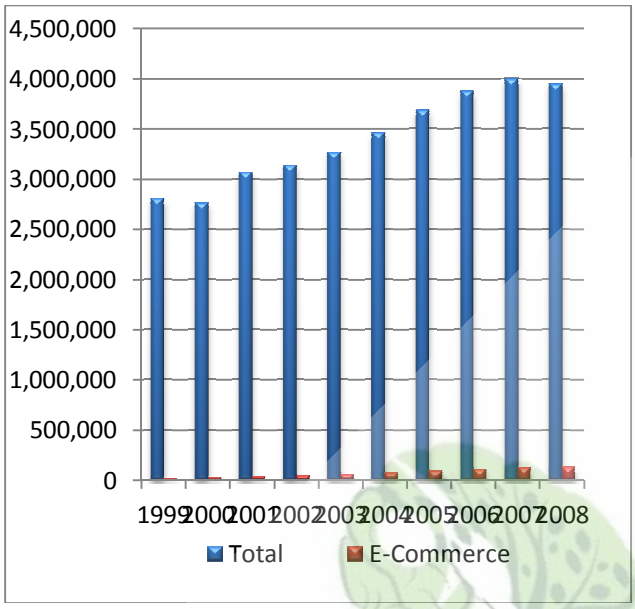
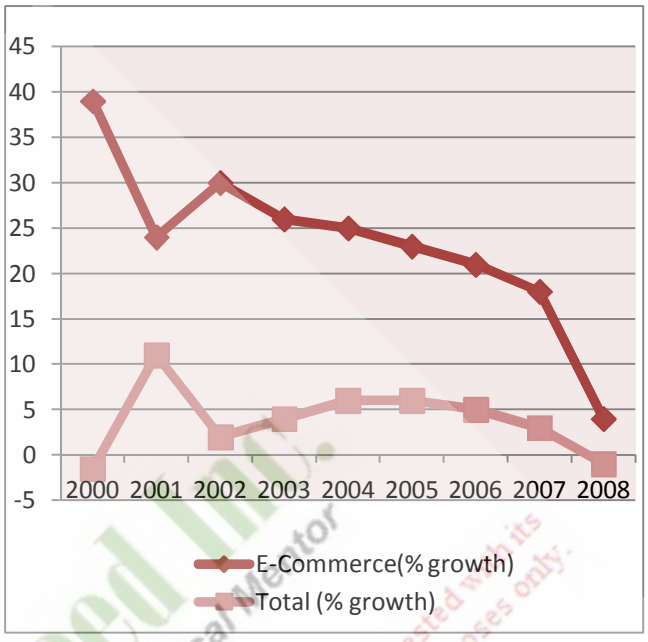


Chart 2: The percentage growth of e-Commerce sales



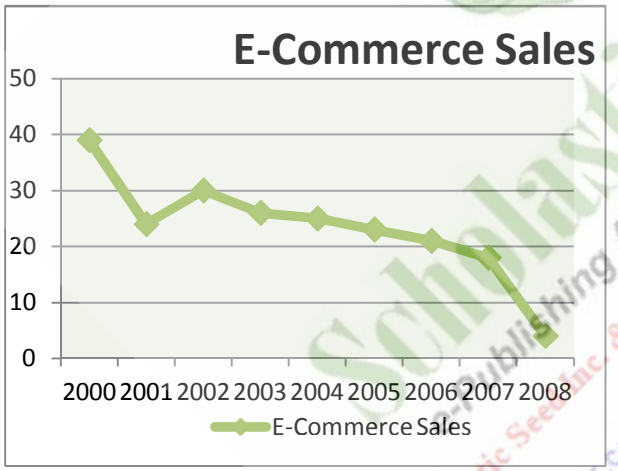


Chart 3: The percentage growth Comparison of Total and e-Commerce

The above data is clearly showing that e-Commerce sales growth is increasing with a decreasing rate. The rate of growth is very high as compared to the rate of growth of the total retail sales. But, this huge looking growth is within the e-Commerce Sales. The huge gap in the total retail and e-Retail is clearly visible.

E-COMMERCE COMPANIES

The following is the summary of some of the major e-Commerce Sales Company in global retailing.

1. Amazon.com:

Amazon.com was founded in 1994 and launched in 1995 for the retailing of books only but soon its business area was diversified into a number of different products. They started online retailing of CDs, DVD, Computer Software as a pure e-Commerce sales, and Apparel, Furniture, Food Products etc. as a mixed e-Commerce sales. This e-Commerce retailing company generated US $19.166 billion revenue with a net income of US $ 645 million

in the year 2008 in which the major revenue was generated by pure e-Commerce sales.

2. **eBay's Halfway.com:**

   Halfway.com was founded in the year 1999 and purchased by eBay in the year 2000. This is C2C e-Commerce Company where the sellers and buyers are contacting to sell and buy the goods. Like Amazon.com for books and CDs, Halfway.com plays a large role in the used textbook and CD markets. The total revenue generated was US $ 8.5 billion in the year 2008.

3. **walmart.com:** This is the mixed e-Commerce sales company it was founded in 1962 in mortar and bricks business organization. Its total revenue in 2009 is US $ 404.16 and the net profit earned by the company is US $ 13.59 billion in but its e-Commerce sales is half of the Amazon.com.

IMPORTANT FACTORS AFFECTING E-COMMERCE SALES IN RETAILING

The following are the important factors promoting the e-Commerce retail sales.

(i) **Availability of Internet Connection:** A high speed broad band connection is needed to search and view the products easily. The availability of such Internet connection provides the facility to the customer to search and view the product with minimum waiting time. This is also needed to facilitate the purchase order and payment by the customer. Infact, right from the searching and viewing to the transaction a high-speed Internet Connection drives all the activities with convenience of the customer.

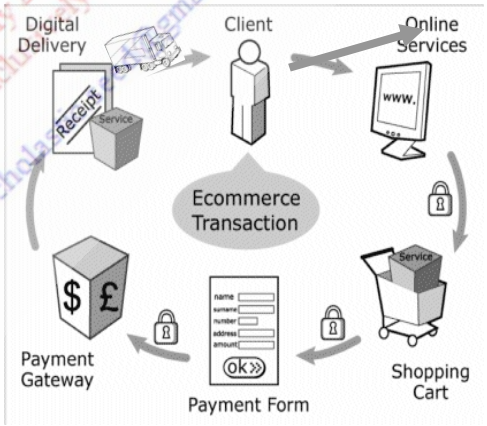
(ii) **Transportation:** The next process in the mixed e-Commerce system is the transportation of goods in the right condition in the right time after the purchase order approval. This is possible only when the e-Commerce store is well connected with the adequate facility of transport.

(iii) **Availability of e-Money:** How much e-Money is available to the customers and to how many customers it is available? The payment in the e-Commerce system is made before the delivery of goods. The major instant payment systems are Smart Card, Debit Card and the Credit Cards. The promotion of e-Commerce retailing is very much dependent upon the availaibility of this kind of money with the customers.

(iv) **Security:** The basic concern in the e-Commerce retail sales is the confidence of customers by which they can use their e-Money for purchasing with the security of their transactions and money.

(v) **Customer Satisfaction:** With all the process and the product what the customer had imagined before the delivery is fulfilling the customers' expectation or not. This is very important factor in the promotion of e-Commerce. This includes the services of the product in case of non-consumable product. The replacement of the product, if it is not as per the expectation of the customer etc.

THE TRANSACTION CHAIN IN E-COMMERCE RETAIL SALES



The above shown picture depicts a simple transaction system in e-Commerce. This transaction system is having many defenseless points which raise the security weakness of the system towards the customers. These issues are as follows.

i. **The Authentication of merchant's Site: The first suspicion in the mind of customer is the merchant on the web is authentic or not. There is no provision to ensure the authenticity of the merchant on the web. If a customer is selecting an e-Comerce site "dell" to purchase a computer. The customer selects a computer and puts it into the shopping cart and makes the payment through credit card. But, now it is not certain whether the customer has paid to original "dell" or someone else. There is no provision to ensure the merchants originality.**

ii. **The similarity check of selected and delivered article: In the case of some of the products it is quite easy to match the ordered and delivered product e.g., Computers and products, Books and Magazines, Vehicles and products, Software and products, Electronics and Electrical house hold appliances and Tools etc. But, The Garments, Shoes, and Consumable goods it is very difficult to match the expectation of the customer and as soon as the product is delivered to the customer and it does not match with the expectation of the customer, the customer feels cheated.**

iii. **The Later on Delivery System: In the mortar and bricks sales in general, the purchased goods are delivered or handed over instantly while in the e-Commerce sales it is always delivered after 2-3 days to customer and sometimes more than 2-3 days. The waiting time of 2-3 days or more in most of the cases is not desirable. The customer at this point feels better not to use e-Commerce shopping.**

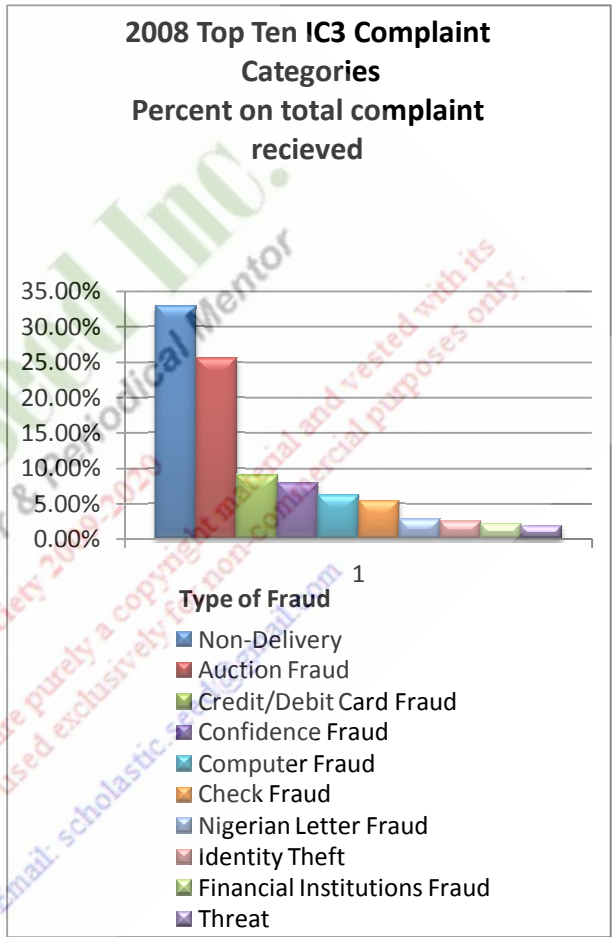
iv. **The delayed action on complaint: If a customer is not satisfied with the product then the complaint of the customer takes another 5-6 days in the case of exchanging the goods and 3-4 days in the onsite correction of the goods.**

v. **No Insurance on Fraud: This is the unanswered part of the entire transaction system. If the customer is cheated who is responsible? Can any part of the entire e-Commerce system insure the security of the customers' transaction? This is nowhere answered or stated. The customer is the ultimate sufferer**

vi. **Helpless anti-crime organizations: The entire Internet system is a huge ocean in which infinite data and information is flowing without any hurdle. It is open from everywhere to enter inside it. Any one can enter inside it with fake alias/identity and password. There is no provision to ensure the identity of any entrant. Anybody can intrude from anywhere, perform a crime and come out without any obstacle. The anti-crime organizations are helpless to find the intruders. The process of finding the intruder is very costly and time taking and in most of the cases it is not desirable. And this is also a fact that sometime it is impossible to find the intruder.**

SECURITY THREATS AND SECURITY SYSTEMS IN E-COMMERCE

Chart 4: The different catagories of fraud registered by Internet Crime Compalint Center and FBI in the year 2008, data released by IC3 on March 31, 2009.



The above chart clearly shows that the maximum percentage of loss of customer is due to non-delivery of product. The non-delivery of the product is from the fake/non-existing e-Commerce shops. The customers get into the Internet to search the desired product. The web on the Internet shows the e-Commerce shops registered on the Internet. The Customer on good faith selects the items from an e-Commerce shop and makes the payment. When the delivery of the purchased items is not done

even after the specific period then it is found that customer paid to the company which did never exist. The auction fraud is more or less similar kind of trap spread by the fraudulent.

The major problem is the process of payment in the e-Commerce retail sales. For the payment the credit /debit card number is used along with the password. The physical verification of card is no where needed in the e-Commerce shops. The card number and the password can easily be stolen with the help of software by copying the signal sent from keyboard to the processor. It is very easy to install such software in the computers on the Internet using any of the intrusion technique.

The Security of the site and the computer on the Internet can be achieved by installing and implementing a number of security tools and security techniques. The major tools and techniques are as follows.

(i) Encryption
(ii) Firewalls
(iii) Network Security Protocols
(iv) Virtual Private Networks
(v) Tunneling
(vi) Proxy/Agent Systems
(vii) Access Controls
(viii) Authentication
(ix) Intrusion Detection
(x) And many more

All the above cited technologies/tools are useful to prevent the intruders, to protect the theft, to protect the diversion of the path of data, to prevent the alteration of the data to maintain the privacy etc.

In all the security provisions there is nothing to ensure the originality of the e-Commerce company on the web.

CONCLUSION

Why the retail e-Commerce is dangling in between 3-4%? There are two important factors upon which the customers are stopping themselves to go for retailing through e-Commerce.

Satisfaction from the Service: Apart from standard pre-identified products, e-Commerce technology is having the limitation to give the real physical presentation of the product in terms of quality and appearance. It is always a hit and trial for the customer to find their desired product.

Security from Fraud: There is no technique to ensure the authenticity of a company on the web. If a customer is trapped by such company no one is taking the responsibility for the fraud.

The e-Commerce sales in retailing can be increased and made popular by controlling the above two factors. As much control can be done upon the above two factors so much confidence will be built up in the customers for retailing through e-Commerce.

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Advanced Data Mining Techniques

By

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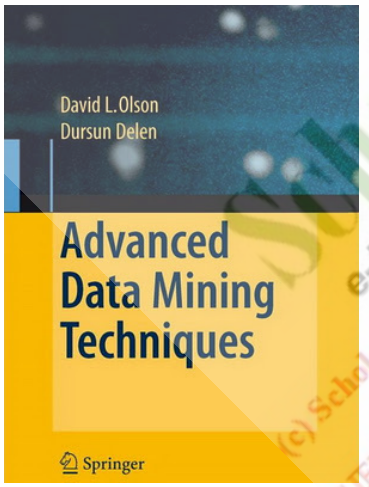
ABSTRACT

The book will include short vignettes of how specific concepts have been applied in real practice. A series of representative data sets will be generated to demonstrate specific methods and concepts. References to data mining software and sites such as www.kdnuggets.com will be provided.

KEYWORD

Vector machines	Rough sets
Data mining	Fuzzy
Genetic algorithms	Techniques



SPRINGER-USA

The intent of this book is to describe some recent data mining tools that have proven effective in dealing with data sets which often involve uncertain description or other complexities that cause difficulty for the conventional approaches of logistic regression, neural network models, and decision trees. Among these traditional algorithms, neural network models often have a relative advantage when data is complex. We will discuss methods with simple examples, review applications, and evaluate relative advantages of several contemporary methods.

Our intent is to cover the fundamental concepts of data mining, to demonstrate the potential of gathering large sets of data, and analyzing these data sets to gain useful business understanding. We have organized the material into three parts. Part I introduces concepts. Part II contains chapters on a number of different techniques often used in data mining. Part III focuses on business applications of data mining. Not all of these chapters need to be covered, and their sequence could be varied at instructor design.

Part I: INTRODUCTION

Chapter 1 gives an overview of data mining, and provides a description of the data mining process. An overview of useful business applications is provided.

Chapter 2 presents the data mining process in more detail. It demonstrates this process with a typical set of data. Visualization of data through data mining software is addressed.

Part II: DATA MINING METHODS AS TOOLS

Chapter 3 presents memory-based reasoning methods of data mining. Major real applications are described. Algorithms are demonstrated with prototypical data based on real applications.

Chapter 4 discusses association rule methods. Application in the form of market basket analysis is discussed. A real data set is described, and a simplified version used to demonstrate association rule methods.

Chapter 5 presents fuzzy data mining approaches. Fuzzy decision tree approaches are described, as well as fuzzy association rule applications. Real data mining applications are described and demonstrated

Chapter 6 presents Rough Sets, a recently popularized data mining method.

Chapter 7 describes support vector machines and the types of data sets in which they seem to have relative advantage.

Chapter 8 discusses the use of genetic algorithms to supplement various data mining operations.

Chapter 9 describes methods to evaluate models in the process of data mining.

Part III: APPLICATIONS

Chapter 10 presents a spectrum of successful applications of the data mining techniques, focusing on the value of these analyses to business decision making.

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Global Journal of Enterprise Information System

Corporate Governance Values and Ethics with case studies

By

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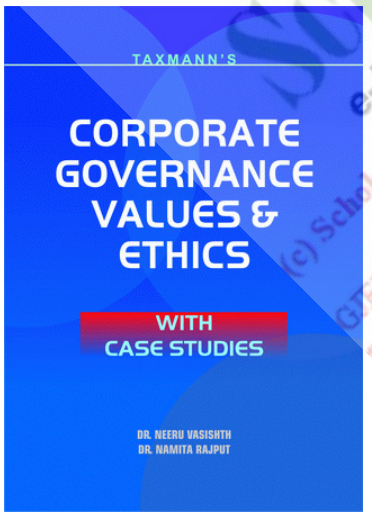
ABSTRACT

Corporate Governance is necessary to avoid corporate frauds, scams and irregularities. The book under review highlights various concepts of Corporate Governance, ethics and values and analyzes their relevance in the fields of Business management and Organizational Behavior. The book has been written lucidly with a self-explanatory approach with various examples from Indian case studies.

The book on Corporate Governance Values and Ethics with case studies is extremely useful for Under Graduate and Post Graduate students of Business Administration and also for students pursuing other professional courses.



KEYWORD

	Globalization		Strategic Planning
	Corporate Social Reporting		Quality Control
	Scriptures and Ethics		India
	Benchmarking		Diversification
	Benchmarking		Logistics

This book is a simple presentation of various concepts of corporate governance and business ethics in an easy to understand language. It comprises relevant case studies to gain a deeper insight into the subject.

Each chapter begins with an introductory paragraph and states its objectives. Every paragraph begins with an introductory comment that clears its objectives and relates it to the text at relevant places.

The book encompasses 21 chapters covering different useful concepts of corporate governance, Values and Ethics.

The 1st chapter includes meaning, need, importance, principles and objectives of Corporate Governance.

The 2nd chapter talks about Code of corporate practices, corporate Governance in India mentioning Cadbury Committee, Birla committee Report, SEBI Code and CII code.

The 3rd and 4th chapters discuss Corporate Social Reporting and Role of Board of Directors respectively.

In the 5th chapter, authors discuss Corporate governance in Global and Indian context throwing light on corporate disclosure practices and Investor protection in India.

Following chapters corroborate the concepts of Values, Teaching ethics, Teachings from scriptures, ethical issues and market systems, Corporate social Responsibility, ethics and financial areas of business, moral reasoning and theories, Globalization, Information technology and decision making.

The last 6 chapters throw light on corporate strategy, Benchmarking, Quality control, Promotion management and brand building, growth strategies and supply chain management.

There is an underlying need to study various concepts of corporate governance to gain a deeper insight of corporate health and its relationship with investors. Governance ensures ethics in corporate management. Ethics comprise the values and social system for organizations promoting orderly corporate life and a disciplined society.

In the current scenario, business and society are deviating from ethical practices towards maximization of personal gains. Corruption, scandals, black marketing, tax evasion have become rampant and pervasive in modern business societies. Study of Ethics goes a long way in shaping the culture of individual, firm, industry, nation and world at large.

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Blockchain Federation of India [BFI]

Blockchain Federation of India is the primary and principal body of blockchain professionals in India. It was founded on 13th March 2019 by a few academician and Cyber professionals including its co-founders Col. Inderjit Singh Barara and Dr. Subodh Kesharwani which has now grown to be the national body representing blockchain professionals on a PAN India basis, in fact informally through social networking cites group exists from 2017 onwards. BFI is a non-profit professional meet to exchange views and information learns and share ideas. The wide spectrum of members is committed to the advancement of theory and practice of Blockchain and Technology Systems, Science and Engineering, Information Processing and related Arts and Sciences. The Federation also encourages and assists professionals to preserve truthfulness and aptitude of the profession and fosters a sagacity of partnership amongst members. Besides formulating the activities held at the chapters and student branches, the society will also conducts periodic conferences, seminars. The society will be in touch with various International bodies of blockchain for an international alliance.

BYLAWS OF BLOCKCHAIN FEDERATION OF INDIA

Blockchain Federation of India known for its acronym (BFI) is an Indian customized international organisation dedicated to raising digital competence standards in the workforce, education and society in blockchain perspectives. BFI have a certain vision and mission:

- To bring all block chain researcher and technocrats under one roof
- Formulation of Block chain Virtual university
- Developed Own Teaching Contents in Block chain

BLOCKCHAIN VIRTUAL UNIVERSITY

Blockchain Federation of India is an international organisation dedicated to raising digital competence standards in the workforce, education and society vis-à-vis blockchain. Our proposed certification programmes, delivered through an active network in multiple countries, enable individuals and organisations to assess, build and certify their competence in the use of blockchain tools to the globally recognized BFI standard, known as BFI worldwide. As a nonprofit social enterprise Blockchain Federation of India (BFI) benefits from the exclusive support of experts from national technical societies and partners international to enlarge vendor-independent standards which define the skills and knowledge required to use blockchain technology in actual fact. We work with education and training partners, local and regional authorities, national governments, international development organisations as well as public and private sector employers in all sectors, in the delivery of our programmes. The quality and reputation of BFI is built on years of expertise earned by it's founders and associated office bearers. Our accomplishment is maintained by our forthcoming innovation in certification programme development, our commitment to rigorous test design methodologies, and consistent adherence to our quality assurance standards. Blockchain Federation of India planning to support the initiatives of National Operators of the programme in various parts of world. All Blockchain Federation of India operations work closely with regional, national and local partners to develop the global network of BFI Accredited Test Centers.

BYLAWS OF THE BLOCKCHAIN FEDERATION OF INDIA

ARTICLE I. NAME

- The name of the Federation shall be the "Blockchain Federation of India", and it shall be incorporated as a nonprofit corporation in Republic of India with a Headquarter in New Delhi.

ARTICLE II. PURPOSE

- The purpose of the Federation shall be to promote Blockchain education through faculty development and to encourage that the teaching and learning \ related to blockchain implementation in various upcoming field.

ARTICLE III. RESTRICTIONS ON ACTIVITIES

- Section 1. No part of the earnings of the Federation shall inure to its members, officers, or other private persons, except that the Federation shall be authorized and empowered to pay reasonable compensation for services rendered in direct support of its purpose.
- Section 2. No part of the activities of the Federation shall be directed towards influencing legislation or intervening in political campaigns.

ARTICLE IV. MEMBERSHIP

- Section 1. The Board may establish and/or change the membership classes. The Board of Directors shall set the dues amount and the criteria for each class of membership.
- Section 2. All individuals who are members in good standing shall have the right to vote, hold office, and serve on committees. To be in good standing, a member must not be more than six months in arrears in his/her dues and financial obligations to the Federation. Individuals more than six months in arrears in their dues will be declared inactive, but retained on the membership rolls for an additional six months. Inactive members can reinstate their good standing by payment of current and all past dues.
- Section 3. Individuals whose dues are more than one year in arrears shall be dropped from the membership rolls.

ARTICLE V. OFFICERS

- Section 1. The Officers of the Federation shall be the President, President-Elect, Secretary, Treasurer, and the Immediate Past-President. The election procedure is as described in Article VII.
- Section 2. President & Secretary. The President and Secretary of BFI is the highest ranking officer of the Federation and are directly accountable to the membership and the Board. The President leads the Board of Directors as a chairperson and Secretary will be the Convener in development of the strategic goals and objectives of the organization and provides direction and leadership. The President serves as the Chair of the Board of Directors, Executive Committee and Annual General Meetings. A detailed position description, approved by the Board, shall be maintained on the Federation's website.
- Section 3. Immediate Past-President. In those years when a new President is elected, the current President assumes the office of Immediate Past-President. The Immediate Past-President remains in office until a new Immediate Past-President assumes the office. A vacancy in the office of Immediate Past-President cannot be filled by appointment. A detailed position description, approved by the Board, shall be maintained on the Federation's website.
- Section 4. President-Elect. The President-Elect is the third highest ranking officer of the Federation and shall support the President and secretary to advance the work of the Federation. At the end of the term, the President-Elect shall assume the office as President of the Federation. In the event that the President is temporarily unable to fulfill her/his duties to the Federation, the President-Elect may be appointed Acting President by the Board of Directors. If the President resigns or is unable to fulfill their duties for an extended period, the President-Elect shall become the President and a new President-Elect shall be elected by a majority vote in a special election of the Board of Directs within 30 days. A detailed position description, approved by the Board, shall be maintained on the Federation's website.
- Section 5. Secretary: The Secretary oversees the recording of proceedings of meetings of the Federation and the Board of Directors, and is responsible for the Federation's correspondence. A detailed position description, approved by the Board, shall be maintained on the Federation's website.
- Section 6. Treasurer: The Treasurer oversees the financial records of the Federation according to standard accounting practices, and, whether performed personally or through the Federation's administrative office, is responsible for safeguarding the Federation's funds. The Treasurer presents periodic reports on the financial status of the Federation to the Board of Directors and a full report to the membership at the Annual Federation Meeting. A detailed position description, approved by the Board, shall be maintained on the Federation's website.

ARTICLE VI. BOARD OF DIRECTORS

- Section 1. The Board of Directors shall be the principal governing body of the Federation. The Board of Directors shall consist of eleven (11) Directors plus four (4) Officers plus the Immediate Past-President,

if the Immediate Past-President is not an elected Director. When the Immediate Past-President is not an elected Director, the Immediate Past-President would be an ex-officio member of the Board of Directors and the Executive Committee until a new Immediate past President assumes the office. In that capacity, the Immediate Past-President has a vote only to prevent a tie (so when an even number of Directors and/or Officers is present).

- Section 2. Directors shall be elected for a three (3) year term. The terms shall be staggered and at least three (3) seats will be elected annually. Directors may not be elected to serve consecutive terms but may be reelected after an absence of one year. The election procedure for Directors is described in Article VII.
- Section 3. The Board shall meet quarterly, or more often if the need arises, at the call of the President or at least three members of the Board. Board meetings may be held in person, by teleconference, or other electronic means. A proposed agenda and supporting materials shall be made available to Board members prior to a Board meeting.
- Section 4. A quorum shall consist of one more than half the current number of Board members and must include at least two members of the Executive Committee.
- Section 5. In the event a vacancy occurs on the Board in a Director position, the President shall, with the approval of the Board, appoint a member to fill the vacancy. These appointed members shall serve out the term of the individuals they replace on the Board. The new Director shall complete the term of the former Director and shall be eligible for reelection if the remaining term is less than two years. Individuals joining the Board of Directors by appointment as a Director shall not serve more than three consecutive years in that office as a Director in addition to the partial term they served as replacement. In the event a vacancy occurs in an Officer position, the Board will immediately elect a new officer to that position in accordance with Article VII. The elected member takes office immediately, shall serve out the term of the individual she or he replaces as an Officer and will still be eligible for one complete term (of two years) in that same Officer position in addition to the partial term she or he served as a replacement.
- Section 6. With the approval of the Executive Committee, the President may recommend that any Board member be removed from office by the following procedure: 1) reasons for the proposed action must be provided in writing to the member, 2) the member shall have 60 days in which to represent themselves at a meeting of the Board, 3) a two-thirds vote of the current number of Board members shall then decide.

ARTICLE VII. NOMINATIONS AND ELECTIONS

- Section 1. Nominations. The Nominating Committee shall on or before January 25th submit to the Federation Manager a list of candidates for each position subject to election in that year. The names of these individuals, and other such supportive materials as deemed appropriate by the Nominating Committee, shall be posted to the Federation's website on or before February 1. The Federation's administrative office shall mail or fax a copy of these materials to those BFI members who have previously indicated they do not have Internet access. Between February 1 and February 15, members may petition for additional candidates to be added to the ballot. Such nomination petitions may consist of either a single document or separate letters. To be nominated by petition, each candidate must have the support of at least 15 BFI members in good standing. All petitions and letters must be addressed to and received by the Federation Manager on or before midnight (IST) of February 15.
- Section 2. Elections. On March 1, a secured, electronic ballot shall be activated on the Federation's website, along with instructions for electronic voting. All ballots must be electronically submitted to the website on or before midnight (IST) March 15 to be counted. Results shall be posted to the Federation's website by April 1. A plurality of the votes cast is needed for election. In the event of a tie, the election shall be decided prior to April 1 by a majority vote of the current number of Board members.
- Section 3. Newly elected Directors will assume their office at the conclusion of the Federation's annual meeting.
- Section 4. The Officers (of the Federation President, President-Elect, Secretary and Treasurer) shall be elected by a majority vote of the Board of Directors by electronic vote before December 15th, and assume their duties on January 1st. If the elected Officer is a current Director, the newly elected Officer must resign as a Director before assuming the role as an Officer. Officers serve a two-year term of office, and may not serve consecutive terms. However, they may be reelected to the same office after an absence of one year. An Officer may be elected to a different position on the Executive Committee immediately following his/her current term. There is no limit on the number of times an individual may serve as an Officer. The President-Elect, Treasure, and Secretary shall be elected by the Board of Directors as described in Section 5 below. Officers may be removed by a two-thirds vote of the entire membership of the Board of Directors.
- Section 5. Nominations for Officers. In the year the Officers are to be elected, a special Officer Nominating Committee will be formed, composed of the Immediate Past-President, President-Elect, two members from the BFI Nominating Committee (elected by the Nomination Committee) and one current Director

(elected by the Board of Directors). No committee member can be a concurrent candidate for an Officer position. The special Officer Nominating Committee shall on or before November 1st submit to the Federation Manager a list of candidates for each Officer position. Candidates must be BFI members in good standing. The names of these individuals, and other such supportive materials as deemed appropriate by the Nominating Committee, shall be posted to the password protected Board website on or before November 7th.

- Section 6. If a conflict arises concerning elections of Directors or Officers, the current Chair of the BFI Nominating Committee and 2 recent Past Presidents will be appointed to resolve any conflicts.

ARTICLE VIII. STANDING COMMITTEES

- Section 1. Membership and Term of Service. Standing Committees are defined in these Bylaws of BFI and can only be removed or redefined by majority vote of the membership. Other committees may be created by the Board to serve specific duties important to the organization
    - Chairs of Standing Committees, except the Executive Committee, are nominated by the President and approved by the Board. They serve three-year terms until the close of the next Annual Business Meeting and may be reappointed.
    - Members of Standing Committees, except the Executive Committee, the Professional Development Committee and the Nominating Committee, are appointed by the committee Chair, who will notify the Board of all committee membership changes. All appointed members shall serve one-year terms until the close of the next Annual Business Meeting and may be reappointed.
- Section 2. Executive Committee. The Executive Committee, which consists of the Officers, shall make decisions and take actions on behalf of the Board in between Board meetings. The President shall call meetings of the Executive Committee.
- Section 3. Nominating Committee. The Nominating Committee shall be responsible for determining a suitable group of candidates for election to the Board of Directors. It shall consist of five members who are neither current members of the Board nor current Committee Chairs. They may not be current candidates for the BFI Board. The President shall appoint a Chair plus two members with the approval of the Board of Directors. Two members shall be nominated and elected by the membership at the Annual General Meeting.
- Section 4. Professional Development Committee. The Professional Development Committee shall be responsible for recommending the overall scientific and educational programs of the Federation to the Board. Membership will include the current BFI President, President-Elect and Chairs of the Publications Committee and of other Committees with missions relevant to professional development activities, as determined by the Board.
- Section 5. Publications Committee. The Publications Committee shall be responsible for oversight and management of all publications of the Federation. They will work in concert with the Editorial Board of the Federation's journal.
- Section 6. Membership Committee. The Membership Committee shall be responsible for evaluating the needs of the membership and recommending appropriate ways to meet those needs. The committee will develop methods and programs for active membership recruitment and retention.
- Section 7. Finance and Organizational Development Committee. The Finance and Organizational Development Committee shall assist the Treasurer, who shall serve as Committee Chair, in maintaining the financial health of the Federation, including preparation of the annual budget. It will also be responsible for pursuing appropriate federal, foundation, corporate, and private funding to support the work of the Federation. The Committee shall be chaired by the Treasurer.

ARTICLE IX. MEMBERSHIP MEETINGS

- Section 1. Annual General Meeting Time, Place, and Purpose. The Annual General Meeting of the Federation shall be held at such time and place as may be selected by the Board of Directors and stated in the Notice of Meeting. The Annual General Meeting shall include the transaction of such other business as may properly be brought before the membership.
- Section 2. Notice of Meetings. The Federation Manager shall give notice of all Federation meetings stating the place, day, and hour of the meeting and, in case of a Special Meeting, the purpose for which the meeting is called. Such notice of special meetings shall be not less than ten or more than fifty days before the date of the meeting. Notice of the Annual General Meeting is to be given no later than the prior Annual General Meeting.
- Section 3. Quorum. A quorum for transaction of business shall be not less than 10% of the total membership in good standing.
- Section 4. Voting and Representation. Each member who is present shall be entitled to one vote at all BFI meetings. A membership roll showing the list of members as of the record date, certified by BFI's Secretary, shall be produced at any meeting of the members upon request. All persons appearing on such membership roll shall be entitled to vote.

ARTICLE X. AMENDMENTS

- Section 1. Amendments of the bylaws may be proposed by a majority of the Board of Directors or by a petition, sent to the Secretary, bearing the signatures of at least 15 members in good standing.
- Section 2. Notice of proposed amendments, shall be posted to the Federation's website on or before March 1. The Federation's administrative office shall mail or fax a copy of these materials and the slate of nominees, described in Article VII, Section 1, to those BFI members who have previously indicated they do not have Internet access. On April 1, a secured, electronic ballot shall be activated on the Federation's website, along with instructions for electronic voting. The Federation's administrative office will mail or fax a ballot containing the proposed changes and the slate of candidates, described in Article VII, Section 2, to those BFI members who have previously indicated they do not have Internet access. All ballots must be electronically submitted to the website or received in the post by the Secretary on or before midnight (IST) of April 30 to be counted. The Secretary shall tally the votes and send the results to the Federation Manager for posting on the Federation's website by May 15.
- Section 3. In the event of an urgent requirement for an amendment, the Board of Directors, by a two-thirds vote, may authorize posting a proposed amendment to the members at any time. Notice of proposed amendments shall be posted on the Federation website for a 30-day period prior to balloting. At the end of the posting period, a secured electronic ballot shall be activated on the Federation's website, along with instructions for electronic voting. The Federation's administrative office shall mail or fax appropriate information and a ballot to those BFI members who have previously indicated they do not have Internet access. All ballots must be electronically submitted to the website or received in the post by the Secretary within 30 days of the opening of balloting. The Secretary shall tally the votes and send the results to the Federation Manager for posting on the Federation's website.
- Section 4. All amendments of the bylaws require an affirmative vote of two-thirds of the members in good standing who submit valid ballots.

ARTICLE XI. INDEMNIFICATION

The Federation shall defend and indemnify any qualified person against any threatened, pending, or completed legal action resulting from actions taken in good faith on behalf of the Federation. Qualified persons shall be present and former officers, employees, and officially elected or appointed members of boards, councils, committees, and other components of the Federation.

Indemnification will not be provided to any person who shall be adjudged in a legal action to be liable for negligence or willful misconduct in the performance of duty, or when such person did not reasonably believe that the action was within the law and in the best interests of the Federation.

Indemnification shall cover cost of defense and any judgments, fines, and amounts paid in settlement actually and reasonably incurred by a qualified person, up to a limit of one-million dollars in any single case except in circumstances expressly prohibiting such limitation under the law. Such indemnification shall be in accordance with the established policy of the Federation.

ARTICLE XII. OTHER PROVISIONS

- Section 1. The fiscal year of the Federation shall be on a calendar year basis (1st April to 31st March).
- Section 2. The Federation shall be governed Income tax rules of Order, as currently revised. In case of a conflict between Rules of Order and these bylaws, the bylaws shall take precedence.

ARTICLE XIII. DISSOLUTION OF THE FEDERATION

In the event of the dissolution of the Federation, the Board shall give all its assets to one or more nonprofit, tax-exempt organizations. If the Board cannot decide, the decision shall be made by the applicable Court in the Union territory of Delhi, India

ARTICLE XIII: MODE OF OPERATION & SIGNING AUTHORITY

Founder President and Secretary will be the whole time signing authority and operates banking transaction physically & virtually jointly

Col. Inderjit Singh Barara
President

Dr. Subodh Kesharwani
Secretary

Scholastic Seed Inc.
e-Publishing Aggregator & Periodical Mentor

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Subscription Fees

Country	Indian Membership			Corporate Membership		
Year	One Year	Two Year	Three Year	One Year	Two Year	Three Year
National	₹ 1800	₹ 4000	₹ 6000	₹ 50,000	₹ 1,00,000	₹ 2,00,000
International	$120	$ 200	$300	$1000	$ 1500	$2000
Membership years run 1st January to 31st December of every year						

Please check appropriate registration fee for BFI:

- Student BFI Member ☐
- Student Non BFI Member (includes 1 year membership) ☐
- Senior/Industry BFI Member ☐
- Senior/Industry non BFI Member (includes 1 year membership) ☐

PAYMENT METHOD

Payments should be made by bank transfer at:

Bank Name	:	IDFC Bank
Bank Account No.	:	10020469746
Payment Favouring	:	Scholastic Seed Inc.
IFSC Code	:	020102
MICR Code	:	110751003
Account Branch	:	New Friends Colony (NFC)

For inquiries, please contact Scholastic Seed Inc.

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Peer Reviewed/Refereed/ Quarterly

Dear Mam/Sir,

2019 is really a benchmark for the GJEIS Journal as it had completed the ten year service of serving the researcher and facilitates learning by and large in totality. GJEIS published four times annually (January, April, July, and October). Accordingly, 40 issues have been published in the first 10 years. GJEIS is a methodological journal that focuses on articles about mixed methods research across the Enterprise, Information & System. GJEIS is also an international and multidisciplinary journal that publishes manuscripts in two various categories: methodological/ theoretical papers and original empirical studies. Although there are other methodological journals that publish mixed methods studies, GJEIS focuses exclusively on mixed methods research and solicitants different types of article in GJEIS Journal which mainly focuses on research issues in the EIS and IT related areas.

1.	Empirical Research Papers (ERP) report on completed EIS research that complies with rigorous scientific standards. ERP present original results of completed research studies with the aim of obtaining feedback from fellow researchers. [Limit 16 Pages]
2.	Theme Based Papers (TBP) are short papers that present the design and preliminary results of ongoing EIS research studies with an endeavor of obtaining early feedback and further guidance from experts and peers. TBP will be evaluated using the same academic standards as regular research papers (except for completeness requirements). [Limit 12 Pages]
3.	Case Study Based Papers (CSBP) describes real-life experiences with EIS that authors wish to share with fellow practitioners and EIS researchers. They focus on problems and solutions in specific contexts. Their aim may be to help other practitioners facing similar problems or to solicit help and possible solutions from other practitioners (or EIS researchers). [Limit 10 Pages]
4.	Review of Literature (RoL) aim is to review of the suitable "literature" (books, journals, magazines, URLs, Videos) discussing the topic one want to investigate. It discusses modus operandi and mechanism that are apposite for investigating the subject matter just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis with intent to explore gap. Objective behind creating this type of phenomenon in GJEIS is to give grassroots researcher a roof to synthesize and weigh up the guiding notion of research questions. [Limit 8 Pages]
5.	View Point (VP) is a situation for which something is pragmatic or considered as a point of view. The purpose of VP is to share different views about the IT related products and what individual think about that. [Limit 6 Pages]
6.	Research Thought (RT) can refer to the opinion or arrangement of research ideas that effect from thinking, the act of producing thoughts on diverse interdisciplinary collaborative research areas or tools with which researcher can formulate it's research paper, choose a method for undertaking a study, write up for findings and discuss the outcomes in a discussion section. In this head author can throw a light on various research tools which can be helpful in formulating a research paper. [Limit 5 Pages]

7. Student Research Initiatives (SRI) is a research initiative by a grass-root researcher and technocrats. This head facilitate students/learners to pursue independent academic and imaginative effort and engage in research under the supervision of a faculty mentor with an intention to heighten student research as a means of collaborative learning, critical thinking and the establishment of knowledge. [Limit 12 Pages]

8. Dissertation Snapshot (DS) is an excerpt from a researcher's own thesis or dissertation which had been previously published or submitted in the form of research project or its own doctoral work. The rationale is to raise the curtain on an application and thought used by researcher in a brief manner with an intention to promote the future researchers to sequel their thoughts. [Limit 10 Pages]

9. Questionnaire Format (QF) A new philosophy called "Questionnaire Format" had been introduced, in which we are going to publish distinguish questionnaires that navigates the usefulness of it in building research and how to communicate with the respondents. The rationale behind introducing this QF is to give a glimpse about the structure and the pedagogy. QF on the other hand provides a niche to grass-root researcher about their various thoughts related to preliminary research and facilitates them in linking with a respective research papers which the researcher had visualize or going to plan in a coming future. This is a new inventiveness under the GJEIS Academic Social Responsibility (GASR) and would be complimentary/charitable in nature. [Limit 5 Pages]

10. Book Review (BR) is a literary criticism in which a book is analyzed based on content, style, and merit. BR can be a primary source opinion piece, summary review or scholarly review. Books can be reviewed for printed periodicals, magazines and newspapers, as school work, or for book websites on the internet. A book review's length may vary from a single paragraph to a substantial essay. Such a BR may evaluate the book on the basis of personal taste. Reviewers may use the occasion of a book review for a display of learning or to promulgate their own ideas on the topic of a fiction or non-fiction work. [Limit 3 Pages]

11. Biographical Note of the Luminary in an Area of IS We as per our culture acknowledge in every issue a great leader, Entrepreneur, Technocrats, Academician etc., who contribute a lot to a society in an area of IS. [Limit 2 Pages]

12. Great Enterprise Contribution to Society in Information System Perspectives deals with those enterprises contributing a lot to the society, and considering themselves a wizard in the field of Information System, we publish their profile, with the intention that their creation/contribution would be viewed and duly appreciated by the corporate and academics, all-around the globe. The purpose behind this is to broadcast the most visually powerful, immersive and engaging rich media applications on the Web. [Limit 2 Pages]

13. Award is something given to a person or a group of people to identify their fineness in a definite field especially in an area of EIS, it is rather a certificate of excellence for their contribution in academia or in a corporate world. This start throws a light on an entity or a gamut of researcher who had been honored for their extra ordinary input. [Limit 2 Pages]

14. Homage means great respect and tribute, or something done to honor a person. We in GJEIS pay homage to our ancestor's and say prayers in admiration to their memory which includes academicians, technocrats and great thinkers. The special respect would be shown publicly by sharing their achievements and contributions in writing which includes images, excerpts, testimonials, write-up, etc. [Limit 2 Pages]

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e-Publishing Aggregator & Periodical Mentor

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About New Submission Policy (NSP) 2019

The NSP-2019 consists of following features:

1. Paper will be strictly submitted online at : **www. gjeis.com**
2. Priority would be given to pure empirical article which revolves around first hand information and backed merely by primary data collection will be accepted promptly as these article uses data based on actual observation or experimentation during formulation.
3. It is mandatory for Indian authors to submit research article along with a foreign co-author as a first author or corresponding authors due to journal global in nature characteristics and its wide international presence and listing in various directories across the globe. The submission by the foreign authors will fulfill the global mandate of journal and facilitate in listing and enhanced impact factor in future course of action. Though the journal have been listed in various directories and had a good impact factor but we expect in 2019 to be listed in few leading indexing.
4. There will be a waiting time of minimum **12 months** from the date of submission i.e. April 2019, as paper require rigorous review by **3 internal reviews** from India and **3 blind reviews from outside India** based on the subject expertise and themes.
5. From April 2019 we are putting a Reviewer comment in a Paper under Category Called: Anonymous Reviewer-1, Anonymous Reviewer-2, and Anonymous Reviewer-3. Though tracking record from Submission to online first would depict with various dates in a paper. Visit sample article and reference style. Journal also publishes a similarity index detail of ithenticate plagiarism report at the end of an article.

Paper Code (DOI): $$$$$ **Originality Test Ratio:** @@%**; Submission Online:** DD-MM-YYYY**; Manuscript Acknowledged:** DD-MM-YYYY**; Originality Check (ithenticate):** DD-MM-YYYY**; Peer Reviewers Comment:** DD-MM-YYYY**; Double Blind Reviewers Remark:** DD-MM-YYYY**; Author Revert:** DD-MM-YYYY**; Camera-Ready-Copy:** DD-MM-YYYY**; Editorial Board Citation:** DD-MM-YYYY**; Published Online First:** DD-MM-YYYY

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6. Corporate/Institution who take the GJEIS annual subscription will get a 4 complimentary publication in a year of their employees and faculty
7. Certificates for Article Publication and Reviewers effort would be endorsed and acknowledged with a separate certificate and exclusively send by the Research & Academic Management Society and Scholastic Seed Inc.
8. Form will be submitted with a new link using Google form link available on a GJEIS portal.
9. One indicator of GJEIS's kudos is the impact factor of 2.219 which is coming up gradually due to peer review procedure followed by journal. GJEIS an inaugural impact factor of 2.219. Regarding the topics examined in these editorials, the reflections are about diverse issues: research questions, perspectives, training, data analysis, paradigms, integration, and challenges for mixed methods research, among others. Moreover, some editorials examine the same topic. Thank you for the ten noteworthy years of tenderness, acquaintance, and hold up. We enormously couldn't have made it without you, nor can we catch the next steps without your backing. I hope you'll keep holding us to high standards, and telling us when we've congregates your expectations and when we've let you alongside.
10. Fast Track Publication (FTP) will be enabled for Indian Author with a complimentary subscription of one year either by the Research Institute. Reviewers and other compliance will be managed by the editorial office on a priority basis and paper published in a same quarter if fulfill the eligibility and able to adapt suggestion by a blind reviewers.
11. FTP consist of a features like "Online First" in which article published in a fast track basis and uploaded online without the Volume and Issue date and automatically transfer to the routine forthcoming issue. www. gjeis.com

Subodh K. Kesharwani

Editor-In-Chief
Notified Tenure 2018-2020

Fast track journals are crucial for research articles that are amazingly noteworthy and necessitate essential propagation, or where there is a funding policy raison d'être for urgent publication. Fast-track peer review prioritizes a manuscript and decreases its publication time. GJEIS offers this opportunity by fast tracking as just speedy review and quick publishing. When a paper is marked for fast track during submission line www.gjeis.com it is recurrently reviewed and a publication decision is made swiftly. Fast tracking might also shrink the amount of time allocated for peer review and editing as it will parallel send to blind and peer reviewer and constantly dedicated publishing team would be allocated simultaneously. It typically cuts the overall publication time by at least one-third.

GJEIS have developed fast-track peer review options to restrain some of the needless instance that lapses between a manuscript being submitted and its periodical. GJEIS Fast Track Publication service which better known as FTBS is an **"optional service"** which provides author a platform to publish their papers in **just 9 weeks**, usually a journey time from submission to publication takes 12 Months. The purpose of creating **FTPS** is to facilitate the author in publication of their paper in a prescribe time frame and do all the process in a fast track mode without compromising with quality. There are certain prerequisites which are mandatory to include under FTPS:

- ✓ Article should be Plagiarism Free and pass the Originality Test by http://www.ithenticate.com (Prevention Plagiarism tool) with similarity test index below (10%)
- ✓ Expedited review will be offered, on request, for submitted research articles after the editorial board consist of 5 members approved.

GJEIS has started a non-compulsory speedy examination for fast-track publications to draw attention to noteworthy developments in the various fields of the academic research without compromise with superiority. GJEIS goal is to endow with the research group of people with rapid and on the spot entrée to freshly completed research works in a variety of research vicinity that are speedily developing with great impending impact. The research community as a whole advantageous from the realism that primary edge research is made reachable to a extensive audience more punctually. Kindly note that we acknowledge a limited number of the article under fast track in one quarter due to it's frequency and further email journal's primary contact for the inquiry. After receiving express review request for the article, we will tell to our contributor in a week time whether we can offer rapid review for the submission or not. If we decide not to we may offer to think about your paper either in the normal mode or provide you date from when we can consider it under rapid review.

FASTTRACK
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There are certain amount attracted by the author if they avail this FTPS service, which is not pre-decided but based on the article creditability and its testimonial, nonetheless it takes into contemplation the following cost levied:

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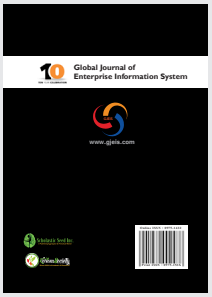
- Article having Zero% Plagiarism checked by iThenticate a plagiarism detection service with a research orientation automatically comes under waiver list and published within 9 Weeks from the date of Submission or generation of DOI from Crossref USA www.gjeis.com

Note

This facility is an optional service, hence the price quote would be based on article-to-article and would be intimated by the editorial office depend on the submission and subject to aforementioned points under waiver list

Disclaimer

GJEIS is a Peer Review restricted access subscription base Research Journal started in a year 2009 and does not charged any fees or Article Processing Charges(APC) from the author during or after publication. Fast Track Publication service (FTPS) is an optional service which had been originated to facilitate the submitter to reduce the time-frame and helping in strengthen their rights.



Scholastic Seed Inc. is in the e-publishing business from last one decade. The first creation the group had originated was the Peer Review Research Journal founded in the year 2009 known as Global Journal of Enterprise Information system (GJEIS). At the later stage group has come up with a sequel in the form of a medical journal in collaboration with it academic and research consortium NGO, KARAM Society & MEDANTA Hospital doctors in a name of AGEMS (Annals of Geriatric Education and Medical Sciences). The consortium currently having contemporary out-of-box approach and are now well acknowledge as an e-publishing aggregator and periodical mentor. The company till date had published few journals and facilitates/consulted lots of Brick-&-Mortar periodcials into a digital dynamic format. Till date we had consulted 20 periodical and entered into a book publishing business.

Journal Initiated under Scholastic Seed Ambit

GJEIS-2009
KARAM Society & Informatics Publishing Ltd.

AGEMS-2014
KARAM Society & Innovative Publications

SIRIFORT-2018
Sirifort Institute of Management Studies & KARAM Society

CYBERNOMICS-2018
Scholastic Seed Inc. & KARAM Society

E-GOVERNANCE-2018
Scholastic Seed Inc. & KARAM Society

Scholastic Seed helps to scholar in publishing Paper in an impact factor indexed journal

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- Specialized Subject-area Matching
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- Enhanced Pre-submission Peer Review
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- Review Correction and Re-Submission
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How the Credit ability of an institute deteriorated without periodicals

- As we know that Institution creditability would be judged on the basis of the periodicals they published as these periodicals such as newsletters, journals, magazines, annual reports, etc are their front face and if these front face are digitally equipped it would be definitely a win-win stage for the students and the institutions and further by adding a feather in a cap.

Why there is a need of Online Periodicals

- Free access • Self-archiving • Repository • Author foot fall • Pre or post publication irrational fear Eradication

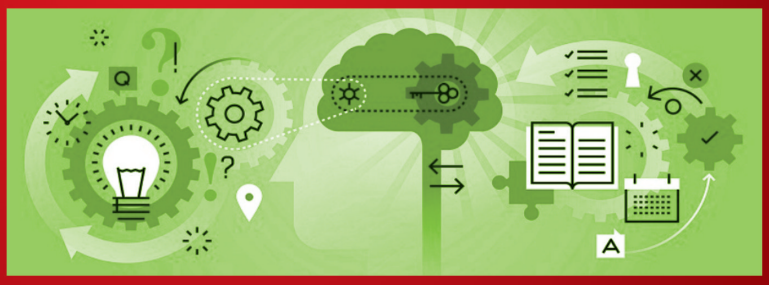
DO's AND DON'T

- Digital Publication is as good as print publication
- Always Prefer Open Source Journal and Digital Format as it circulate fast and perpetual in nature.
- Have a Digital Object Identifier (DOI)
- Have a good team of editorials and reviewers
- Google Scholar and Citation is an important ingredients for choosing a journal
- Scopus, ICI, WoS and UGC Listing is a parameter to select journal
- Always check the H-index of an author
- Know the Impact factor of journal before Publishing an article
- Check the Ethical issue and Privacy Policy of the journal
- Frequency and consistency would be an important ingredient to judge the creditability

- It is suggested to an editor not to publish anything without Originality check
- Don't Prefer Pay and Print Model

Services

How Scholastic Seed Involved with institution in E-publishing and Journal making



- Website Creation includes coding in PHP and SQL Database Ready-to-Run Software with a Source code right transfer model.
- Sub-domain and hosting on a pro-rata basis (domain and hosting will be given to the respective institute with an ownership transfer)
- Digitalizing the Content Electronically and Uploading on Web (Frequency: Monthly, Quarterly, Bi-annually & Annually)
- Online tracking of articles submitted.
- Online manuscript submission.
- Updates about your manuscript delivered via e mail and SMS.
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- Facilitate in Papers abstract/indexed by all the major scientific indexing services.
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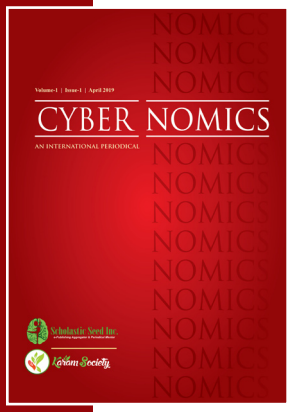
- Call For Paper Arrangement of Article Plag Check, Interaction with Author, Proof Reading
- Other Indexing would be done by the society/ Scholastic Seed Inc. time-to-time, but other expenditure incurred would intimate and levied accordingly if charge by the agency on time-to-time basis.
- Process for Both eISSN and ISSN and Documentation
- Facilitate in Getting RNI No. From Registrar Of Newspapers For India

CYBER NOMICS

CYBERNOMICS is being published as a co-published peer-reviewed magazine by KARAM Society and Scholastic Seed Inc. The subjects covered by the magazine are IT linkages in business and management and others field related to cyber and its economics fields. It also covers many aspects in Information System and related areas which are burgeoning. The Magazine provides an international forum for the exchange of ideas, principles and processes concerning the application of diverse topics of Cyber to organizations, institutions and the world at large. CYBERNOMICS considers research submissions in several categories but revolves around Cyber threats, Security remedies, etc.



CYBERNOMICS magazine aims at achieving the growing demands for understanding and addressing issue pertaining to real-worlds Cyber-Attacks, Cyber Threats, Cyber threat Intelligence, Cyber Warfare, Cyber Terrorism, Darknet and Crypto Currencies and threats to information infrastructures critical to the national security of country.

The magazine publishes articles and reviews in the areas including, but not limited to:

- Cyber Threats
- Cyber Warfare
- Darknet and Darkweb
- Cryptography and its applications
- Network and critical infrastructure security
- Hardware security
- Software and System security
- Cybersecurity data analytics
- Data-driven security
- Adversarial Reasoning
- Malware Analysis
- Privacy-enhancing technologies and anonymity
- IoT Security
- Blockchain Security
- Cryptocurrencies
- Machine Learning
- Big Data Analytics
- Artificial Intelligence

Global Journal of Enterprise Information System

GJEIS Indexing till 2019

GJEIS in collaboration with Scholastic Seed Inc. and KARAM Society, publishes a new peer-reviewed open access e-journal in Enterprise Information System (EIS) areas of business which covers IT linkages in business, finance, marketing, management, organizational behaviour, buyer behaviour and other relevant fields. It also covers many aspects in Information System and related areas. The journal provides an international forum for the exchange of ideas,principles and processes concerning the application of diverse topics of EIS to organizations, institutions and the world at large. GJEIS considers research submissions in several categories but revolves around three buzzwords Enterprise Information and System Journal takes into consideration professional plagiarism detection and prevention technology for it's scholarly publication and research article in order to ensure the originality of written text before publication. The GJEIS receives submissions only through it's journal website www.gjeis.com. The journal has a very good impact factor and is listed and indexed in almost fifty directories and libraries all around the globe. GJEIS is also a scholarly publisher that uses services of Crosscheck offered by CrossRef, USA and facilitated by iThenticate software. The journal had implemented a Search Engine Optimization (SEO) and web analytics dedicatedly for it's online portal to provide glimpse about the articles having highest citation. GJEIS is also associated with International DOI Foundation (IDF) USA. GJEIS is also concomitant of Publsher International Linking Association, Inc (PILA) a not-for-profit membership organization. USA.

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Deep Learning Architectures is a class of Machine Learning Algorithms

11TH ANNIVERSARY

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