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From the Editor's Desk…

I am delighted to present to you five articles, and two book reviews in Volume 5, Issue 1 of Great Lakes Herald. Many thanks to the authors for submitting their fine work as well as the many reviewers who contributed their intellectual energy toward the journal's success so far.

Venkat R. Krishnan
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THE BIG THREE DETERMINANTS OF PERFORMANCE: GENERAL MENTAL ABILITY, PERSONALITY, AND EMOTIONAL INTELLIGENCE

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Abstract. *This paper investigates the impact of Emotional Intelligence, General Mental Ability and conscientiousness, on managerial performance to check if Emotional Intelligence predicts managerial performance over and above conscientiousness and General Mental Ability. The study was conducted on a sample of 100 MBA students with prior managerial experience, and used three measures of managerial performance- one self-report (measuring intrinsic performance) and two objective measures (measuring extrinsic performance). The results showed that subjective and objective measures of performance were not related and EI predicted managerial performance over and above GMA and conscientiousness for the self-report measure of managerial performance but EI was not related to the other two objective measures of performance.*

Managerial effectiveness and success is vital for any organization. Competitive organizations are often those, which are led by decision makers who are highly effective in every managerial activity, be it decision making, handling interpersonal relationships, or adapting to changing business environments. Any tool, which would help in predicting workplace success, is thus highly valued in the field of management development. In this context, the concept of Emotional Intelligence (EI) becomes highly significant. Cognitive intelligence is intuitively considered a valid predictor of occupational success and several decades of psychological assessment research have vindicated the importance of taking social competencies and personality differences into consideration when attempting to predict high performance. Recently however, several claims have appeared in popular literature and in the media about the significant role of EI in the workplace. EI has been claimed to predict a variety of successful behaviors at work, at a level exceeding that of intelligence (Zeidner, Mathews, & Roberts 2004). Critics of EI however, point out a lack of empirical evidence to back these claims and often dismiss it as a construct, which is just a conglomerate of desirable traits. In spite of these criticisms, much of the current interest focusing on EI in organizational settings stems from a desire to explain differential attainment of occupational success, which is not adequately accounted for by cognitive intelligence or personality. In view of this, the present study aims at exploring the impact of EI in predicting managerial success, over and above that predicted by General Mental Ability (GMA) and personality traits.

LITERATURE REVIEW AND HYPOTHESES

Managerial Performance

In the field of management development, there is a strong view that there are three overlapping categories of managerial skills, namely, task related, people related and self-related. Some empirical evidence shows that people related skills are the most significant ones when it comes to enhancing managerial effectiveness (Analoui, Labbaf & Noorbakhsh, 2000). Yet another view suggests that the manager's job is linked with three major dimensions—technical, conceptual, and human (Katz, 1974). Thus, it is evident that a manager needs several skills and traits to be successful. Some of the important factors considered to predict success in a managerial role are cognitive ability and personality factors. Of late, emotional intelligence is also being considered as essential for managers to be successful.

Since a manager's job is a multifaceted one, success as a manager can be measured along different dimensions. Career success is often considered to have both extrinsic and intrinsic components, the former defined in terms of pay, promotions, etc. and the latter through factors like job satisfaction (Judge, Higgins, Thorensen, & Barrick, 1999). Past research shows that career success is best measured as a combination of subjective and objective measures (Turban & Dougherty, 1994). Subjective measures include various self or peer report questionnaires while objective measures include salary, number of promotions, number of job offers, Grade Point Average (GPA), etc. This study uses both subjective and objective measures to capture managerial performance.

Emotional Intelligence (EI)

Over the past several years, the concept of emotional intelligence (EI) has become very popular within the academic community and organizations, especially those in the service sector. The concept of EI first appeared when Salovey and Mayer (1990) defined it as 'the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions'. They considered EI as composed of four dimensions: the appraisal and expression of self-emotions, the appraisal and recognition of emotions in others, the regulation of self-emotions, and the use of emotions to facilitate performance. EI thus visualized, is generally called the 'ability' model of EI and is considered by many in the academic circles to meet the standards of a true form of intelligence. However, the popularity and interest among the masses regarding EI has been primarily due to the work of Goleman (1995), in which EI is a much broader concept including a variety of personality and behavioral characteristics. Hence, this model is considered a 'mixed' model. The ability model strongly argues that EI constitutes an additional aspect of intelligence involving emotion, whereas the mixed model has blended EI with numerous other characteristics such as motivation, well-being and personality for which there are already a wide range of reliable and valid measures in existence (Cartwright & Pappas, 2008).

Critics of EI claim that as a construct, it does not predict anything more than what is predicted by other factors like personality. One reason for the wide spread criticism may be because EI has often been touted in the popular press as a panacea for many organizational problems, without sufficient empirical backing. Another reason is that there are several models and definitions for EI and the construct is measured using a variety of instruments in different research studies, yielding mixed results. When defined and measured properly, EI is indeed a valuable concept and has been considered by several researchers as a construct that reflects personal characteristics and how they affect situations to impact behavior (Shipper, Kincaid, Rotondo, & Hoffman, 2003). Further, strong evidence has been found for the discriminant and incremental validity of EI against personality traits (Petrides, Pita, & Kokkinakki, 2007). EI was found to be related to and yet distinct from personality dimensions and to have incremental predictive power on life satisfaction (Law, Wong, & Song, 2004). In addition, Caruso, Mayer, and Salovey (2002) found that EI can be measured reliably and is relatively independent of traditionally defined personality traits, supporting the discriminant validity of the EI construct. In short, a careful review of literature reveals that many of the criticisms regarding EI are due to the ambiguity in its definition and measurement and that there is in fact very good empirical support to the fact that it is in fact a distinct and useful concept.

Over the last two decades, there have been several studies on the usefulness of EI in predicting work and life outcomes in a variety of settings. It has been suggested that a person's ability to adapt and cope in life depended not only on the rational abilities measured by IQ tests, but also on an integration of emotional and rational abilities (Rapisarda, 2002). Hundreds of studies have been conducted to find the relation between EI and job performance parameters like managerial success. EI has been found to be positively correlated to task performance and organizational citizenship behaviors (Carmeli & Josman, 2006). Ashford and Tsui (1991)

found that managers who demonstrated high self-regulation by seeking negative feedback were perceived to be more effective than those who sought positive feedback. EI was found to be positively correlated to managerial innovation and effectiveness (Yuvraj & Srivastava, 2007) and several aspects of organizational learning (Singh, 2007). Emotionally intelligent leaders were found to be able to evaluate team members' emotional situations, manage conflicts, and encourage supportive interactions thus creating an environment that induces collective motivation in the team (Prati, Douglas, Ferris, Ammeter, & Buckely, 2003). In addition, EI was found to be positively related to general well-being (Lenaghan, Buda & Eisner, 2007). Thus, past research clearly shows that there is a strong relation between EI and a variety of performance related work outcomes. Based on the above reasoning, we propose that EI will be positively related to managerial performance as a manager's job includes an ability to perform well at day-to-day tasks as well as to skillfully interact with subordinates, peers, and superiors necessitating the understanding and regulation of ones own and others' emotions.

Hypothesis 1. Emotional Intelligence is positively related to managerial performance.

General Mental Ability (GMA)

General mental ability (GMA) is a conceptualization of intelligence that is widely used. It has been defined as a very general mental capability, that among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience. Put more simply, it is defined as the ability to learn. Contrary to popular conception, GMA refers not to genetic potential, but to developed general cognitive ability. The fact that GMA scores are influenced by genes does not change the fact that they reflect more than just genetic potential (Schmidt, 2002).

GMA measures have been found to be valid predictors of job performance across several occupations (Salgado, Anderson, Moscoso, Bertua, Fruyt, & Rolland, 2003). Schmidt and Hunter (2004) claim that GMA predicts occupational level attained and performance within one's chosen occupation better than any other ability, trait, or disposition and better than job experience. Further, Fulmer and Barry (2004) suggest that GMA influences performance in various situations (job performance, training success, educational attainment, etc.), and it becomes even more predictive of performance as situations become more complex (e.g., in managerial jobs and under conditions of unexpected change). Thus, a review of the existing literature very clearly shows that GMA is an important factor in predicting job performance and career success. Based on this, it seems reasonable to infer that even in the case of a manager, a high degree of mental ability may very well lead to superior job performance.

Hypothesis 2: General Mental Ability will be positively related to managerial performance.

Personality

During the 1980s, the views of many personality psychologists began to converge regarding the structure and concepts of personality. Generally, researchers agree that there are five robust factors of personality, which can serve as a meaningful taxonomy for classifying personality attributes. The work of Norman (1963) is of particular significance because his labels (extraversion, emotional stability, agreeableness, conscientiousness, and culture) are used commonly in the literature and have been referred to, subsequently, as "Norman's Big Five" or simply as the "Big Five." The first dimension in the Big Five is extraversion, and traits commonly associated with it include being sociable, gregarious, assertive, talkative, and active. There is also general agreement about the second dimension. This factor has been most frequently called emotional stability, stability, emotionality, or neuroticism. Common traits associated with this factor include being anxious, depressed, angry, embarrassed, emotional, worried, and insecure. The third dimension has generally been interpreted as agreeableness or

likeability. Traits associated with this dimension include being courteous, flexible, trusting, good-natured, cooperative, forgiving, softhearted, and tolerant. The fourth dimension has most frequently been called conscientiousness. Associated traits include dependability, being careful, thorough, responsible, and organized. It is also considered to incorporate volitional variables, such as hardworking, achievement-oriented, and persevering. The last dimension has been interpreted most frequently as openness to experience. Traits commonly associated with this dimension include being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive. While there is general agreement among researchers concerning the number of factors, there is some disagreement about their precise meaning, particularly conscientiousness and culture factors. In spite of this, the five-factor model serves as an orderly classification scheme widely used for the accumulation of empirical results (Barrick & Mount, 1991).

There are numerous studies, which have explored the link between personality traits and job performance. Personality difference variables like achievement orientation and general self-esteem were found to have significant direct and moderating effects on the effectiveness and performance of store managers (Lusch & Serpkenci, 1990). Two of the Big Five Traits, conscientiousness and extraversion were found to be positively associated with job-performance (Thorenson, Bradley, Bliese & Thorenson, 2004). In a meta-analysis on the relation between personality and job performance, Barrick and Mount (1991) found that conscientiousness predicted various criteria of job performance across occupation types. In view of these findings from past research, we predict that conscientiousness will be related to managerial performance.

Hypothesis 3: Conscientiousness will be positively related to managerial performance.

The Impact of EI over and above GMA and Conscientiousness on Managerial Performance

As is evident from the preceding discussion, EI, GMA and conscientiousness have all been shown as having positive association with managerial success. Although a large number of studies use a linear effect model, which proposes that these constructs influence occupational success by making independent contributions, there are very few studies, which have considered the impact of all three simultaneously on managerial success. This has been pointed out by Antonakis (2003), who says that evidence for EI as a viable construct, independent of IQ and personality factors is sparse, and that there are few studies, which show that EI predicts leadership effectiveness beyond what is predicted by GMA or the Big Five or a combination of the two. Further, Brody (2004) says that there is not a single study reported that indicates that EI has nontrivial incremental validity for a socially important outcome variable after controlling for intelligence and personality.

However, Wong and Law (2002) have argued that when properly defined and measured, EI is a true form of intelligence and is distinct from GMA and personality. Using a new EI scale, they showed that on top of general mental abilities, EI was a good predictor of job performance. In addition, Law, Wong, and Song (2004) have demonstrated empirically that EI is distinct from personality dimensions and have established the predictive validity of EI in social and organizational settings. The vocation of a manager involves interaction with other individuals in a variety of contexts. Once social interactions are involved, emotional awareness and emotional regulation become important factors affecting the quality of the interactions (Wong & Law, 2002). These factors are integral to the concept of EI and can explain why EI is able to predict success over GMA and personality.

In view of the above discussion, it is reasonable to predict that while all the three variables are related to managerial success, EI captures some unique dimensions of managerial success,

which cannot be captured by GMA or conscientiousness. Thus, we aim at finding this incremental validity of EI in predicting managerial performance over what is predicted by general mental ability and conscientiousness.

Hypothesis 4: Emotional intelligence is positively related to managerial performance after controlling for GMA and conscientiousness.

METHOD

Participants and Procedure

A survey was conducted among students pursuing a one-year MBA program, who had prior experience in supervisory or managerial roles in organizations across India. The survey was sent to the participants over email and had separate scales to capture the different variables. The respondents were informed about the purpose of the study and were assured of confidentiality of the data provided. The participants were requested to refer to their earlier experience to answer questions pertaining to managerial performance, salary etc. One hundred and four responses were received and after filtering for missing data, 100 responses were used for the data analysis.

Out of the 100 respondents, 76 were male and 24 were female. The work experience of the respondents ranged from nine months to 93 months with a median value of 44 months. The annual incomes varied between Rs.216,000 to Rs.1,200,000 with a median of Rs.450,000. The participants represented four industry sectors, Information Technology (IT; 74%), manufacturing (17%), shipping (5%), and others (media, education and entrepreneurial ventures; 4%).

Measures

Managerial performance was measured in three ways. First, a 45-item scale developed by Gupta (1996) was used to measure self-reported managerial performance (called managerial effectiveness). This measure uses a 5-point Likert scale. The scale had a Cronbach's alpha score of 0.93 for this study, indicating high degree of internal consistency in the measure. Second, in line with past research (Dreher & Ash, 1990; Joshi, 2008; Scandura, 1992; Turban & Dougherty, 1994; Whitely, Dougherty, & Dreher, 1991), a more objective measure of managerial performance, the ratio of salary to number of years of work experience (called managerial success) was also collected. Third, the cumulative grade point average (CGPA) achieved by the students during their course of instruction in the MBA program was used as the third measure of managerial performance. The evidence on the linkage between CGPA and career success is mixed—some studies have shown that high CGPA is related to positive career outcomes (Harrell & Harrell, 1974; Roth, BeVier, Switzer III, & Schippmann, 1996) while others (Bretz, Jr., 1989) have found no significant relationships. The CGPA earned by students in a business school depends on their performance not only in conventional examinations but also in projects, term papers, presentations, and simulation exercises and hence it is likely to be highly predictive of students' performance as managers later in their career. Moreover, recruiters on campuses regularly use CGPA as a screening device and as a means of predicting future performance (Rynes, Orlitzky, & Bretz, Jr., 1997). Values for CGPA for this sample, ranged from 2.64 to 3.79 with a median value of 3.28. Together the three measures of managerial performance cover the domains of "extrinsic" (or observable and objectively measurable) success and "intrinsic" (subjective reactions of the individual) success which have been used in earlier research (Judge, Cable, Boudreau, & Bretz, 1995; Turban & Dougherty, 1994).

Emotional intelligence was measured using the Wong and Law Emotional Intelligence Scale (WLEIS; Wong & Law, 2002). WLEIS is a 16-item scale, based on the ability model of EI and uses a 7-point Likert scale. Overall Cronbach alpha for this scale in this study was 0.69.

Conscientiousness was measured using 20 items from the International Personality Item Pool (IPIP, 2001). This measure uses a 5-point Likert scale. Cronbach alpha for the scale was 0.86.

GMA was also measured using the IQ scale developed by Eysenck (1962). This is a 40-item questionnaire intended to be completed in 30 minutes. The IQ scores ranged from 109 to 132 with the median value being 122.

Table 1

Means, Standard Deviations, and Intercorrelations amongst GMA, Conscientiousness, EI, and Managerial Performance.

	M	*SD*	1	2	3	4	5	6	7	8	9	10
1. GMA	122.63	05.56										
2. Conscientiousness	003.59	00.52	0.20*	*(.86)*								
3. EI	005.40	00.72	0.23*	.27**	*(.69)*							
4. Managerial effectiveness	003.80	00.47	0.35**	.32**	.52**	*(.93)*						
5. Managerial success	143,423	43,591	0.09	-.17†	.06	-.06						
6. CGPA	003.25	00.23	0.30**	.20*	-.01	.06	-.12					
7. Age (in years)	024.94	01.40	0.10	.14	.12	.17†	-.30**	.22*				
8. Gender (Male = 1, Female = 2)	001.24	00.42	-.18†	.06	.00	-.05	.00	-.03	-.23*			
9. Work Experience (in months)	044.42	16.04	0.08	.09	.04	.14	-.36**	.23*	.95**	-.24*		
10. Salary (in Rs.)	509,780	199,925	0.22*	.02	.14	.15	.36**	.14	.67**	-.26**	.66**	
11. Industry (IT = 1, Manufacturing = 2, Others = 3)	001.35	00.64	-.15	-.07	.00	-.14	-.03	-.06	-.04	-.05	-.02	-.08

Coefficient alphas are in parenthesis along the diagonals; N = 100.

† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$.

RESULTS

Descriptive statistics, coefficient alphas, and correlations among all the measures are presented in Table 1. Moderate correlations were displayed between GMA and conscientiousness, EI and managerial effectiveness as well as conscientiousness and managerial effectiveness.

Three sets of stepwise regressions were done in three steps each with each of the three measures of performance viz. managerial effectiveness (self-reported), managerial success, and CGPA as the dependent variable. In the first step only GMA and the control variables were regressed on the dependent variable, in the second step conscientiousness was added, and in the third step, EI was added. The outputs of the regressions are shown in Table 2.

Table 2: Summary of regressions to study the impact of GMA, Conscientiousness, and EI on Managerial Performance

	Managerial Effectiveness			Managerial Success			CGPA		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
GMA	.33**	.28**	.21**	.11	.15	.13	.31**	.29**	.31**
Conscientiousness		.22*	.12		-.16†	-.19†		.11	.14
EI			.44**			.12			-.13
Age	.42	.29	-.03	-.32**	-.30**	-.31**	-.03	-.10	-.00
Gender (Male = 1, Female = 2)	-.00	-.02	-.03	-.03	-.01	-.01	.04	.03	.03
Work experience	-.28	-.20	.14	-	-	-	.31	.35	.25
Salary	-.03	.00	-.04	-	-	-	-.10	-.08	-.06
Industry (IT = 1, Manufacturing = 2, Others = 3)	-.14	-.12	-.15†	-.03	-.05	-.05	-.04	-.03	-.02
Adjusted R^2	**.13**	**.16**	**.33**	**.07**	**.09**	**.09**	**.09**	**.10**	**.10**
Overall F	**3.43****	**3.79****	**7.07****	**2.95***	**2.96***	**2.75***	**2.74***	**2.54***	**2.44***
ΔR^2		**.03**	**.17**		**.02**	**.00**		**.01**	**.00**

*Standardized regression coefficients are shown. N = 100. † p < 0.1; * p < 0.05; ** p < 0.01.*

The results of the first set of three regressions show that GMA, conscientiousness, and EI are all significantly related to self-reported managerial effectiveness. In fact, in the third stage when EI enters the equation, conscientiousness ceases to be a significant predictor of managerial effectiveness. This implies that EI predicts self-reported managerial effectiveness better than conscientiousness. In fact, if we compare the standardized regression coefficients we find that EI is twice as important as GMA in predicting self-reported managerial effectiveness.

The results of the second set of three regressions show that none of the three hypothesized variables viz. GMA, conscientiousness, and EI, was significantly related to managerial success. The results of the third set of three regressions show that GMA is a significant predictor of CGPA; however, conscientiousness and EI have no impact on CGPA.

DISCUSSION

This study investigated the impact of EI, GMA and conscientiousness on managerial success. The study also looked into the incremental impact of EI over and above the other two factors in predicting managerial success. The results showed that the independent variables, EI, GMA and conscientiousness showed moderate correlation (varying from .20 to .31) as shown in Table 1. This is expected, as conceptually there is some amount of overlap between them. For example, by definition, EI is an ability and thus qualifies as a facet of intelligence. Moreover, in order to be considered as a true form of intelligence, EI needs to display moderate correlation with other forms of intelligence like cognitive intelligence or IQ (Wong, Law & Song, 2004).

There was no relationship between the intrinsic and extrinsic measures of managerial performance. This finding is consistent with that of Judge and Bretz (1994) who suggest that these two measures are independent. One reason for this for this could be the limited validity of these measures. Since there are several dimensions to managerial performance, we used three different measures, one subjective measure (self-reported managerial effectiveness) and two objective measures viz. managerial success (defined in terms of salary earned per years of work experience) and CGPA. Another reason for the lack of a significant relationship could be that subjective managerial performance and objective managerial performance could be two very different things. In other words the extent to which individuals are satisfied with their performance may have little to do with tangible achievements.

We found that EI is a strong predictor of (subjective) managerial effectiveness even after controlling for the effect of GMA and conscientiousness. In fact, EI is twice as important as GMA in predicting managerial effectiveness. Emotionally intelligent individuals are likely to be very effective in work related environments where output is a function of team effort and not just individual ability or effort. Moreover, they are likely to perceive their work to be better and are hence likely to be more satisfied with their work.

On the other hand, we found that EI was not related to (objective) managerial success and neither did it have any impact on CGPA. The CGPA achieved by a student was purely a function of GMA. One reason for this could be that most of the respondents were between 22 and 29 years of age (the median age was 25) and having work experience between nine months and 93 months (the median work experience was 44 months). At an entry level, factors such as educational background, individual abilities, and individual efforts are likely to be more valued by companies rather than EI. Similarly, academic success is likely to be solely based on performance in examinations, which also is largely a function of GMA rather than EI. A second reason for this could be that EI has limited impact on objectively measured performance and this meager impact could not be detected in this small sample (perhaps due to range restriction). Perhaps a larger sample size may reveal significant effects of EI on objectively measured managerial performance. A third reason for the limited impact of EI on objective managerial performance could be the presence of moderators of the EI-performance relationship. The EI-performance relationship may be significant only when the job role involves a large amount of interpersonal interaction.

Limitations

A limitation of this study is that the only significant relationship between EI and a measure of managerial performance is based on a self-report measure and hence the findings could be because of common-method variance (Podsakoff & Organ, 1986). While self-reported objective and demographic data is easily verifiable, other information like personality traits, behavior, feelings, attitudes, and perceptions are not. One of the remedies suggested for the common method bias is the use of independent sources for predictor and criterion variables (Podsakoff & Organ 1986; Podsakoff, MacKinzie, Lee, & Podsakoff, 2003). Hence, future studies should try to measure EI and managerial effectiveness from different sources.

Another reason for the lack of significant findings could be due to range restriction caused because of a small sample size consisting of respondents having very similar characteristics. Studies on larger and more heterogeneous samples may reveal significant relationships between measures of ability and objective measures of managerial performance.

Conclusion

Personality factors and cognitive ability have traditionally been considered the main predictors of high performance and career success. Over the past several years, emotional intelligence is being written about as a valid predictor of a variety of organizational success factors. However, there has also been criticism that EI is in fact not a useful construct and that it does not predict much other than what is predicted by personality and GMA. We tried to investigate the impact of these three factors, GMA, personality, and EI on managerial performance. This study used three measures for managerial performance, one subjective measure that was self-reported by the respondents and the other two measures based on objective information from independent sources. The results showed that when the subjective measure was used, all three of the independent variables viz. GMA, conscientiousness, and EI were positively related to managerial performance and more significantly, EI had the strongest impact on self-reported managerial effectiveness. When the objective measure was used, EI was not found to be related to managerial performance. Thus, EI may make an individual more satisfied with his or her performance; however, the impact of high EI may not be visible in more visible measures of performance.

Despite limitations, this study has some significant implications for practice. First, managers should strive to include more holistic measures of performance, which include aspects of teamwork such that the EI abilities of employees are gainfully harnessed and appreciated. Second, academic institutions must broaden their assessment models such that they include aspects of conscientiousness as well as EI and not just GMA. Finally, researchers must explore the role of EI in setting expectations and coping with unpleasant realities in one's environment. In this manner EI could be a significant predictor of happiness, satisfaction, or subjective well being. It is likely that individuals with high EI set more realistic expectations, easily adapt themselves to adverse circumstances, and as a result evaluate themselves and their circumstances more favorably.

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CORPORATE STAKEHOLDERS MANAGEMENT AT DUN & BRADSTREET TRANSUNION ANALYTIC & DECISION SERVICES PVT. LTD.: A CASE STUDY

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Abstract. Corporate stakeholders management refers to the organizational philosophy wherein the organization's overriding aim / priority is to contribute to its stakeholders' welfare during the organizational decision making process to the extent possible, keeping in mind the fundamental considerations of justice and economic interests. Experts have advocated a number of principles, propositions and theories for the implementation of this concept. However, based on the extant literature reviewed, the authors found an acute dearth of corporate case studies detailing the actual implementation of stakeholders-related practices in corporate organizations. A few case studies were found in the social sectors. However, there was no case on the noteworthy practices of corporate organizations in this regard. In this paper, the authors have made an attempt to highlight the customer and employee-related practices of a five year young company in the ITES sector – Dun & Bradstreet TransUnion Analytic & Decision Services Pvt. Ltd. In 2009, Ethisphere ranked the parent Dun & Bradstreet (USA) as one of the World's Most Ethical Companies. This subsidiary captive unit in Chennai has over the last five years of its formation made noticeable strides with respect to its customers and employees. The data collection for the case has been done by the authors through personal interviews with top executives of the company and supplemented through other information provided by the company and that available in the public domain.

Key Words: Corporate Stakeholders Management; Customer Welfare; Employee Welfare; Social Systems Engineering Tools; Dun & Bradstreet TransUnion

[Dedication: The authors humbly dedicate this endeavor to the Revered Chancellor, Sri Sathya Sai University – Bhagavan Sri Sathya Sai Baba.

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COMPANY INTRODUCTION

D&B TransUnion Analytic and Decision Centre (D&BTUADC) refers to itself as a global center of excellence specialized in providing services and solutions in the areas of analytics and scoring, data rationalization and management, credit bureaus and risk management and rating. It has a rich heritage carved out of a joint venture of D&B International (24.5%), D&B South Asia Middle East (51%) and TransUnion (24.5%).

History of the Founder Companies

Dun & Bradstreet (D&B)

D&B (NYSE:DNB) is said to be a unique source of commercial information and insight on businesses, enabling companies to Decide with Confidence® for 167 years. It was founded in 1841 by Lewis Tappan, an enterprising businessman and great grand nephew of Ben Franklin, who began providing information to other merchants to assist them in their decision making. His mercantile agency, located in New York city, was one of the first organizations formed for the sole purpose of providing business information to customers. In 1849, Benjamin Douglass entered the business to foster expansion and expanded his network of offices by capitalizing on the improved transportation and communication of the time. The late 1800s and early 1900s

were years of expansion and intense competition. In 1859, Douglass turned over the agency to his brother-in-law, Robert Graham Dun. In 1865, Dun invested $15,000 in the company's first print shop to begin publishing Dun reference book every 6 months. In 1874, the mercantile agency placed the first commercial order for 100 typewriters, enabling them to prepare credit reports on carbon paper, sending one copy to customers. The rival John M. Bradstreet Company was founded in Cincinnati, Ohio in 1849. Two years later, the Bradstreet organization popularized the use of credit ratings with publication of the first book of commercial ratings.

The Historic Merger of Dun and Bradstreet: As America entered the 1930s, R.G. Dun's CEO Arthur Whiteside engineered a merger with its rival The Bradstreet Company to form Dun and Bradstreet in 1933. Previously both the companies sold 'products'. In contrast to this, Whiteside increasingly emphasized 'service'. He led D&B out of the depression and into the information Age.

Presidents of USA as Employees: D&B has a unique distinction of having four of the presidents of the country working as their employees at some point in time in their professional careers. In the 1840s Abraham Lincoln joined the mercantile agency as a credit correspondent. Three other presidents also served as correspondents which includes Ulysses S. Grant, Grover Cleveland and William B. McKinley.

Growth and Expansion: During the 1960s and 1970s, the company witnessed explosive growth. Whiteside's successor, J. Wilson Newman, continued the path of expansion by taking risks and increasing its range of products and services. Overall, D&B expanded dramatically during the 1960's by engineering ways to apply new technologies to evolving operations. One of the major initiatives was the introduction of the Data Universal Numbering System (D-U-N-S) in 1962 to identify businesses numerically. D&B D-U-N-S number has become a standard business identifier for world's most influential standards-setting organizations (ANSI, UN/EDIFACT, ISO) and by more than 50 global industry and trade associations, as well as the United Nations, the European Commission and the U.S. Government.

The first computerized database publication was done in 1965 and the first computer generated credit report in 1972.

However, this rapid growth through acquisition resulted in a lack of focus and resulted in a series of divestitures in the 1990s such as:

- 1991 – Donnelly Marketing was sold
- 1996 – IMS was spun off as Cognizant
- 1996 – A C Nielsen was spun off
- 1998 – R H Donnelly was spun off
- 2000 – Moody's Investors Service Inc. was spun off

In 1999, following an earnings debacle, D&B emerged as a new company. In the year 2000, under new management, D&B launched an ambitious new plan called the Blueprint for Growth – a strategy designed to transform itself into a growth company with an important presence on the web. A complete focus was created on 'financial flexibility' and 'winning culture' and D&B reinvented itself as the company known today.

D&B's *Global Footprint:* Some of the demographics of D&B's global footprint are:

- Over 190 countries
- 181 currencies
- 82 languages/dialects
- Over 4,700 employees
- Commercial database containing more than 130 million business records and considered as the world's largest and most comprehensive database
- Ranked No.1 by America's Most Admired Companies 2007 and 2008 by Fortune

Expansion in the Middle East and India: Dun & Bradstreet South Asia Middle East Ltd. (DBSAME) was launched on 21st September 2004 and is a joint venture between D&B and a consortium of strategic investors from the Middle East. It covers the Middle East which includes Bahrain, UAE, Oman, Saudi Arabia, Qatar, Kuwait, Iran, Iraq, Jordan, Syria, Lebanon and Yemen and also covers South Asia which includes India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan and The Maldives through its subsidiary Dun & Bradstreet Information Services India Pvt. Ltd. (DB India). D&B's Indian operations started in 1995 under D&B Corporate with offices in Mumbai, Delhi, Chennai, Bangalore, Kolkata, Hyderabad and Ahmedabad.

TransUnion

TransUnion (founded in 1968) is in the business of credit and information management. For more than 30 years, TransUnion has worked with businesses and consumers to gather, analyze, and deliver the critical information needed to build strong economies throughout the world.

Growth and Expansion at TransUnion: In the 1960's, TransUnion acquired the Credit Bureau of Cook County (CBCC) (Chicago), which manually maintained 3.6 million card files in 400 seven-drawer cabinets. Using its technical expertise, TransUnion replaced manual accounts receivable data with automated tape-to-disc transfer, introduced the first online information storage and retrieval data-processing system which provided credit grantors across the country with one source for consumer credit information. In 1970s and 1980s TransUnion expanded from a local credit reporting agency purchased by its parent holding company to one of 3 major nationwide consumer credit reporting agencies and continued to expand facilities and capabilities through investments in technology and strategic growth initiatives and acquisitions. In 1988, TransUnion achieved full coverage in the US maintaining and updating information on virtually every market-active consumer in the country. Through the 1990s, TransUnion expanded operations beyond credit reporting, into the fields of real estate, analytics and decisioning. In 2002 TransUnion entered the direct-to-consumer market with the acquisition of TrueCredit.com which helps millions of consumers protect and improve their credit through easy-to-use online services.

Since 2001, TransUnion has been active in the Indian marketplace as the technical partner and a shareholder in CIBIL, the only credit bureau in India. Customers now have available the TransUnion CIBIL score which, similar to a credit score, gives lenders a prediction of their likelihood of default.

D&B TransUnion ADC – A Unique Odyssey

The genesis of this combination was in the year 2005 as a captive unit for D&B South Asia & Middle East providing solutions for emerging markets in the African and Middle Eastern regions. In a matter of 3 years the organization states to have made great strides in technology and analytics with a global clientele base. The global initiatives of joint ventures with D&B International and TransUnion have strongly underscored the company's value as a niche player and potential as new market creators.

D&B TransUnion ADC – Vision, Mission & Values

The company has made its vision and mission statements, stated its core values and leadership tenets, and claims that it very conscientiously aspires to implement the same at all levels of its functioning.

The CEO has clearly defined the purpose of their business. He states, "*It is to add value to our customers. That value can be broadly categorized as improving the efficiencies of our customers' business, improving the customer service capabilities of our customers and enhancing the product quality of our customers. To us value means enhancing our customers' business parameters. To me this is the broad objective of our business."*

(Personal interview on May 22, 2008)

Vision: "Empower businesses globally with comprehensive risk management solutions that transform risks to opportunities by integrating the best of breed in technology, predictive analytics and human capital."

Mission

- Design and develop unique, cutting-edge technology components to automate and integrate enterprise business decision processes to assess, measure, manage and mitigate risks
- Turn 'information' into 'insight' using advanced computational, statistical and analytical techniques to provide customers with predictive results
- Combine D&B's global commercial insight with customer data to create richer models in risk, marketing and customer analytics
- Hire and deploy for our customers the best talent in the industry, supplementing with a strong organizational strategy to provide a continuous learning environment for our associates

Core Values: **ASCEND** encapsulates the essence of the company's core values. The company states that knowledge, attitude and values are the prime drivers of growing any business. The company anchors its success on individual performance blended with positive attitudes. ASCEND at D&B TransUnion ADC stands for:

Applaud intelligence, knowledge and commitment
Simplicity in process, product development and communication
Customer first, firm next
Excellence in everything we do; no tolerance for mediocrity
Nurture development of people and community
Delivering without excuse, every time

Leadership Tenets: The company has 3 main leadership tenets. These are:

- Act with a sense of urgency
- Demonstrate a passion for winning
- Raise the level of collaborative process

D&B TransUnion ADC – Products, Services and Solutions

The company provides services in 3 major areas: Analytics, consulting and technology. According to the company's pronouncements, the analytics solutions take the guesswork out of decision making. They analyze historical and current data using advanced computational, statistical and analytical techniques to create predictions of future behavior, preferences and needs while curtailing risk. The consulting practice consists of bureau consulting, risk consulting, data consulting and the trade registry solution. Consulting initiatives start with analysis to understand data and processes. This analysis is mapped to the business needs of the customers to develop a focused strategy that links action to return on investments (ROI). The technology practice was established to leverage and further support the intellectual property rights (IPR)-driven product development, data analytics and risk management initiatives and can be broadly categorized into professional services and products.

D&B TransUnion ADC – Quality Policy

The company states its quality policy as follows:

D&BTUADC is committed to deliver distinctive, enduring and substantial value to its customers with high quality products and services, on time every time, by integrating the best of people, process and technology.

- Providing cost-effective solutions on time
- Continuous process improvement

- ⇨ Incorporation of new technologies
- ⇨ Sustained employee engagement
- ⇨ Rigorous certification procedures for:
  - o Product releases in all aspects of quality such as functional, technical, usability and navigation and performance.
  - o Project deliverables to internal and/or external clients in all aspects of quality such as functional, technical, usability and navigation, performance and customer-specific customization/requirements, if any.

D&B TransUnion ADC – Key Aspects of Rapid Growth and Critical Success Factors

The company identifies the following initiatives as the key aspects which have helped it grow to the size, volume and market penetration that the company has reached in a matter of just about 3 years.

- ❖ Transition from a verticals focused organization to a centers of excellence-driven business center. The centers of excellence have been established in four major areas which include financial infrastructure and credit bureau, risk management practice, analytics and scoring and data management.
- ❖ Leveraging of global brand value of D&B and TransUnion coupled with nimble and flexible organizational structure
- ❖ Unique cross-sell strategy across vertical-wise product lines
- ❖ Sustained development of a talented workforce
- ❖ Repeatability of key product features implementations across client base network
- ❖ Solution framework for productisation of customer inputs by co-creating the products
- ❖ Technology enabled product development of custom analytics solutions

There are a number of critical success factors which are responsible in making the company achieve the desired growth even in the difficult times that the industry and the economy is passing through. These have been highlighted by the CEO of D&BTUADC with respect to their organization and include:

- ✧ Integrating the objectives of the shareholders and customers with what the employees are doing
- ✧ The ability of the CEO in attracting and commanding respect, trust and loyalty from other leaders in the organization
- ✧ The ability of the CEO in practicing what is preached as the company philosophy
- ✧ The ability to deliver value when the margins are shrinking in the industry
- ✧ The ability to retain talent in the organization

(Based on the personal interview with the CEO on May 22, 2008)

D&B TransUnion ADC – Key Achievements and Milestones

In a matter of three years, the company has achieved considerable success. Notable among these are:

- ⅄ Successful appraisal at CMMi Level 3 within a year of incorporation
- ⅄ Successful completion of TransUnion security assessment for restricted data and confidential data
- ⅄ Creation of cutting edge IPRs across verticals while expanding the existing resource strength and increasing leadership bandwidth
- ⅄ Key customer wins in the domain of credit bureaus, risk management, technology, data management and analytics
- ⅄ Building up of state-of-the-art infrastructure and secure, robust and scalable production ready data center with capability to host customer data

OBJECTIVE OF THE CASE STUDY

The main objective of this case study is to highlight the customer and employee-related practices of Dun & Bradstreet TransUnion Analytic and Decision Services Pvt. Ltd.
(While the term 'stakeholder' includes many others such as the shareholders, government, society, suppliers, dealers, natural environment and even the competitors; the study of these is beyond the scope of this paper.)

METHODOLOGY OF THE CASE STUDY

The case study data have been collected based on personal interaction by the authors with top executives of the company and based on the following five parameters:

i. **Needs** – The needs/expectations that the customers and employees have from the company
ii. **Constraints** – The constraints/challenges faced by the company in order to fulfill the needs/expectations of the customers and employees
iii. **Alterables** – The alterables/best practices undertaken by the company in order to satisfy the needs of the customers and employees or to overcome the challenges/constraints that exist with respect to them
iv. **Strengths** – The strengths possessed by the company with respect to the customers and employees
v. **Areas of Improvement** – The areas where the company needs to improve with respect to the customers and employees

The parameters of needs, constraints and alterables as stated above are based on the social systems engineering tools as proposed by Sage (1977) and Warfield (1976).

The top executives interviewed by the authors include:

S. No.	Designation (As on the date of the interview)	Date of Interview	Type of Interview
1.	CEO and Head, HR	22.05.2008	Personal
2.	Leader (Consulting)	22.05.2008	Personal
3.	Senior Manager	22.05.2008	Personal
4.	Delivery Manager	22.05.2008	Personal
5.	Manager (Finance)	22.05.2008	Personal
6.	Senior Business Analyst and CSR Programme Manager	22.05.2008	Personal

Each of the above mentioned interviews lasted for about 45-75 minutes and was based on a semi-structured question schedule separately prepared for the company head and functional executives. Two separate interviews were conducted for the CEO. One in his capacity as the CEO of the Company and the other as the head of the HR function for the company. Whenever he has spoken as the Head, HR, his designation has been stated so.

The authors are glad to mention that after the completion of the case writing a copy of the same was given to the CEO and he expressed his satisfaction on the same. A few suggestions on some factual corrections were made and these were appropriately incorporated.

CUSTOMER STAKEHOLDER

Introduction

The company has transitioned from a verticals-focused organization to a 'centers of excellence' driven business center. These have been established in four major areas which include financial infrastructure and credit bureau, risk management practice, analytics and scoring and data management. Their services and solutions cater to diverse industries such as banking and financial institutions, credit bureaus, telecommunications, automotive, CPG, insurance, logistics, retail, technology, travel, and government and regulatory institutions. Their customer base spans multiple regions including the USA, Canada, Mexico, Europe, Africa, the Middle East, South Asia, Japan and China.

In such a scenario where the company caters to a very vast and diverse set of customers spread across 11 industry categories and more than nine geographical regions, the company has to cater to a very varied set of needs which these customers may have. Also, the company would have to face a lot of challenges or work under number of constraints in order to satisfy the needs of the customers. A number of alterables and activity sets would be used by them to overcome the challenges and constraints and satisfy these needs of the customers.

Based on the actual discussion with the CEO and Head, HR and 3 other company executives including Leader (Consulting), Senior Manager and Delivery Manager in Analytics, a detailed list of the each of these needs-constraints-alterables, strengths and areas of improvement with respect to the customer stakeholder has been collated.

Needs

Across the diverse set of customers that the company deals with, the common needs include:

First and most important need of customers would be the functional design of the solution/product. The product and service should be as expected by the customers.

The other needs include:

- **Differentiation** – What the customers get from the company must be better than the competitors' offering. Not only should the offering be different but also should be a superior value proposition.
- **Post-sales interaction, support and training of the users** of the solution is another important need that customers have.
- **Transparency** required in the process of delivering the products/solutions is also a critical need of customers.
- **Customer delight, quality, cost-effectiveness and reliability** are among the other generic needs which all customers expect from an organization in this industry category and apply to this organization as well.

Constraints/Challenges

- The challenges of dealing with customers from such diverse industry and geographic backgrounds and the constraints to be overcome in order to satisfy the customers' needs are significant. The major among these are **time and experience.** Though the customers have dealt with D&B and TransUnion for years, they have not dealt with these companies in the form and in the line of businesses that the company is now dealing in. And as the Head, HR puts it, *"It's like Colgate manufacturing cars. While branding and trust is there, we have to build the credibility on our own. And this takes time and experience which is a major challenge"* (Personal Interview on May 22, 2008). About time being a major constraint, the Leader (Consulting) states, *"Sometimes the customers give unreasonably short times to deliver. They take a lot of time to take a decision, but once they take a decision, they want everything to be done overnight."* (Personal Interview on May 22, 2008)

- The other drawback which exists is **lack of specification**/definition of what the product is or should be.
- **Lack of clarity of scope of the project** is yet another drawback. The Delivery Manager and Senior Manager in Analytics state, *"There is a need to be clear about what lies in scope and what is out of scope. This also affects reliability, because as the scope goes on subjectively increasing, the product has to be pushed in the given time lines and thus reliability also gets compromised sometimes. This is a constraint"* (Personal Interview on May 22, 2008).
- This being a specialized field, sometimes, **the customers' knowledge is limited.** So a lot of explaining has to be done.

Thus, a number of challenges exist, many of which are intra-organizational. This is quite natural as the company is just three years old and many of the systems and procedures would take time to be put into place. Also, a significant number of challenges are with respect to the customers and their limited understanding and unlimited expectations. This is also unique to the company because it is providing very unique inter-disciplinary offerings which need very specialized knowledge. Hence the time taken and efforts made to communicate the same to the customers and reason out with them the details is a major issue.

Alterables/Best Practices

While it's possible to overcome some of these constraints and challenges from the company's side, some others which are limitations at the customers' end are perhaps more difficult to overcome. Yet, the company is making a modest attempt at overcoming them through a number of alterables and activity sets. The executives of the company have provided lot of insights into these. These are:

➢ **Product development** – The Head, HR states, *"We are not a pure placed services company. We invest a lot in product development and the benefit of this is passed directly to our customers. The customer gets benefit many times because of this constant investment in innovation from our side. Whether the customer pays for it or not, he has the benefit of getting the solution from a company that is constantly investing in improving its own products. What they are buying from us is not a product or a service but partnership and expertise"* (Personal Interview on May 22, 2008).

Confessing that the company has been a little marketing shy, the Head, HR further adds, *"We are now drawing action plans of communicating to the customer the extra value that we are adding which usually gets lost in a larger noise when the customer deals with a 100 vendors."*

The company also wants to develop a marketing function that can perform internal branding for the employees as well as carry stories of the value added to the customers through newsletters and web-based campaigns.

➢ **Proactive communication** with the customers in case of any delays in delivery or for any quality issues is very essential. Since the work is very client specific and subjective, there cannot be any specific mechanised processes for that. Regular communication would help in giving clarity regarding the scope and the exact definition of the project. However, the company has something called as the **'terms of reference'** for a solution or a product. This contains the requirements of the customers. It is a legal document which is signed by the customer. They also have **'request for proposal' (RFP)** or **'request for information' (RFI)**. All customers' requirements are highlighted in the RFP/RFI. This document is released first. Then, at the time of signing the contract, the terms of reference are released by the customer. It is the final document. All these procedures help in aligning the expectations of the customers with the deliverables of the company right in the beginning.

The company has a very **high service orientation** as regards the customers. Detailing this service orientation of the company, the CEO mentions:

"Our customers must know as to how their projects are being done. They must have a sense of participation in the work and a sense of collaboration. So the platform that we use to monitor our projects is also available to our customers. Thus, they also know as to how the project is going on vis-a-vis the project plan and who are the people working on the projects. Sometimes we go to the extent of interviewing and choosing some of the candidates. We have employed some of the practices that customers want such as doing some background checks and checking the profile of the candidates. So our promise to our customers is manifested in our practice of sharing all our information with the customers."

(Personal Interview on May 22, 2008)

➢ **Learning curve** – To overcome the problem of very short time spans given by the customer, the company recruits more people and puts them on the learning curve. Highlighting one more alterable to this constraint, the Leader (Consulting) states, *"We interact with the customer and explain to him how the project is unlikely to be completed in the short span of time. We reason out with them. Sometimes they accept. Most of the time they don't"* (Personal Interview on May 22, 2008).

To overcome the problem of lack of understanding by the customer, the only solution is to discuss it out with the customers. The Leader (Consulting) admits, *"Either they have to accept what we say or we have to accept what they say."* This interaction with the customers can be done through conference calls, emails or by meeting the customers in their office. This needs to be done till the complex problem is broken into a number of smaller problems and solved.

➢ **Continued transparency with the customers** is yet another practice which the company has been implementing. The CEO shares:

"As we sign deals with customers, we tell them upfront that these are the things available to you. You are free to travel here and see the team working for your project for yourself. You can log in anytime and see. The escalation process, the service level agreements are all systematized now. As far as the customers are concerned, we are an open book. We don't say, give us the contract and for the next three months don't ask us anything, we'll come back with the product. As we move from the contract signing stage to post implementation, we are very customer-focused because the customers have the opportunity to participate with us in every activity. We do this also because of self-interest because we believe that our investment can significantly go down in terms of learning when customer participates in the process. Some of our products have got so enriched because the customer has taken so much interest in developing that product. We have learnt a lot from our customers."

Some of the other alterables exercised in order to overcome the constraints and satisfy the needs of the customers highlighted earlier include:

⇨ **Process and project reviews** which helps in delivering the expected product / solution.
⇨ Maintaining **time discipline** which is the key to meeting deadlines.
⇨ Preparing reports, presentation material, prototypes for usage by the clients.
⇨ **Change management**
⇨ **Learning and development**

Organizational Strengths with Respect to the Customers

Each organization has its own strengths which gives it an edge over its competitors. This company considers as its main strengths:

★ **D&B knowledge** – Certain kind of key knowledge which is unique to the organization and which nobody else has.
★ **Monopoly situation** – Their parent company doesn't have a competitor in its own core area of work. So it's a monopoly situation for them.

- ★ **Cost-effective products** – If a comparison of the knowledge to cost ratio is done, then the company is perhaps better off than its competitors.
- ★ Flexibility – The company follows an approach of flexibility towards the customers.

Organizational Areas of Improvement with Respect to the Customers

The company has identified the following as areas of improvement for itself in the near future:

- ❁ Defining the scope of the project clearly
- ❁ Ample scope in improving the quality of the final product
- ❁ Well structured terms of reference

Highlighting the importance of well structured terms of reference, the Leader (Consulting) says, *"Without them, there is a lot of misinterpretation by the customers. Their interpretation of what is written in the terms of reference may be different from our interpretation. This leads to a lot of time over run and avoidable conflict. So the structuring of the terms should be strengthened. The customer must be told what is in scope and out of scope of the project. We must be very precise"* (Personal Interview on May 22, 2008).

EMPLOYEE STAKEHOLDER

Introduction

The company's employee strength is 343 (as on April 8, 2010) with thousands of man years experience as the business expands across the world. Stating the uniqueness of the organization with respect to its employees the CEO observes:

"We have a growing employee base which is very diverse. We are a start up company which is growing very rapidly. We are very entrepreneurial and we also want to be predictable as regards our results. So it is very important that while we continue to deliver our promise to our associates of all the advantages of a small nimble entrepreneurial setup, we also give them the tools and comforts of a large company. Hence there is a need to strike the right balance. From an HR perspective, there is a strong need to define the culture. We have defined the culture, but there is a necessity to institutionalize the culture and the processes that allows them creative freedom and at the same time helps govern a lot of things. So for associates as stakeholders, we have a very important deliverable to them."
(Personal Interview on May 22, 2008)

Based on the actual discussion with five company executives including Leader (Consulting), Manager (Finance), Senior Manager and Delivery Manager in Analytics and Head, HR, a detailed list of the needs-constraints-alterables, strengths and areas of improvement with respect to the employee stakeholder has been collated.

Needs

There are some usual needs which employees in this industry look forward to. The profile of employees in a knowledge industry is different from that of others. There is a need to focus on those needs which the type of people the Company wants to attract and retain have. Some of these are:

- ◈ **Differentiation in terms of work content** – The Head, HR feels, *"A software engineer in our organization must be able to discern the richer content of work and the differentiated approach to software development than what he would get in a typical IT services company. Thus differentiation is the key. To make the employees realize this, is also tied with the managers' goals as well, because that is the key to retention and also for engaging the employee more productively than he is capable of"* (Personal Interview on May 22, 2008).
- ◈ **Growth opportunities** – The fact that it's a startup company as well as a global brand must give the employees the best of both the worlds. For a potential employee this combination is a huge attraction and the company would want to build up on this attraction.
- ◈ **Rewards and recognition** – In today's times, the general belief in the corporate world, which the company also believes in, is that people should not be made to wait for getting

rewarded and recognized and when they are actually rewarded or recognized, everyone should know about it. As a result, everyone will believe in meritocracy being practiced and that too visibly.

- **Hygiene factors** – The basic hygiene factors which are necessary for every organization to satisfy include the employees' expectation that their **pay package should be above the market** rate. Also, the current generation of managers want **job variety**, want a **stress-free work environment,** and **work life balance** where they can enjoy the flexibility of going and coming at their convenience.
- **Professional satisfaction** – Among the needs which would give them professional satisfaction is the desire for acquiring **functional domain expertise.** Also, employees want to have a say in the final design and decision. They would want to be physically involved and would want their ideas to be considered in the final design. They would also want a well-designed **career path** for their own professional growth. They feel the need to have **long-term value creation** for themselves.

Thus it is seen that there are three sets of needs which have been identified here, the basic hygiene factors, the professional satisfaction related needs and also certain other specific needs which are essential to be fulfilled if the company wants to attract specialized talent in this industry category.

Constraints/Challenges

Satisfying such diverse needs of employees in an industry where attrition is at a very high level is quite a challenging task. There are a number of constraints which have to be taken into consideration. The discussions with five senior executives of the company gave an insight into some of these.

It's the dream of any HR head to have a strong, committed and passionate set of leaders within the organization who would be role models for others. Highlighting his opinion on this, the Head, *HR expresses, "There is need to build a strong and passionate team of leaders who will practice the organizational goals themselves, drum beat these to all employees day in and day out and help the employees practice them. This takes time and also there are trials and errors. This is a major challenge"* (Personal Interview on May 22, 2008).

There is also an arduous task of increasing the sensitivity of employees regarding the need to respect and practice the company policies in letter and spirit. The corollary to this is the need to amplify the organizational policies and procedures in a suitable manner. Lack of this is a major constraint for their successful implementation. These would mainly constitute the **administrative constraints.**

Among the **work related constraints** is the issue that employees dislike repetitive jobs and find it very difficult to meet work-related deadlines. This has a direct impact on their work and performance. Also, in a specialized industry like this one, possession of certain skill sets is very crucial. Unfortunately, **skills sets are limited.** Employees come from diverse backgrounds and hence all of them are not able to pick up their tasks very quickly. As stated by one of the company executives, most employees in the company are from the banking domain, whereas the risk management domain requires some understanding of the basic concepts and the lack of it is a major constraint.

Also, **managers are risk averse** to try something new. They are highly oriented toward what is already practiced and want to stick to the time tested solutions. This is also a major constraint.

Alterables/Best Practices

The company has been able to initiate and implement with reasonable success certain practices to satisfy the very specific needs of the employees and overcome the major

constraints and challenges faced by them. There are a number of policies and practices in the company that symbolize meritocracy, unprecedented growth, differentiation, etc. The company has managed to stay at the top end of their niche right since its inception and does not take the low level of IT services work. As highlighted by one of the company executives, the employees are happy about this trend.

➢ Among the many initiatives that exist, two initiatives **institutionalize differentiation** in the organization. These are:

i. Unikod (Annual Technology Event) – Every year on 30th June, for the whole day, the whole company goes off site and discusses innovative product ideas. It is a serious fun-filled day. In 2008, the theme for this event was *'Productivity, Performance and Portability'*. In 2007, the theme was *'Intelligence, Interface and Infrastructure'*. The first Unikod theme in 2006 was *'Creating a Technology Mission and Identifying Areas of Technology Platforms'*. The event is a combination of dreams and ideas which become realities over the course of the year. The company's approach is that the top six ideas identified during the event are financed by the organization for that group of employees. This practice is inspired from Google's example where 20% of time and resources are spent for employees' pet projects. This is the company's idea of innovating and allowing the employees to define their areas of innovation. However, this innovation has to be in the business context.

ii. D&B Learn – The Internal University – The company has a dedicated faculty for this, drawn both from within and outside. There are regular on-going programs and employees are free to identify the courses that they want to learn. Courses specific to the company's business offerings and domain are offered. There are lectures, classes and full-fledged courses. For e.g. a full course on risk management and project management was conducted for interested employees. The courses are for duration of about six months at the end of which there is an examination and certification of having successfully finished the course. Everyday, the employee is given some time off to go and attend the classes. The environment of learning which aids this differentiated job content is emphasized. This initiative also optimizes on cross-functional learning. However, the company is desirous of developing and focusing more on this area. The interesting aspect is that some of the customers have started using D&B Learn. They are so impressed by this initiative of the company that they have sent their staff for certification to the company, only after which they can implement the software given to them by D&BTADC.

➢ The company has a slew of **rewards and recognitions to encourage meritocracy.** Major among these are:

a. **Spark – The CEO's Award** – There is no quota or precedent to it. It identifies any extraordinary contribution which has impacted the business. The CEO encourages all employees to bring it to his notice. Through this award, the company recognizes the fact that beyond his/her role, the employee has contributed to and made a significant impact on the business. Till date, about 20 Spark Awards have been awarded. It's the highest award that this company recognizes. It has huge benefits and once an employee is in the Spark Club (s) he or she has a fast-track career. These employees are evaluated much more rapidly, growth opportunities are higher and they are considered for higher positioning internally before the company starts recruiting from outside.

b. **Spot Recognition Awards** – Regardless of the management hierarchy, anyone who manages someone else is empowered to give spot recognition awards like gift vouchers, books, etc. These are mainly to encourage the display of commitment, ownership, dependability, team spirit, initiative and leadership. These awards are made very visible and are institutionalized. The employees of the company know that there is this culture of instantaneous rewards and also why someone has been rewarded. The Head, HR feels that such initiatives have a positive impact on the team and the organization and leads to a very vibrant culture of recognition wherein the employees feel that they are being rewarded and recognized for their efforts.

Other awards include (based on the documents provided by the CEO's office at Chennai):

c. **STAR Club** which aims at motivating and sustaining high performance among top performers within the company.
d. **Individual and Team Appreciation Award**
e. **Service Appreciation Program** which is to recognize continuity of service, promote loyalty, retention bonus payout and personalized note of appreciation on service anniversaries
f. Organization Achievement Program for celebrating milestones

- The **Talent Management and Retention Strategy** involves:
  - Building of a young and talented team with good breed of engineers, managers and doctorates
  - Performance-based career growth options for all
  - Process driven methodology including enterprise wide workflow driven tools for support and internal functions

Certain alterables available to satisfy **administration-related needs** and constraints include publishing policies wherever there is a lack of them so that it is in the public domain and people can understand it. Also, when there are any sensitive issues relating to the employees, there is a need to inform the support team members so that singularly no one can be blamed.

In order to improve the **job satisfaction and employees' work-related needs** a number of initiatives have been undertaken by the company. Some of these include:

- **The Induction Program** which consists of:
  - Corporate induction called 'Discover and Begin'
  - Project specific on-the-job induction
- **Individual Development Plan** which consists of an annual training calendar customized on an individual employee's role and responsibilities through a gap analysis
- A weekly r**Risk Management Practice** called 'Market Watch' in which a presentation (30-40 minutes) is made by an employee (by rotation) about the latest developments in the field, in the market or any event which has taken place. The topic is announced a few days in advance. Sometimes external experts are invited for the lectures.
- A lot of material from the public domain is also shared with the employees, e.g. working papers from university websites, material built by the company in-house, etc. The employees are also encouraged for discussions to clarify their doubts.
- Before the commencement of any project, the project leader makes a detailed presentation on the project, its nature, the solution to be provided to the client, the modules of the project and other details. Due to this, any need for change is identified and addressed. Presentations are made by each of the members of a team on specific aspects of their work/project.
- The company makes a realistic assessment of the customers' needs and the employees' time and tries to maintain the employees' **work-life balance**. The company tries to commit only realistic things. When the employees have been over stretched for a long period of time, they are given light work over the subsequent week or if they have worked till very late at night on a particular occasion, then they are permitted to come late the next morning.
- Job/role rotation is also encouraged within the organization.

The CEO also focuses on **organizational values inculcation** for all the employees.

Organizational Strengths with Respect to the Employee

Entrepreneurial approach to work and the **ability and willingness to take risks** and go beyond the mandate at all levels are two very important strengths of the company with respect to the employees. Other strengths include **passion and brand name**. The company has very **glamorous job profiles** as it's an emerging area and the intellectual property rights solutions provided by them are unique. Some amount of glamour is also attached to the work done in analytics or risk management. Another strength which the company has is the work exposure that the employees get and would continue to get in the future. It is also felt by the executives that the company also has the **right type of infrastructure**. As stated by the company executives, all the employees are from very good background and are very well aligned with the company goals.

Based on the observations of various company executives, it is seen that the company has the right people, the right software to use and all the essential traits of a big company and which will help it grow.

Highlighting the company's strengths, the Head, HR says:

"Knowledge and skills are no longer differentiators. You can buy knowledge. But the combination of passion, entrepreneurial skill and risk taking ability will take us where we want to be. I would like these to be the defining criteria of employee selection going forward. We are trying to create a method to evaluate and give weightage to these aspects in different important roles"

(Personal Interview on May 22, 2008).

Sharing one of the company's initial success stories, the Manager (Finance) reminisces:

"We were able to demonstrate to TransUnion before they became a part of the owners that we can get the people of the right type, train them in no time and do the billable work and delight the ultimate customer. Because of this we have been able to grow and have got newer office space. The ability to respond to multi-million dollar contracts at this nascent stage of business has given huge fillip to all the employees. The ability to get the right resources to meet the customer requirements is success for us."

(Personal Interview on May 22, 2008)

Organizational Areas of Improvement with Respect to Employees

The company organizes 2-day leadership training programs where common challenges, areas of improvement and also the behaviors needed to demonstrate (individually and collectively) to overcome those challenges are identified. These are listed with the sincere intention of putting them into practice. They are put in the annual goal sheets and tracked. With respect to the employees, the areas of improvement include the need for **acting with a sense of urgency** which is one of their leadership challenges and being more **service-oriented** which means looking at a deliverable more as a service to the customer and not just the completion of a task.

Productivity improvement per employee is yet another area of improvement. Productivity is a function with no maximum. So there could be a constant improvement in the productivity. This includes skill, knowledge, communication, inter-personal skills among many others.

In the words of the Head, HR:

"We are a business which is a combination of four seemingly unrelated disciplines—risk, data, technology and analytics. Our success lies not just in executing these verticals business plans, but in creating new products in a permutations and combinations of these domains. Raising the level of our collaborative processes to come out with new products in these cross functional areas is very critical to our future strategy"

(Personal Interview on May 22, 2008).

The Senior Manager and Delivery Manager from the Analytics section share an incident of an initial setback faced by the company.

"This was when we were dealing with one of the biggest telecom giants in the country and we were relatively new in the market. We had promised a lot of things to the client in the initial stages. But over a period of time, we realized that we could not do the stated things to the level of accuracy and quality as we had promised. When this was communicated to them, they were quite unhappy and refused to listen to us regarding the constraints, the problems and the inherent data related limitations at our end. So we did go through some difficult months. But then, we had a very collaborative process and the client also changed the project manager from their end, who was quite uncooperative. Finally we concluded the project on the right note. We put in a lot of efforts from both the sides i.e. from the client's side and our side. In the end, we were able to finish the project at the desired outcome of both the parties"

(Personal Interview on May 22, 2008).

DISCUSSION

Based on the extant literature reviewed, it has been observed that there is a dearth of case studies detailing the stakeholders management practices of corporate organizations, especially in the Indian context. Such cases could act as guidelines for those organizations desirous of implementing such a holistic approach to business and its management and emulating noteworthy practices. This paper has attempted to highlight the customer and employee-related practices of an emerging organization in the ITES industry in India. The case study provides detailed information with respect to these organizational stakeholders. It also highlights the experiences of senior executives in dealing with these stakeholders based on their functional expertise. In accord with the increasing emphasis on 'story telling' in qualitative research, many anecdotes of the organizations' attempts at implementing stakeholders management and stakeholder welfare initiatives in the organization have also been included in the case. Along with the 'what, how, when and where' of the initiatives, the case also explores the 'why' i.e. the organizational philosophy behind such an approach to business management. The personal interviews undertaken as a part of the case writing endeavor facilitate the gaining of insights from the senior management of the organization, on many facets of stakeholders management and stakeholder welfare hitherto unexplored. Such case compilation focusing on stakeholder management and welfare-related initiatives is thus far not available for corporate organizations in India and is a unique contribution of this paper.

While the paper focuses on the organizational approach towards the two stakeholders (customers and employees) and the initiatives undertaken by the organization for them, it would be interesting to study the customers and employees' perceptions about the various initiatives undertaken by the organization for them. Their perceptions and feedback on each of these would prove to be very valuable for the organization and would complete the loop. However, this paper has not studied this aspect and hence, this is a limitation of this paper. Future research in this field can consider the study of the dual aspects of organizational approach and initiatives towards various stakeholders and the impressions and perceptions of the stakeholders towards such initiatives.

CONCLUSION

By undertaking the above mentioned analysis (based on the needs, constraints, alterables, strengths and areas of improvement) greater visibility of the customer and employee-related issues of the organization can be highlighted for appropriate organization-wide and industry-specific interventions. This case is perhaps the first of its kind attempt to detail stakeholders-related practices of corporate organizations which will facilitate the emulation of the same by others in the industry and elsewhere.

While there is a general impression among academics and the corporate world alike that large organizations with sufficient financial and human resources alone can focus on stakeholders management and welfare initiatives; this organization, in its relatively limited time span of about five years in India, has done reasonably good work in this field. This could act as a good reference point for other organizations desirous of undertaking such initiatives for their stakeholders in the initial years of their formation and existence. It could be stated that what is important is intent and not the quantum of work alone.

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FINANCING RURAL TELEMEDICINE: BRINGING HEALTHCARE TO THE UNDERSERVED

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Abstract. This article reports on rural telehealth programs around the world, where mobile telephony is used to bring basic healthcare to poor populations. The financing methods used by these programs help us understand how these innovations may be spread to alleviate human suffering. We classify the different financing programs into four major financing models: (1) Those that seek grants to finance operations; (2) Those that are supported by local and/or foreign governments; (3) Those that develop a self sustaining model through revenue generation (charging rural patients for medical services); and (4) those that are funded through global human services programs. We conclude that global partnerships between large for-profit corporations, world health organizations and the local governments can help spread rural telemedicine.

Keywords: Telemedicine, Financing, Non-profits For-profit Partnerships.

According to the World Health Organization (WHO), Pakistan has 160 million people, 75% of whom live in remote rural areas. 70% of Pakistanis never see a doctor in their lifetimes. They rely on local health care workers for treatment and education. There are 110,000 doctors and 1000 government hospitals in Pakistan, which is approximately one doctor for every 2000 people, approximately half of what the WHO recommends in general, which is that there be one doctor for every 1000 people. Pakistan suffers the highest infant and maternal mortality rates in the Asia Pacific at 86.8 per 1000 and 170.8 per 1000 respectively (US National Academy of Sciences, n.d.). One in 10 children dies by the age of five (United Nations State of the World's Children Report, 2007). These unfortunate statistics are illustrative of conditions in many other developing nations. There is a definite need in undeveloped and developing countries for a better solution for meeting the health care needs of large rural populations. This need becomes even more urgent when you add the fact that in Pakistan, 80% of deaths and 90% of illnesses are caused by preventable diseases. If the innovation in disease control has found remedies for these illnesses, why do these still continue to take lives all over the world?

One reason is that while medical solutions to the problems have been developed, these are not sufficient. In order for these medical solutions to reach the rural populations, there are a number of hurdles that need to be overcome. For example, the willingness of doctors to practice in these poor regions, or the financing of such care when the poor are unable to afford it, and many other such hurdles. Lately, technology has made it possible to link distant expert doctors with remote patients and a new solution to address this is in the form of telemedicine. Telemedicine refers to the practice of providing basic healthcare services in remote areas using modern communication technologies to connect the local health-care workers in the regions with doctors who are at a distance but available for consultations and training via the communication network. However, even with technology and medical innovation of telemedicine, there are still other barriers, organizational and financial, to solving the problem of providing healthcare to the poor in remote regions.

One such hurdle is the financing of these telemedicine programs. In this article, we focus on the financial aspects of the telemedicine-based solutions to the problem of providing rural healthcare. We survey some telemedicine programs around the world with a particular emphasis on how these are financed. Our goal is to shed light on the financial and organizational capabilities that are needed for telemedicine programs to become more pervasive.

WHAT IS TELEMEDICINE?

In this section, we summarize some of the different definitions of telemedicine, and provide the background on how this integration of medicine and technology has created the pioneers who are using it to address the problem of lack of healthcare in rural areas. We describe the types of organizations we selected for this study and what they do in general. This background will provide the basis for our core focus, which is to study the impact of the financial models on the overall dynamic capabilities of these organizations to meet their goals. One definition of telemedicine is: "…the use of modern information technology, especially two-way interactive audio/video communications, computers, and telemetry, to deliver health services to remote patients and to facilitate information exchange between primary care physicians and specialists at some distance from each other" (Darkins & Cary, 2000, p. 2). The Institute of Medicine of the National Academy of Science defines telemedicine as "the use of electronic information and communication technologies to provide and support health care when distance separates the participants". This can be as simple as two physicians talking over the phone about a case or more sophisticated video conferencing where real time clinical assessments take place. The federal Office for the Advancement of Telehealth defines telehealth as "the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration." Telemedicine only refers to providing medical services, whereas telehealth is a broader term that encompasses telemedicine and non-clinical applications such as education and research. For our purpose, we focus narrowly on telemedicine programs serving unmet basic healthcare needs in the under-developed parts of the world; so we will use the term telemedicine to incorporate both these aspects of delivering care as well as training and education.

The earliest form of bringing healthcare to the remote rural populations was to set up remote clinics or have traveling doctors. Distance and cost involved in this meant that aid organizations and governments were only able to treat limited portions of the rural population. With rapid developments in information and communication technologies and the increasingly affordable costs at which these are available, the distance between the urban and developed parts of the world and the remote and rural parts in the developing world have become less important for bringing health care at a distance. Instead of remote clinics or traveling doctors, now healthcare workers are able to use telemedicine to treat villagers in rural areas. With the introduction of telemedicine, the citizens of rural villages are able to connect to a network of doctors and specialists remotely through an intermediary like a community based health care worker equipped with a mobile device and basic training on medical treatment and care. Telemedicine makes distance and road access irrelevant, spreads the bandwidth of a single specialist across thousands of patients, and is low to no cost for patients.

Since the early 1990's health care professionals in the United States (US) began implementing technology to better share information within and across medical networks. The increasing use of technology created the innovation of telemedicine. It is widely used in many other aspects of practice of medicine today. Within the US, there are many organizations, such as, the American Telemedicine Association, Association of Telemedicine Service Providers, the Centre for Telemedicine Law, the Federal Office for the Advancement of Telehealth, the Telemedicine Information Exchange, which exist to promote and facilitate the use of telemedicine. Even at the state and local levels, there are chapters for telemedicine; for example, in California, one can reach out to the California Telemedicine and eHealth Centre at www.cteconline.org. Our analysis focuses only on a special segment of the use of telemedicine, which is directed towards solving the problem of providing basic healthcare to the poor populations in remote rural regions of the under-developed parts of the world. The organizations we survey are the pioneers in that domain.

The telemedicine programs that we surveyed are managed by organizations committed to improving health care in a rural area. The telemedicine program operators perform several functions. These organizations recruit individuals already living in the rural area to become community-based health care workers. The organization provides initial

training to the field workers, and supplies them with hand-held mobile devices (such as PDA's) to be used to collect medical information from patients. Medical records collected during patient consultations by the field worker are transmitted wirelessly to the telemedicine program operator. The organizations also locate and organize a network of medical professionals willing and available to do several functions. The program operator transfers the medical records to a medical professional who is able to diagnose and treat the ailments of the rural patient who may potentially be thousands of miles away. After reviewing patient cases electronically, the doctor or specialist sends the treatment instructions back to the telemedicine operator who in turn passes the directions back to the local community-based health care worker's mobile device so that he or she can ultimately treat the patient. The telemedicine operator is wirelessly connecting the rural patient with a doctor or specialist in another location. The medical professionals offer continuing education to the field health care workers with whom they communicate, they review the medical records of the rural patients, they provide treatment instructions to the field workers, they may also offer follow up care.

As mobile technology has become more established and affordable, telemedicine programs have grown more popular with governments, public health officials, and medical research communities as they serve an unmet need in innovative ways. These programs address one of the most basic and challenging health care problems faced by large segments of human population. Our survey provides some evidence that the manner in which these programs are funded can have a significant impact on their success. For an innovation to succeed, there are multiple capabilities needed. Telemedicine programs have come about based on well-developed medicine and technology knowledge, but their success may depend on dynamic capabilities in the area of financial models used to fund these programs. In the next section, we provide the specific details of the organizations we surveyed, while elaborating how these different programs have been funded.

FINANCING TELEMEDICINE PROGRAMS

The information we provide in this section was gathered from public sources. We researched different public sources, library databases, academic journals, the internet, and telemedicine associations mentioned earlier, to find information on telemedicine programs delivering rural healthcare to remote populations. We gathered all data that we could find that would help us investigate these organizations, be it their operational structures, the kinds of services they deliver, the size of their operations, performance metrics, and specially how they are financed. At this time, there are only a handful of these pioneering organizations, and information about them is difficult to find. Financing and performance information was even more difficult to find.

We gathered information on as many of these as we could find. There are a few telemedicine programs that have been actively addressing the large and growing unmet need for rural healthcare in many remote parts of the world. These programs are spread out in different remote areas of the under-developed parts of the world. There is not much information available about them, and even less about their internal financing or operations or performance metrics. We think this is one of the reasons why our study is important, as it can even be helpful to these very organizations as they pioneer this important work.

Amongst the programs we investigated, we found that different programs used different methods to fund their operations. We found it useful to categorize these into four major types of financing models. These are described in more detail in this section, and are labeled as: (1) Grant seeker model (2) Local and/or foreign government supported (3) Self-sustaining through revenue generation (charging rural patients for medical services), and (4) funded by the global human services programs. These are representative, not comprehensive, ways of financing these organizations. It is quite possible that there are other ways of funding, such as a combination model that combines different elements of two or more of these four types of funding elaborated below. However, since our goal is to better understand the implications of dynamic capabilities in the financial aspects for the performance and growth of the program, we consider these four types to be sufficient for this purpose.

Exhibit A

Financing Model	Start Date/ Program Name	Countries	Funding (USD)	Funding Sources	Patients Treated	Website/Notes
Grant Seeker	7/2008 Tele-Health Care	Pakistan	USAID-$38,325 HEC-$110,000 ISIF-Unknown	USAID, ISIF, HEC	250 patients/ day	www.tele-healthcare.org
Government Funded	2005 UHIN	Uganda	Unknown	IDRC	1 million since 2005	www.healthnet.org/uhin
Government Funded	2006 MHIN	Mozambique	Unknown	IDRC	Unknown 66 facilities	www.healthnet.org/mhin
Self-Sustaining	2003 Pilot Jiva Tele - Doc	India	Initial Grant from Soros-Unknown $1million cash positive in 2006 from franchising model	Soros Foundation (Pilot) Franchising model	9 million patients/ year, 2006	http://www.infosci-journals.com/downloadPDF/pdf/ITJ3276_6gg4DgSKcD.pdf
Global Partnership	2008 Technology Partnership	24 countries in Africa	$2 million initial investment Unknown additional	UN Foundation Vodafone Foundation	Unknown	www.datadyne.org/about

Key:
HEC= Higher Education Commission of Pakistan
IDRC= International Development Research Centre, Ottawa, Canada
ISIF= Information Society Innovation Fund
MHIN= Mozambique Health Information Network
UHIN= Uganda Health Information Network, USAID= United States Agency for International Development

Exhibit A above provides a comparative matrix summarizing the key features of these organizations and the four different types of financing models. Using a short case-study format, we further describe each of these different telemedicine programs. Consider the conjecture that understanding the implications of each of the financing models is crucial to sustaining and expanding any telemedicine program. There is very little data available by way of performance metrics or size of these various programs. To our knowledge, this is the first survey of such programs. Therefore, to make our argument, we use various proxies of size such as number of patients served or number of doctors enlisted with the program or expansion or growth of the programs. Through this research, we show how the innovations in technology or medicine alone are not adequate to solve the many problems of lack of access to healthcare. Innovations in financing and organizing are a key differentiator of how these innovations work together in order to provide solutions to a real problem.

Grant Seeker Model: Tele-HealthCare in Mardan, Pakistan

In 1994 Pakistan introduced a program called the Lady Health Workers or LHW's. This program was to be managed by the government's National Program for Family Planning and Primary Health Care and planned to hire 100,000 LHWs to serve in 130 districts in Pakistan (GSMA Development Fund, n.d.). The LHW program was intended to serve two purposes: to treat the rural population of Pakistan where doctors were not available, and to act as medical resources for women who were not seeking medical care from male doctors as it was not traditionally acceptable for them to do so. LHW's received training and were then dispatched to their rural territories. LHWs struggled to maintain contact with their supervisors because of the distance. They also could not easily refer serious cases to seek emergency medical attention, because of the remote locations.

In 2008, a partnership was formed between Mobilink, the GSMA Development Fund, the UNFPA and Pakistan's Ministry of Health, with the goal to bring mobile technology to the LHWs. They issued mobile phones and PDA's to the LHWs with the expectation that this would help improve the care they provide. However, this only got mixed success because there was no central authority designated to provide timely ongoing medical oversight, guidance, and education for the LHWs.

In July 2008, a pilot telemedicine program in Skardu, Balistan, Pakistan was completed and the partnership applied for and was awarded grants from the United States Agency for International Development (USAID) and the Higher Education Commission of Pakistan (HEC). Thus began the Tele-HealthCare program, which is now managing a telemedicine program in rural Mardan, in the North West Frontier Province of Pakistan. The Tele-HealthCare program treats approximately 250 patients per day.

Tele-HealthCare's mission in Mardan is to leverage the existing field staff (LHW) and Information Communication Technology (ICT) to provide better quality care to patients served by the LHWs. Tele-Health Care has built a network of doctors from Pakistan and America, mostly doctors of Pakistani descent living in America. The medical data collected by the LHWs in the field is entered into their mobile devices and transmitted to a central location. An internet based and mobile ready telemedicine network has been developed in Jakora, and it serves to connect the LHWs in Mardan with the doctors and specialists in urban Pakistan or abroad, by transferring the data collected in the field to these specialists. The program uses SMS (Short Messaging Service), MMS (Multimedia Messaging Service), GPRS/Edge, and VSAT. In addition to collecting and transferring patient data, LHWs are able to listen to recorded trainings and watch videos from their mobile devices. This program has trained 50 LHWs in Mardan. There are hopes to expand the project, provided additional funding can be obtained.

The USAID and HEC grants received in 2008 totaled US$149,325. In 2009, Tele-Health Care received an additional grant from the Information Society Innovation Fund, a grants program aimed at stimulating creative solutions using ICTs for meeting the development needs in the Asia Pacific region. The USAID funding is expected to last until the end of June 2010. Other grants will need to be renewed or replaced for operations to continue past this expiration. For Tele-HealthCare, continuing regular operations within the existing footprint is totally dependent on the grants, and it is at risk when grants expire. The possibility of expanding health care services beyond its present footprint is not very likely either. Once the grant expires, the program may have to be shut down, unless new sources of funding are secured. Thus, this case illustrates how even successful programs that depend solely on grants are very vulnerable. We can conjecture that the grant seeker tele-medicine programs face significant uncertainty associated with being wholly dependent on whether or not new financing will be secured.

Government Funded Model: Health Information Networks in Uganda and Mozambique.

The next two organizations are similar in that they share the same technology, funding source, and operational model. Uganda Health Information Network (UHIN) and Mozambique Health Information Network (MHIN) are funded by the International Development Research Centre, Ottawa, Canada (IDRC), and rely on software from AED

SatelLife. In Uganda, AED SatelLife programmed PDA devices with software capable of collecting patients' medical information and dispatched them to 600 health workers in Rakai, Mbale, Manafwa, Lyantonde, and Bududa. Data are transferred to and from these PDAs wirelessly at African Access Points (AAP) developed by AED SatelLife and through a server in Kampala. The health workers collect medical information from patients during a consultation and enter it into their PDAs. "They then upload that data and e-mails they need to send to AAP via infrared, Bluetooth or wi-fi at a rural health facility. The AAP sends the data and messages over the cellular network to the server in the capital, which routes them to the correct recipients and sends back messages, data, and health information clinicians need. For Uganda, which has one of the highest burdens of disease in the world but also some of the best cellular telephone coverage in Africa, the marriage of handheld technology and cellular telephony represents a watershed moment in the battle against information poverty" (AED SatelLife- Uganda, n.d.). The data collected are both transferred to District Health Offices that use them to measure illnesses, produce statistical reports, and monitor drug usage and stock, and to tier one medical personnel (doctors, nurses, and clinical officers) to review patient records and transmit treatments back to field health workers. UHIN operates in 5 districts and has serviced over 1 million people in Uganda since 2005 (AED SatelLife- Uganda, n.d.). Like Tele-HealthCare in Pakistan, UHIN uses the mobile network to provide continuing education to all medical personnel and field workers.

MHIN is similar to UHIN except there is a higher level of integration between the data that are collected from the health workers in the field, and the District Health Offices that receive them. The Ministry of Health of Mozambique (Ministério de Saúde, MISAU), absorbs the data from the District Health Offices, reviews them, and then determines the appropriate education and training that should be transmitted through the wireless network to the field health workers based on the concentration of various medical conditions reported. Health workers are then provided with especially relevant training to treat the conditions they are encountering most often (AED SatelLife- Mozambique, n.d.). MHIN began operations in 2006 and operates in 66 health facilities in Chockwe, Manjacaze, Morrumbene, Namacurra and Nicoadala districts.

The UHIN and MHIN programs were created by their respective governments after funding arrangements were made with IDRC (International Development Research Centre). In 2005, independent consultants showed that UHIN, using AED SatelLife technology, was 24% less expensive per unit of spending than alternative methods for providing public health care services (AED SatelLife- Uganda, n.d.). Because of the investment by IDRC, the initial staff size and therefore service capacity of UHIN (1 million serviced) and MHIN (66 facilities) was far greater than Tele-HealthCare's 50 LHWs in a single facility.

Self Sustaining Model: TeleDoc, India.

In 2003, the Jiva Institute, an India-based company, launched a pilot program called TeleDoc (ICT for Development, n.d.) which was funded by the Soros Foundation. It provided mobile devices to health workers in 15 villages in Haryana so that they could communicate with doctors who use a web application to help diagnose conditions and prescribe medications for patients. The intention of the pilot was to "deliver low-cost diagnostic and prescription services to rural villages currently underserved by existing healthcare systems, thereby improving treatment of diseases in these settings" (ICT for Development, n.d).

The basic model used was similar to that of Tele-HealthCare and UHIN/MHIN, where TeleDoc provided health care workers with mobile phones equipped with software able to synchronize with record-management systems at Jiva's clinic. Doctors reviewed the information collected by the field workers, and prescribed medication and treatment. "Medicines were compounded at a regional office, picked up by field workers, and delivered to patients in their homes - a network of pharmacies and delivery people supported this process. The approximate cost of the entire TeleDoc process was 70 rupees (US$1.50) per consultation" (ICT for Development, n.d). The pilot was deemed a success. On the 10th of December 2003, TeleDoc won the World Summit Award for eHealth, presented at the World Summit on the Information Society (WSIS) in Geneva, Switzerland.

Based on the success of the pilot, Jiva decided to scale TeleDoc throughout India. It structured the organization as a non-profit, and implemented a franchising model for it. They also adopted a pricing strategy that allowed it to become cash positive relatively quickly. As part of the expansion, Jiva planned to develop software based training components directly related to women's health. As part of the expansion plans, Jiva and its franchisees continued providing cell phones to field workers, and charging nominal fees to patients. Franchise owners acted as the connection between field workers and doctors. "The TeleDoc field team collects data about illness and symptoms from rural patients on a case-by case basis… data are input to the GPRS data network through the J2ME application interfaces (e.g., patient records). These data elements reach the central database of TeleDoc doctors at Jiva's clinic. The doctors go through the descriptions of every case, and corresponding treatment procedures and prescriptions are messaged back to the TeleDoc field workers. The TeleDoc field workers, in turn, collect the prescribed medicines from their local franchisee and distribute them to the patients. The consultation fee and medicine fees are collected by the field workers and sent back to the central office via the franchisee network" (Bandopadhyay & Singh, 2006). During the year 2006, Jiva intended to provide consultation to nine million patients in 1,000 villages. At this volume, Jiva should have $1 million net surplus per year (Bandopadhyay & Singh, 2006).

TeleDoc was able to develop a revenue generating model that helped attract franchisees, allowing the program to grow much faster than it might otherwise have. TeleDoc is unique among telemedicine program operators for this self-sustaining model, serving as an important example amongst the telemedicine programs. When franchisees seek to and achieve profits in telemedicine, they also create a "marketplace" that attracts other new organizations to enter the market based on the incentive to make profits as well. This increased participation expands the availability of health care services to rural populations much faster than other financing models have illustrated. Although this is just one organization, it is a good exemplar to illustrate the potentially important link between the expansion of telemedicine and the incentive of profits. The next model shows how this incentive for profit can accelerate the growth in telemedicine programs when several larger organizations come together

Global Partnerships Model: Corporate Charity, India and Africa.

The United Nations set out the Millennium Development Goals (MDGs) as a challenge to halve extreme poverty around the world by 2015, while improving education, health, and gender equality (Hospital Information Technology Europe, 2008). Numerous large multinational organizations stepped up to participate in supporting the initiative by forming partnerships. Two examples of such global partnerships, formed as a result of the MDGs, are the Ericsson-Apollo Telemedicine Networking Foundation (ATNF) mobile health services project in India, and the UN Foundation-Vodafone Foundation Partnership telemedicine project in sub-Saharan Africa. **Ericsson-ATNF**

Apollo Telemedicine Networking Foundation is a part of the Apollo hospital network in India. It is set up as a not-for-profit organization. "ATNF works with multiple entities including the Central and State Governments, medical bodies, private and public sectors, both at domestic and international levels to popularize the concept of Telemedicine. ATNF offers customized solutions addressing telemedicine support for primary, secondary and tertiary level of healthcare. 'Medintegra WEB', the proprietary Telemedicine Application supports the platform to carry out telemedicine consultation. Apollo Hospitals provide the medical support by rendering quality healthcare through its key hospitals (Apollo Telemedicine Network Foundation, n.d.)." ATNF acts as a technology partner for the local telemedicine programs and also sells telemedicine software programs. It links its affiliated programs with doctors directly since it is a part of Apollo Hospital Network.

Ericsson (NASDAQ:ERIC) and ATNF…, have taken a major step towards helping bridge the digital divide in rural India by laying the foundation for the introduction of mobile

health services. Telemedicine delivered using HSPA technology will enable the provision of affordable and accessible healthcare to millions of people in remote areas. Mats Granryd, President of Ericsson India, says: "Mobility has proven to be a major catalyst for social and economic empowerment, and a key ingredient in helping to bridge the digital divide. Through our ongoing partnership with Apollo, we are putting an ecosystem in place to support telemedicine applications once the 3G network is deployed." Prathap C. Reddy, Chairman of Apollo Hospitals Group, says: "With the availability of wireless technology, mobile health will be integrated into the healthcare delivery system. The new mantra could well be 'Healthcare for anyone, anywhere, anytime." (Ericsson, 2008).

Outside of its partnership with ATNF in India, Ericsson has also joined the United Nations Office for Partnerships' mHealth project, which uses telecommunications to bring mobile health applications and telemedicine to rural Africa. "As the leading telecom provider, Ericsson will use its expertise to head the initiative's technology stream, and will explore the use of mobile communications to deliver telemedicine to rural communities, to help to improve access to and delivery of emergency and general health services, assist with disease surveillance and control, enhance the collection of basic health data such as birth and death registration, and deliver mobile learning to health workers in remote areas. Ericsson's experience in India and Bangladesh shows that even people with an average income of US $1.25 per day can have access to medical care with the help of mobile connectivity" (Hospital Information Technology Europe, 2008).

Though Ericsson's initial participation in providing mobile technology to rural areas of India and Africa is in response to a call from the UN, it is expected that the introduction of this technology for the purposes of healthcare will eventually expand into the more mainstream use of mobile technology in previously inactive markets. Ericsson, as the pioneer of the technology locally, may have much to gain as these rural villages of needy patients transform into marketplaces of mobile consumers in need of both mobile goods and infrastructure. Many organizations struggle to identify the appropriate products or business models to use when targeting inaccessible markets. Using charitable development projects as a method for learning the market landscape is an innovative practice. While TeleDoc in India was able to expand its business and ultimately rural health care services by attracting franchisees seeking profits, the UN is able to expand health care services in underserved areas by soliciting Ericsson's investment in exchange for access to new commercialization opportunities.

The Technology Partnership

The Technology Partnership was founded in 2005, when the Vodafone Foundation committed £10 million and the UN Foundation committed £5 million towards meeting the UN's Millennium Development Goals. The Technology Partnership committed $2 million to the mHealth project which went to support DataDyne's development initiatives and the local telemedicine programs facilitating service. "DataDyne provides free mobile phone data collection and other technologies to hundreds of non-profits … working in international development and global health" (Data Dyne.org, n.d.). The funds invested in the mHealth project started at the top of a large network and trickled down through the World Health Organization and various ministries of health to the local telemedicine program operators in 24 sub-Saharan countries (See Exhibit B below for a schematic representation of this network).

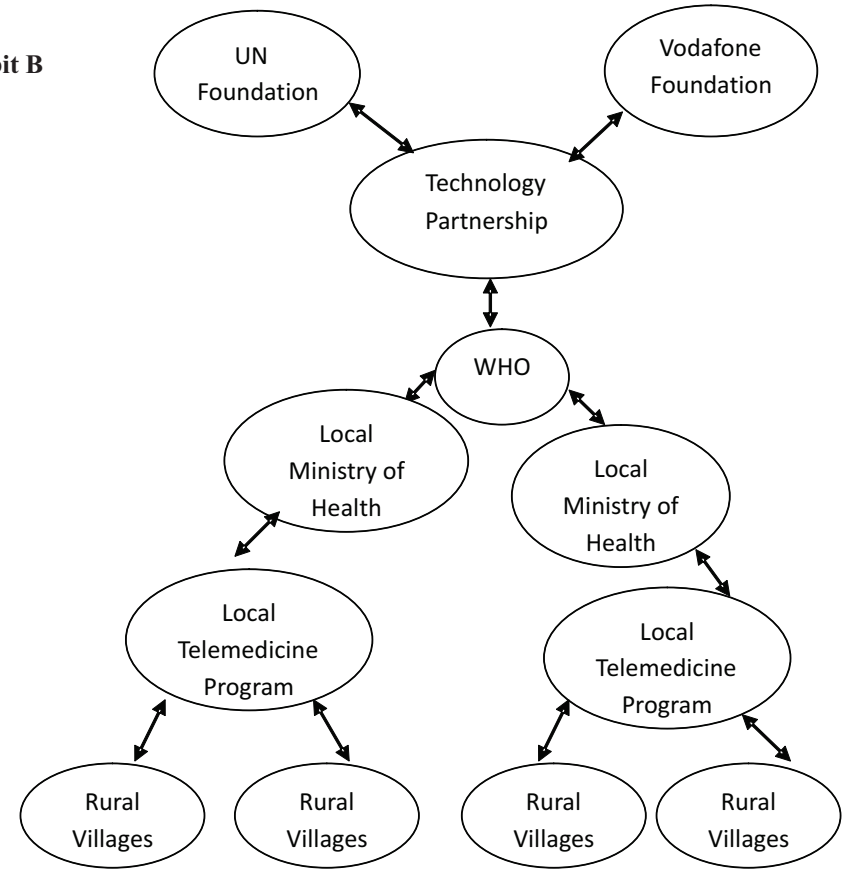
In 2008, the Technology Partnership further partnered with the World Health Organization (WHO) and the non-profit DataDyne.org with the goal to expand telemedicine programs. DataDyne's primary product, EpiSurveyor, "is an open-source application that helps healthcare workers track health data. EpiSurveyor can be downloaded to handheld devices and is easily adaptable by workers in the field. WHO, DataDyne.org and the Technology Partnership piloted EpiSurveyor in Kenya and Zambia. Its successful implementation has greatly improved the timeliness and availability of health care data, making it easier to strengthen district level healthcare programs involving immunizations against malaria and other preventative programs aimed at improving public health."

(AllAfrica, Inc., September 9, 2008).

These local telemedicine program operators may have already been established or could have been founded in response to the investment made by the Technology Partnership. What is critical to take away from this example, is that the local telemedicine program operators at the bottom of the network did not have a pre-existing relationship with the investing organizations. These rural telemedicine programs only had access to the funds because they were included in a network that benefited them, the network created as the global partnerships financing model.

The global partnerships model illustrates how the United Nations was effective in attracting large organizations to invest in charitable programs that supported the Millennium Development Goals, due to the potential that they saw for future profits (Ericsson). As a result of large organizations participating in global partnerships, more telemedicine programs are created, more rural populations receive treatment, and health care is made more accessible to the underserved. The participation and investment pushes money from the top of the network down towards the ground level telemedicine service providers, expanding their capacity to serve.

Exhibit B



Both the examples of this global partnership financial model show how innovative ways to combine the altruistic goals set by the UN, with the investment power of profit seeking large companies can lead to overall benefits all around. Under-funded areas of development, like the social need for rural healthcare, can benefit from the large investments that trickle down to the local level from the commitments made by large companies in support of charitable goals set by international agencies. Large companies benefit from learning about reaching remote marketplaces, where future profits may come from. They also get the immediate benefit of generating goodwill from supporting worthy causes. The Ericsson-ATNF example illustrates how the lure of future profits can incentivize charitable acts in the present. The UN-Vodafone example illustrates how the global partnerships financing model creates new local programs as a result of funds that trickle down the network from the top. This financing model further develops the underlying concept of the TeleDoc model: that profit can encourage organizations to participate in the telemedicine marketplace, thereby expanding health care services.

In this financing model, large multinational organizations commit to improving the quality of life for persons in undeveloped/developing countries, and this commitment comes in the form of charitable aid or investment in programs to support this objective. The investment starts at the top of the network and trickles down to governments and public health agencies with a charge to develop programs to improve education, health, living conditions, etc for their populations. Public health agencies then develop programs, such as a telemedicine program, in response to new funding. In the event a telemedicine program operator is already in place, then the public health agency may distribute funds to established programs. The actual programs are never likely to have approached these large investors for funding directly, but the existence of such partnership networks makes it possible to connect the large investors with the small programs, by creating these partnership networks. The sheer size of the large investments in certain areas, say to expand healthcare, creates an incentive that spurs growth in new programs in that priority area. The creation of numerous programs or growth of existing programs rapidly results in significantly larger proportions of rural populations receiving health care services. This financing model often results in the fastest and largest expansion of health care services to rural populations primarily as a result of the large size of the investments made possible by this method.

CONCLUSIONS AND FUTURE RESEARCH

We have identified four different ways that these telemedicine programs get funded. Three of these ways are similar to the way a new venture in business may be financed, i.e. the organizer seeks capital from various sources. This can be considered to be a bottom up approach where the grass roots level organization seeks financing from larger investors in the form of government financing or grants. In contrast, the fourth and final financing model is a top-down approach. A large investment, made by a large foundation or an aid agency, and distributed through existing administrative networks like government agencies, creates incentives for growth in new and existing programs in the selected priority area. We found that this global partnerships model allows for the most rapid expansion of telemedicine. The contrast in both size and capacity between this model and others is significant and favors the top down approach to solving such social problems. The government funded programs do not face the same uncertainty and risk as a grant seeker program like Tele-HealthCare in Pakistan. However, they are not fully empowered to make their own decisions on expanding services to new rural populations because they are dependent on government financing.

All the four different financing models highlight the way that the performance and impact of the telemedicine program can vary significantly depending on the way it is financed. They are not all equally effective in their ability to sustain themselves or expand their services. The unmet demand for health care in rural areas is great, yet there is no competition in organizations rushing to provide these services. In the absence of competition, organizations do not naturally

have the content in which to become more agile, or offer different medical services, or otherwise manage their performance in any way that would distinguish one program from another. They are focused on providing a much needed social good by treating rural patients that would otherwise not be served. In such circumstances, to know that the different financing models can have a significant impact on performance is a valuable contribution.

Based on this survey of telemedicine programs and the financial models used to sustain these, we summarize the following conclusions:

1. Grant seeker telemedicine programs are the least likely to expand rapidly due to the exposure they face from uncertain future funding.
2. Government funded programs are more stable than grant seeker programs and may be able to serve larger populations, but these programs are restricted in their ability to expand to new geographies because of their dependence on their funding source.
3. Self-sustaining programs that offer profits have increased flexibility to expand, and operators will be incentivized to do so.
4. Global partnership model of financing telemedicine programs, like those inspired by the UN's MDGs, will attract large organizations to make significant investments in health care services in exchange for future commercialization opportunities, and these investments will allow telemedicine programs to expand rapidly at the local level despite not being directly related to the distant donor.

This early evidence has significant policy implications. Based on these conclusions, we can recommend that telemedicine programs be setup to be self-sustaining and that a greater role be taken up by global partnerships in funding such initiatives. This would mean more public-private partnerships to support the organizations that address this basic healthcare problem. Further research is needed to validate our main contributions. These early results are inductively derived and need further verification, which will become possible as these and other programs in the area grow. We recommend this as future research. Most of the programs are in their early stages and there is little information available currently but this should change as time goes on. We also feel that the policy implications of our study can be verified in any other domain where social goods other than telemedicine may be studied. The results should be generalizable to other situations where there are unmet needs with limited funding methods for the social programs that try to meet the need.

In summary, based on our analysis, telemedicine programs financed through the global partnerships model have the capacity to grow most rapidly and serve greater proportions of rural populations than telemedicine programs financed using other models. The significant investments made by large corporations dwarf the funds telemedicine programs are able to generate through grant programs, or through partnerships with local and foreign governments. As a result of these large corporate investments, telemedicine programs are able to expand into multiple countries at once, compared to treating one to five districts within a single country. To further grow telemedicine services, additional investments by large corporations are needed. Global agencies like the United Nations along with the governments of undeveloped countries, should seek out large corporations interested in potential commercialization opportunities in areas that do not receive sufficient health care services today. Partnerships to secure investment in health care programs can be created, perhaps in exchange for early or exclusive access to the future marketplace.

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EXPLORATION OF INTERNET BANKING WEBSITE QUALITY IN INDIA: A WEBQUAL APPROACH

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Abstract. While success or failure of any e-vendor depends on many factors, its website plays a very important role. The evaluation of website quality in an e-Service setting is not solely a function of how well a particular site measures up to the ideal of "Websiteness" (ease of use and usefulness) but it also gives an insight into how the organization that hosts the site is perceived (company image) among its customers. Using WEBQUAL scale this study has made an attempt to assess internet banking website quality in India from customers' perspective. An exploratory factor analysis, followed by a confirmatory factor analysis has been applied on data collected from 593 respondents in India using an online questionnaire. Findings demonstrate that there are some variations in WEBQUAL dimensions in the context of internet banking services in India.

Keyword: Website quality, Internet Banking, WEBQUAL, Structural Equation Modeling.

INTRODUCTION

While interacting with an e-service website, there could be numerous factors which may determine our intention to revisit the website. Website quality is one such influencing factor (Cyr, 2008; Ganguly, Dash and Cyr, 2009; Venkatesh & Johnson, 2002; Venkatesh & Ramesh, 2006). Website functions as a platform through which users can interact with their e-vendor. Literature in e-commerce suggests that website quality plays a critical role in affecting individual attitude and intention towards the e-vendor (Cyr, 2008; Ganguly, Dash, & Cyr, 2009). In the current era of information technology (IT), users usually experience any company's or organization's website quality before they decide about whether to entrust themselves to the e-vendor or not (Liu & Arnett, 2000). Thus, understanding users'/customers' expectations from e-service websites and what they feel about the websites they use is becoming a very serious concern, especially in the web environment (Alhudaithy & Kitchen, 2009; Venkatesh & Ramesh, 2006). For any company, its continued success comes from two groups: new customers and repeat customers, and it costs more to attract new customers than to retain current customers. So, customer retention is more important than customer attraction. In the context of e-commerce, the key to customer retention can be assessed by his/her intention to revisit the same e-vendor's website (Barnes & Vidgen, 2001). In recent years, few studies have focused on the measurement and evaluation of website quality, covering both, for general information seeking and for electronic commerce purposes (Cyr, 2008; Ganguly, Dash and Cyr, 2009; McKnight, Chaudhary, & Kacmar, 2002). Through theoretical and empirical investigations, there are several instruments available to evaluate website quality based on user/customer satisfaction. Some most widely used instruments are E-SERVQUAL (Zeithaml, Parasuraman, & Malhotra, 2002), Website Quality Function Deployment (Barnes & Vidgen, 2001), SITEQUAL (Yoo & Donthu, 2001) and WEBQUAL (Loiacono, Watson, & Goodhue, 2007). However, WEBQUAL has been developed and tested across twelve different websites in a developed country (three each for books, CDs, hotels and airlines industry). The objective of this study is to test the applicability of WEBQUAL instrument for assessing quality of internet banking websites (financial services industry) in an emerging economy like India.

This article has been divided into four sections. In the first section, literature based on website quality and its importance in internet banking has been reviewed. Next, second section briefly discusses the different scales for measuring website quality. Third section explains the research methodology adopted to assess the applicability of WEBQUAL scale in the context of internet banking websites in India. The fourth and final section discusses the results and findings of the study.

LITERATURE REVIEW

Internet Banking in India

Internet banking in India emerged in the mid nineties when the newly introduced private sector banks came up with a new business model revolving around a strong information technology (IT) backbone. Today, banking in India is not confined to physical branches where customers have to visit the branch in person to withdraw or deposit cash/cheque, make a request for account statements, and many other bank related activities. Through internet banking, most of the banking services (enquiry, transaction, etc.) can be done online at anytime and from anywhere. ICICI bank, a private-sector bank, was the first bank to offer the internet banking facility to their consumers in 1998. Since then, a large number of both private as well as government banks have opted for offering internet banking services. However, internet banking services are progressively turning into "need to have" rather than "nice to have". In the study by the Internet and Mobile Association of India (IAMAI, December 2005) it was found that many customers were not willing to do financial transactions through banks' internet websites because of reasons such as security concerns (43%), preference for face-to-face transactions (39%), lack of knowledge about transferring online (22%), lack of user friendliness (10%), or lack of the facility in the current bank (2%). A recent study on the internet users conducted by IAMAI (2009) found that only about 12% of the online users were using internet as their banking channel in 2009 as compared to 20% of the same in 2008. These figures show that a significant number of internet users are still reluctant to use internet banking services, and hence there is a need to understand the reasons for not using it.

Website and Internet Banking

In internet banking services, the users interact with the bank website to perform their transactions. It creates a platform where users perform a series of actions to complete their transactions successfully (Alhudaithy & Kitchen, 2009; Venkatesh & Ramesh, 2006). Lassar and Dandapani (2003) in their study of bank websites identified three factors which could affect users' perception about website quality: firstly, social presence is the degree to which a bank website conveys the virtual presence of the bank. Virtual banking websites usually communicate with the users in either of or a combination of the following ways: (a) feedback enquiries; (b) asking for immediate confirmation of data input by users; (c) asking several security related questions; (d) sending e-mail/SMS to users after competition of their transactions (Ganguly, Dash, & Cyr, 2009; Venkatesh & Johnson, 2002). Secondly, communication effectiveness shows the website's suitability to perform the tasks. The key problem of communication effectiveness stems from the expectation gap between the user and the bank. This gap is the result of users' expectations from the website and information available on the website (Mukherjee & Nath, 2003). This gap could also be affected by user's perception of the information, background and text color, navigation style and complexity of the website (Cyr, 2008; Ganguly, Dash, & Cyr, 2009). Thirdly, communication interface which refers to the action required by the users to navigate through the website. If the interface which in this context is the website is poorly structured, lacks security and clarity, and/or includes noise and distortion, then the transaction may be adversely affected (Ganguly, Dash, & Cyr, 2009). Therefore, website should provide content clearly in a way that is simple to navigate and has a low level of complexity.

Internet-based banking services offer advantages to the consumers by allowing them to access their bank accounts from any location and at any time of the day. It has been found that apart from the perceived ease of use and the perceived usefulness (Davis, 1989), users' acceptance of internet banking services also depends on its website features such as website connectivity, clarity of instructions, speed of upload and download, etc. (Agarwal & Venkatesh, 2002; Ndubisi & Sinti, 2006).

Measurement of Website Quality

Many researchers studying e-commerce have developed their own instrument for evaluating website quality from users' perspective (Barnes & Vidgen, 2001; Loiacono, Watson, & Goodhue, 2007; Yoo & Dontu, 2001; Zeithaml, Parasuraman, & Malhotra, 2002). In the context of internet-based services, Zeithaml, Parasuraman and Malhotra (2002) have developed an instrument, E-SERVQUAL, to measure the extent to which a website facilitates efficient and effective shopping, purchasing and delivery of any e-service. This scale has eleven dimensions of e-service quality: reliability, responsiveness, access, flexibility, ease of navigation, efficiency, assurance/trust, security/privacy, price knowledge, site aesthetics, and customization/personalization. But all these dimensions measure the overall online service quality, i.e., the overall process of conducting online buying service quality and not specifically website quality. Thus, they do not specifically evaluate the quality of medium/channel (website) through which customers interact.

Barnes and Vidgen (2001) have used the quality function deployment (QFD) as a framework for evaluating website quality by its users and developed an instrument to measure website quality. This scale was tested in the context of a cyber bookshop with small samples of size 46, 54 and 39 for three websites, respectively. The factor structure varied significantly across the three websites, which raises questions about the stability of its theoretical conceptualization.

Yoo and Dontu (2001) have developed and validated a scale, SITEQUAL, to measure the perceived quality of an internet shopping website. The scale has nine items with four factors – ease of use, aesthetic design, processing speed and security. The scale was validated using only 47 subjects, which has been considered as too narrow for evaluating website quality (Loiacono, Watson, & Goodhue, 2007).

Loiacono, Watson and Goodhue (2007) developed an instrument to know how consumers' perceptions of websites affect their buying behavior and specially their intention to revisit the website so as to better explain the consumer evaluation of websites. It has 36 items with 12 factors relating to website quality and also it exhibits strong measurement validity. It was tested in the context of twelve different websites – three each of books, CDs, hotels and airlines with a considerably large sample size of 377 students.

WEBQUAL SCALE

The basic root of WEBQUAL is grounded in the technology acceptance model (TAM). TAM is considered a suitable model to explain individual behavior concerning website acceptance and predict reuse/revisit intention because of its parsimony and its robustness in explaining computer technology and information technology usage behavior. TAM suggests that two beliefs, namely perceived usefulness and perceived ease of use, play mediating roles in affecting the users' intention to use internet banking (Davis, 1986). Perceived usefulness refers to the extent to which an individual believes that the use of new technology will be helpful in improving his/her job performance. It comes from the definition of the word "useful" which means "having a useful function". In the context of e-banking website, it refers to the individual's perceptions about specific website features such as provision of relevant information that fit the task and improve performance, provision of structured communication between buyers and sellers, provision of secure and safe environment, and the time taken to perform services (Davis, 1989). Perceived ease of use refers to the extent to which an individual believes that the use of new technology is free of effort. It comes from the definition of the word "ease" which means "freedom from difficulty or hardship or effort". In this context, it refers to the individuals' perceptions of the extent to which using the website was perceived to be free of effort i.e. physical and/or mental efforts required to understand the text, display and labels, and to handle the navigation process (Davis, 1989).

Besides, entertainment and complementary relationships are also added in the scale to enhance the measurement of website quality. Entertainment includes visual appeal to measure aesthetics aspect of a website, innovativeness to measure the creativity and uniqueness of website design, and emotional appeal to measure the individual emotional intensity of involvement with the website. Complementary relationships include the consistent image, i.e., the compatibility of the website image with the image of the firm/product, online completeness that measures the overall support of the website to perform almost all website related services/facilities online, and relative advantage which measures the advantage of using particular website over other ways of performing services/transactions. Table 1 shows the complete list of WEBQUAL dimensions and their definitions.

Table 1: WEBQUAL Dimensions

Factor	**Dimension**	**Operational Definition**
Perceived Usefulness	Information Fit to Task	The information provided meets task needs and improves performance
	Tailored Communication	Structured communication between buyer and seller
	Trust	Secure communication and information privacy
	Response Time	Time to get a response after a query or a request
Perceived Ease of Use	Ease of Understanding	Easy to read and understand
	Intuitive operation	Easy to operate and navigate
Entertainment	Visual Appeal	Aesthetics of website
	Innovativeness	Creativity and uniqueness of design
	Emotional Appeal	Individual emotional intensity of involvement with the website
Complementary Relationships	Consistent Image	Compatibility of the website image with the image of the firm/product it is advertising
	Online Completeness	Provision for all necessary transaction to be completed online
	Relative Advantage	Better option than other means of interacting with the company
Source: Adapted from Loiacono, Watson and Goodhue (2007)		

WEBQUAL Vs. E-SERVEQUAL

WEBQUAL is an instrument employed to assess the users' general perception and belief about the quality of a website. It posits that quality of information in a website can be assessed by maintaining accuracy, precision, currency, timelines, reliability, completeness and relevance of a website. E-SERVQUAL is a multiple item scale for measuring customers' expectations and their perception of the service they received online. The E-SERVQUAL scores can be compared with the scores of the competitors to understand the service quality of the organization vis-a-vis similar organizations. E-SERVQUAL is considered as a well established instrument to measure service quality and can be applied to many domains including most of the areas of e-services (Parasuraman, Zeithaml and Malhotra, 2005). Here, the purpose is to measure the quality of e-service website (i.e. internet banking website) alone rather than whole e-service process as in E-SEVQUAL. For this reason, in this study WEBQUAL has been adopted to assess internet banking website quality.

RESEARCH METHOD

Data Collection

The data were collected through an online survey. There are several advantages of using online survey over traditional field based survey: (i) the sample is geographically distributed, (ii) sufficiently large sample size can be achieved in a short period of time; and (iii) the fact is that it costs much less than other traditional methods of data collection. Another major reason for appropriateness of online questionnaire was its obvious focus on online banking users. The questionnaires were sent to prospective respondents through e-mail. It was mentioned in both the e-mail and the questionnaire that participation in the study is voluntary. Few demographic details of the respondents were also collected.

A snowball sampling of online banking customers was done. It was made a pre-condition that respondents should have used internet banking at least once before. The reason behind this is that experienced users have a fair idea about the quality of their respective bank's internet banking website. If the users had access to internet banking services of more than one bank, they were asked to mention the name of the bank with which they transacted most. A total of five hundred and ninety three (593) filled questionnaires were received over a period of six months. Majority of the respondents were male (68.3%), which is consistent with IAMAI (2005). The age group of 19-45 years constituted a major portion (78.2%) of our sample which is similar to the Indian internet usage statistics of 85% (IAMAI report, 2005). The sample consisted of 36.5% graduates and 41.5% post-graduates, which is also supported by previous empirical studies in India (Prakash & Malik, 2008). Moreover, around 79.4% of respondents were using internet banking services for more than one year which affirms that our sample is appropriate for this study.

Measurement Instrument / Scale

Items for each of the constructs/factors have been selected from the original WEBQUAL scale to ensure the content validity of the scales. Most of the items in the WEBQUAL scale are taken from TAM; and one major advantage of using TAM scales is that they possess a well-validated measurement inventory (Davis, 1989; Venkatesh & Ramesh, 2006). It is quite possible that WEBQUAL can explain a considerable amount of website usability and information quality (tailored information and information fit to task). The questionnaire consists of two sections. The first section describes the nature of the study and asks the respondent to read the statements carefully and choose a score which best suits their experience of internet banking usage. For this purpose a seven point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) is used. The second section asks the respondents to give their demographic details such as age, gender, education, duration and frequency (in a month) of internet banking usage.

In the first section, all thirty-six items in the questionnaire were adopted from WEBQUAL scale given by Loiacono, Watson and Goodhue (2007). No changes were made to the original WEBQUAL questionnaire. All items used in the questionnaire are presented in Appendix A.

Measurement

Since the objective of the study was to assess the validity of WEBQUAL in the context of internet banking services in India, exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA) was done. For this purpose, the sample has been divided into two equal (approximate) sub-samples of size 297 and 296. Sub-samples were selected randomly by selecting ~50 percent of the cases option in filtering algorithm using SPSS 16.0. The first sub-sample (size 297) has been used for EFA, and the second sub-sample (296) has

been used for CFA. The objective of EFA is to identify the underlying dimensions of WEBQUAL in current context. Next, a CFA has been done to validate the factor structure of the identified dimensions.

Exploratory factor analysis

An exploratory factor analysis using SPSS 16.0 was applied to the 36 items of WEBQUAL to identify the factors affecting the internet banking website quality evaluation in Indian context. Table 2 exhibits that Kaiser-Meyer-Olkin (KMO) value, measure of sampling adequacy, at 0.89 exceeds the recommended cut-off value of 0.6 and Bartlett's test of sphericity test also reached statistical significance at $p<0.001$ (Hair et al., 2008). In accordance with the Hair et al. (2008) criterion, only those factors with Eigen values greater than 1 were retained for analysis.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.89
Bartlett's Test of Sphericity	Approx. Chi-Square	4.51
	Degree of Freedom	40
	Significance Level	0.00

Table 3 shows the results of the factor analysis with varimax rotation based on principal component analysis extraction method. This resulted in eight factors explaining 73.29 percent of the variance. Out of the total 36 items, 28 items loaded adequately on eight factors. Out of eight dropped items, five items have factor loading less than 0.4 and three items, one each from emotional appeal, innovativeness, and visual appeal dimension of WEBQUAL have high cross-loadings. Eight identified dimensions are perceived ease of use (PEOU), information relevancy (IR), image-completeness congruence (ICC), aesthetics (AES), trust (TRUST), response time (RT), relative advantage (RADV), and innovativeness (INNOV).

Table 3: Rotated Component Matrix

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
EUDSTD2	.82							
INTUIT3	.78							
EUDSTD3	.76							
EUDSTD1	.73							
INTUIT2	.71							
INTUIT1	.69							
TAILOR1		.85						
TAILOR3		.82						
INFO2		.78						
INFO1		.72						
CONSIMG2			.83					
OLCOMP1			.76					
OLCOMP3			.76					
CONSIMG1			.67					
VISUAL1				.72				
EMOTION1				.72				
EMOTION2				.70				
VISUAL2				.67				
TRUST1					.79			
TRUST3					.77			
TRUST2					.75			
RESPO1						.86		
RESPO2						.85		
RELADV2							.77	
RELADV3							.74	
RELADV1							.45	
INNOV1								.86
INNOV4								.67
Extraction method: Principle component analysis with varimax rotation								

In factor analysis, few WEBQUAL dimensions merged with other dimensions leading to the same underlying theoretical concept as in the original WEBQUAL scale. Perceived ease of use consists of two WEBQUAL dimensions—ease of understanding and intuitive operation. The second factor is labeled as 'information relevance' because it is a combination of two website quality dimensions namely tailored information and information fit to task. Similarly, third factor, labeled as image-completeness congruence, is a combination of two dimensions—consistent image and online completeness. The factors perceived ease of use and image-completeness congruence are conceptually similar to the second order constructs of the WEBQUAL scale. Another merged factor is labeled as 'aesthetics' as it comprises both visual appeal and emotional appeal of the bank website. For the measurement of survey scale reliability, scholars have used Cronbach alpha values. All factors in EFA have Cronbach alpha value greater than 0.70, which suggests that all factors have adequate scale reliability (Hair et al., 2008; Nunnally, 1978).

First order confirmatory factor analysis

To assess the measurement reliability and construct validity of identified factors, a CFA was done using AMOS 16.0. As shown in Figure 1, the measurement model consists of eight identified factors. These factors are shown with their measurement instruments and respective loadings. The co-variances among all eight factors are free to vary. First-order measurement model reflects adequate fit with chi-square (CMIN) value of 532.7 and 322 degree of freedoms resulting in chi-square to degree of freedom ratio (CMIN/df) of 1.75, which is less than the recommended value of 4 (Anderson & Gerbing, 1988; Hair et al., 2008). Seven other generally used model-fit indexes were also estimated to judge the model's overall goodness of fit. Table 4 presents all eight estimated model fit indexes of first-order measurement model.

Table 4: Model Fit Indexes for Measurement Models and Structural Model

Model Fit Index	Recommended Value*	First Order Measurement Model	Second Order Measurement Model
Chi-square to degree of freedom ratio (CMIN/df)	4.00 or below	1.65	1.69
Goodness of fit index (GFI)	0.90 or above	0.91	0.90
Adjusted goodness of fit index (AGFI)	0.80 or above	0.86	0.84
Normed fit index (NFI)	0.90 or above	0.93	0.91
Incremental fit index (IFI)	0.90 or above	0.95	0.92
Comparative fit index (CFI)	0.90 or above	0.94	0.91
Root mean square residual (RMSR)	0.10 or below	0.08	0.08
Root mean square of error approximate (RMSEA)	0.07 or below	0.04	0.05
*Recommended values as suggested by Anderson and Gerbing (1988) and Hair et al. (2008)			

Figure 1: First-Order Measurement Model

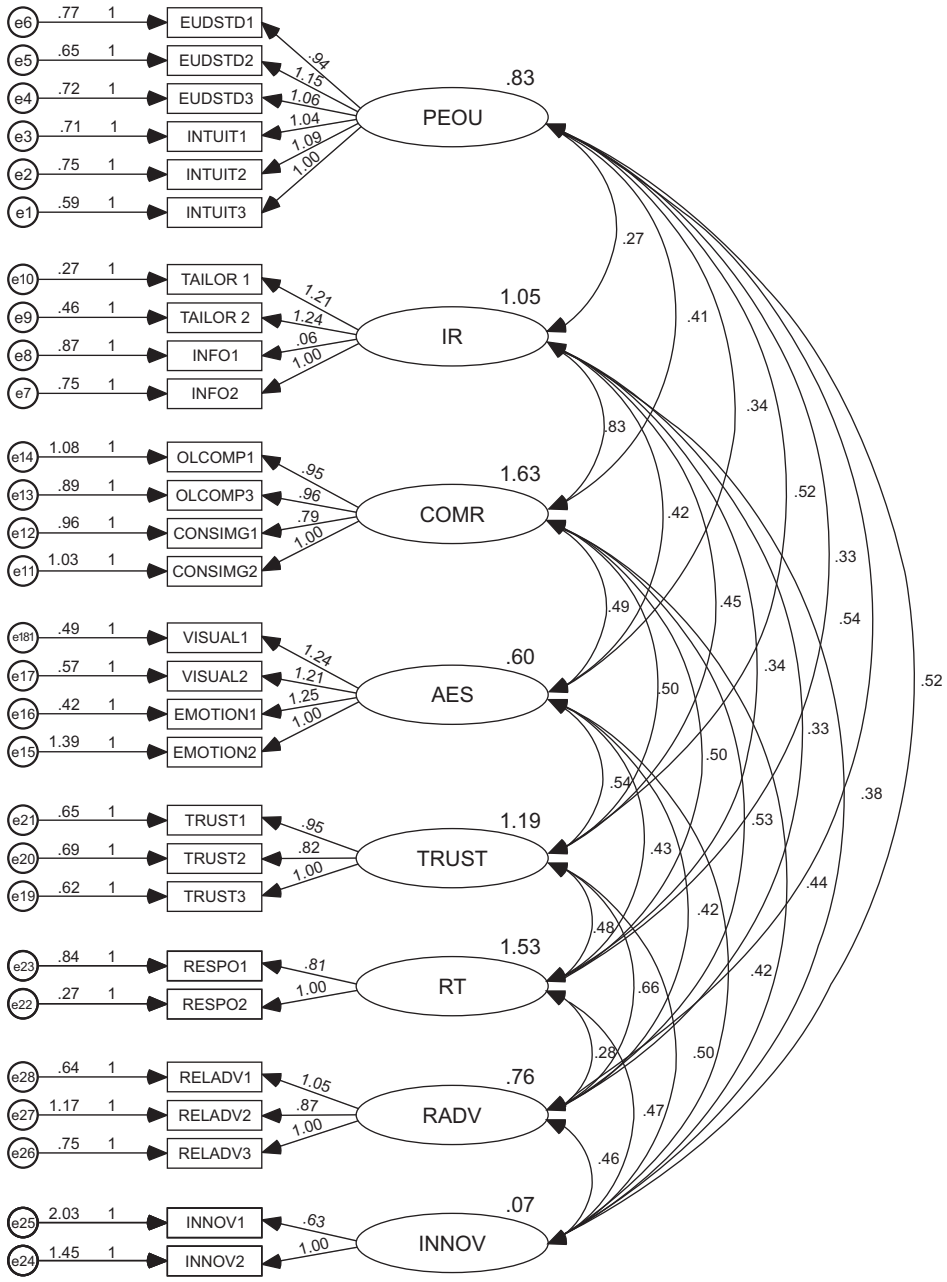


Table 5: Measurement Reliability of Items and Constructs

Construct	Item	Mean (S. D.)	λ	SMC	CR	A	AVE
Perceived ease of use	EUDSTD1	5.15 (1.23)	0.70	0.49	0.88	0.88	0.75
	EUDSTD2	5.30 (1.32)	0.79	0.62			
	EUDSTD3	5.06 (1.29)	0.76	0.57			
	INTUIT1	5.12 (1.27)	0.74	0.55			
	INTUIT2	5.14 (1.32)	0.75	0.56			
	INTUIT3	5.14 (1.19)	0.75	0.57			
Information relevancy	TAILOR1	4.61 (1.35)	0.92	0.85	0.89	0.89	0.82
	TAILOR3	4.51 (1.44)	0.88	0.77			
	INFO1	4.54 (1.36)	0.72	0.52			
	INFO2	4.79 (1.34)	0.76	0.58			
Image-Completeness congruence	CONSIMG1	4.78 (1.41)	0.72	0.51	0.84	0.84	0.76
	CONSIMG2	4.09 (1.63)	0.78	0.61			
	OLCOMP1	4.53 (1.61)	0.76	0.58			
	OLCOMP3	4.32 (1.55)	0.79	0.62			
Aesthetics	VISUAL1	5.39 (1.19)	0.81	0.65	0.83	0.82	0.74
	VISUAL2	5.35 (1.21)	0.77	0.60			
	EMOTION1	5.44 (1.17)	0.83	0.70			
	EMOTION2	5.43 (1.41)	0.54	0.30			
Trust	TRUST1	5.22 (1.31)	0.79	0.62	0.82	0.82	0.77
	TRUST2	5.54 (1.23)	0.73	0.53			
	TRUST3	5.54 (1.35)	0.81	0.66			
Response time	RESPO1	5.19 (1.36)	0.78	0.61	0.81	0.81	0.82
	RESPO2	5.23 (1.34)	0.86	0.75			
Relative advantage	RELADV1	5.26 (1.22)	0.73	0.54	0.72	0.72	0.68
	RELADV2	5.24 (1.32)	0.58	0.34			
	RELADV3	5.45 (1.23)	0.71	0.51			
Innovativeness	INNOV1	4.78 (1.44)	0.55	0.31	0.76	0.73	0.70
	INNOV3	4.88 (1.28)	0.84	0.71			

Note (Abbreviation): *S.D. = Standard Deviation, λ = Standardized Factor Loading, SMC = Squared Multiple Correlation, CR = Composite Reliability, α = Cronbach Alpha, AVE= Average Variance Explained*

Measurement Reliability

Fomell and Larcker (1981) emphasized both the reliability of each measurement item (indicator) and the reliability of each construct. The measurement reliability of measurement model was assessed through Cronbach alpha (α) and squared multiple correlations (SMC). Cronbach alpha is a measure to estimate construct reliability, while SMC is a measure to estimate indicator reliability. As mentioned in Table 5 above, Cronbach alpha values are greater than cut-off values of 0.70 (Hair et al., 2008), and all SMC values are greater than 0.30 (Baggozi & Yi, 1988).

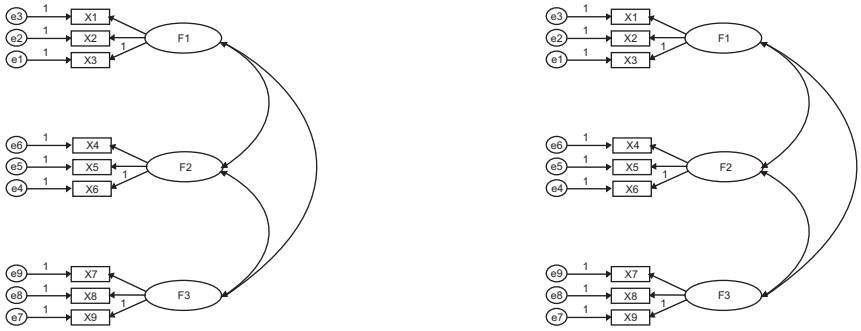
Convergent Validity

Convergent validity is defined as the degree to which items of measurement instrument correlate with items in the measurement instrument that are intended to measure the same construct. Hair et al. (2008) suggested three criterions to ensure convergent validity: standardized factor loading of each individual indicator should be greater than 0.50, the average variance explained value for each construct should be greater than 0.50, and composite reliability (CR) value for each construct should be greater than 0.70. As shown in table 5, first-order measurement model satisfies all three requirements. Therefore, this measurement model shows adequate convergent validity.

Discriminant Validity

It is a measure to test that the constructs intended to measure different theoretical concepts do not highly correlate with each other. There are two ways to ensure discriminant validity: Pair-wise construct comparison method (Anderson & Gerbing, 1988; Bagozzi & Philips, 1982; Bagozzi & Yi, 1988) and comparison of shared variance between factors with the square root of average variance explained by individual factors (Fornell & Larcker, 1981).

Fig. 2: Full vs. Collapsed model comparison for assessing discriminant validity



In pair-wise comparison method, we compare all 28 possible pairs for the 8 factors separately. For each pair, the chi-square value of the full model was compared with the chi-square value of the collapsed model (one pair of constructs was collapsed). More precisely, in the collapsed model, the model is same as the full model except that one pair of target factors was constrained to have a correlation of 1 (Figure 2). Anderson and Gerbing (1988) suggested that if the collapsed model is significant and its chi-square value is more than the values of the full model by four or more, then the free model reflects a better fit than the collapsed one. This indicates that collapsed factors are not measuring the same concept and hence increasing chi-square value i.e. collapsed factors are discriminant from each other. As shown in Table 6, for each possible combination of 28 collapsed models, chi-square value has increased by more than four and hence all factors are discriminant from each other.

Table 6: Pair-Wise Construct Comparison for Discriminant Validity

Model	χ^2 Value (df)	Model	χ^2 Value (df)
Original full model	532.7 (322)		
PEOU and IR	588.9 (323)	ICC and TRUST	560.4 (323)
PEOU and ICC	563.7 (323)	ICC and RT	549.7 (323)
PEOU and AES	579.3 (323)	ICC and RADV	548.6 (323)
PEOU and TRUST	569.1 (323)	ICC and INNOV	544.5 (323)
PEOU and RT	575.3 (323)	AES and TRUST	561.7 (323)
PEOU and RADV	554.4 (323)	AES and RT	560.8 (323)
PEOU and INNOV	571.0 (323)	AES and RADV	561.8 (323)
IR and ICC	565.7 (323)	AES and INNOV	557.8 (323)
IR and AES	563.2 (323)	TRUST and RT	563.9 (323)
IR and TRUST	570.4 (323)	TRUST and RADV	550.9 (323)
IR and RT	566.4 (323)	TRUST and INNOV	570.9 (323)
IR and RADV	571.2 (323)	RT and RADV	573.5 (323)
IR and INNOV	561.0 (323)	RT and INNOV	566.6 (323)
ICC and AES	553.5 (323)	RADV and INNOV	570.6 (323)
Note: χ^2 value= chi-square value, df = degrees of freedom			

Besides, to ensure discriminant validity, Fornell and Larcker (1981) recommended the comparison of correlations among constructs with the square-root value of average variance explained. They suggested that to achieve discriminant validity, the diagonal value should be greater than the non-diagonal values. As Table 7 clearly shows, all eight factors are different from each other.

Table 7: Comparison of Inter-Construct Correlation for Discriminant Validity

Construct	PEOU	IR	ICC	AES	TRUST	RT	RADV	INNOV
PEOU	**0.86**							
IR	0.28	**0.90**						
ICC	0.35	0.63	**0.87**					
AES	0.48	0.52	0.49	**0.86**				
TRUST	0.52	0.39	0.35	0.63	**0.88**			
RT	0.28	0.27	0.32	0.45	0.36	**0.90**		
RADV	0.67	0.37	0.47	0.62	0.69	0.25	**0.82**	
INNOV	0.37	0.36	0.42	0.53	0.34	0.61	0.30	**0.83**
Note: *PEOU=Perceived ease of use, IR=Information relevance, ICC=Image-completeness congruence, AES=Aesthetics, RT=Response time, RADV=Relative advantage, INNOV=Innovativeness (All correlations were significant at p<0.001)*								

Second-Order Confirmatory Factor Analysis

Second-order constructs represent the higher underlying concepts explained through first-order constructs, i.e. the first-order constructs are now acting as indicators for second-order constructs. Unlike the original WEBQUAL scale, in this study three second-order factors (perceived usefulness, entertainment, and complementary relationships) have been found. Here perceived ease of use is found to be a first-order construct. As shown in Figure 3, perceived usefulness (PU), entertainment (ENT) and complementary relationship (COMR) are formed by respective first-order constructs as suggested in WEBQUAL (Table 1 above). Second-order measurement model is evaluated by AMOS 16.0. AMOS output shows that the model is fit adequately with chi-square value of 558.69 and 330 degree of freedoms. As shown in Table 4, the values of other goodness of fit indices also suggest a satisfactory model fit. On comparing the chi-square statistics of first-order measurement model and second-order measurement model, the difference between the two chi-square statistics is found to be 25.97 (558.69 minus 532.72) for 8 (330-322) degrees of freedom, significant at $p<0.001$. Thus, second-order factor model has also been found to equally fit with the given data as the ratio of increase in chi-square to increase in degree of freedom is 3.25 (< 4.00).

Researchers suggest that as higher-order factor models are more parsimonious, they should perform better on parsimony indexes like PRATIO, PNFI, and PCFI etc (Hair et al. 2008). AMOS output results of the model fit indices of both the models (see Table 4) show that the PRATIO, PNFI and PCFI values of the second-order factor model (0.95, 0.81 and 0.86 respectively) are greater than that of the first-order measurement model (0.91, 0.80 and 0.84 respectively). Since the second-order confirmatory factor analysis did not result in a significant decrease in the model fit statistics, it can be concluded that the hypothesized second-order model provided a good account for the correlations among the first-order factors.

Figure 3: Second-order measurement model

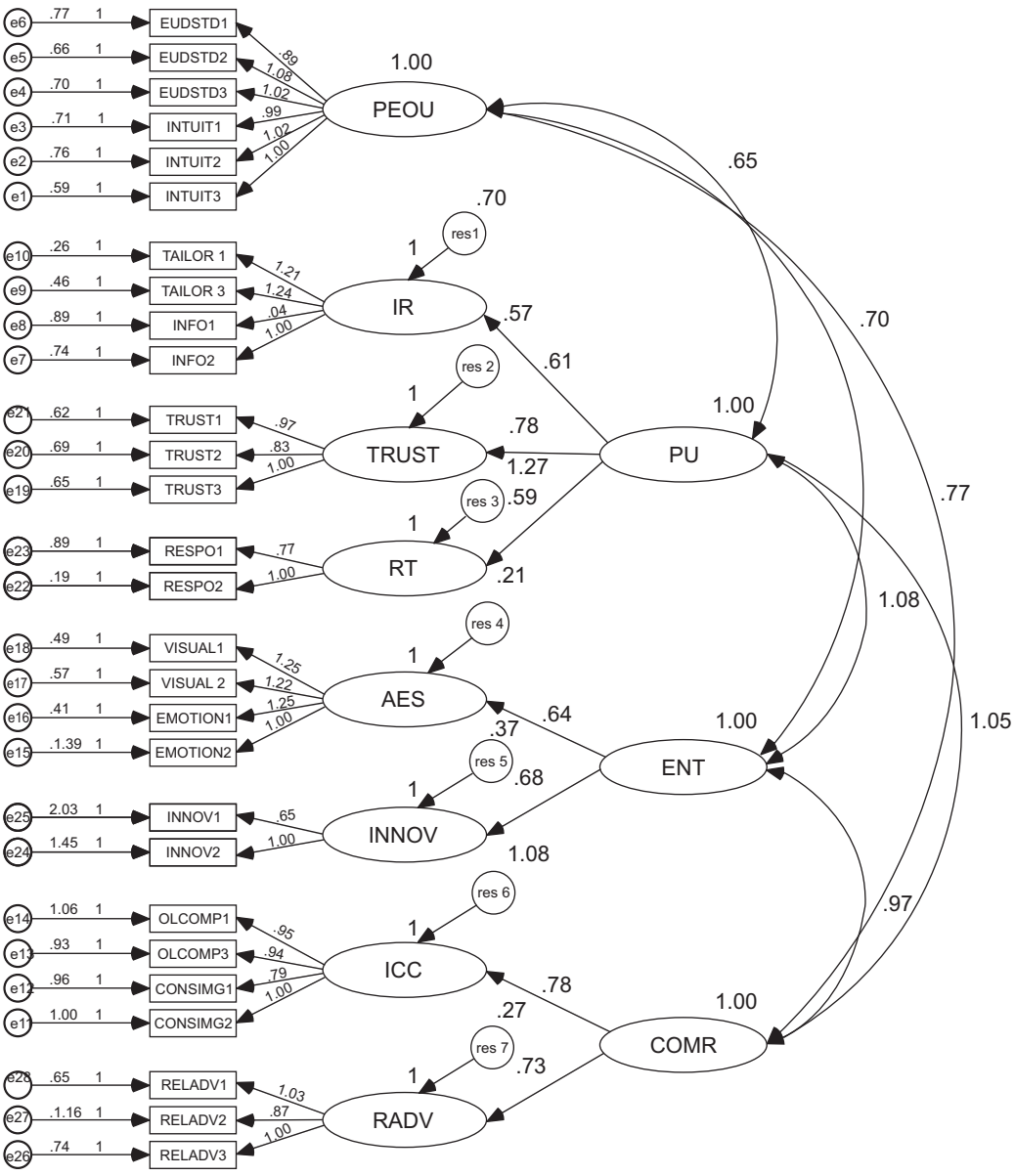


Table 8: Comparison of Parsimony Index

Parsimony Index	First-Order Measurement Model	Second-Order Measurement Model
PRATIO	0.91	0.95
PNFI	0.80	0.81
PCFI	0.84	0.86
Source: Hair et al. (2008)		

DISCUSSION AND CONTRIBUTION

This study identified that the issue of website quality is one of the key attributes of online banking adoption and usage. Previous literature has empirically shown that several website features such as visual design, navigation design, information design and privacy and trust related issues of the website affect individual online purchase decisions among customers in western countries like Canada (Cyr, 2008). Researchers have also found that these constructs are significant predictors of trust in the context of online shopping in India (Ganguly, Dash and Cyr, 2009). This study has provided empirical evidence that evaluation of websites represents the generic mechanism through which e-vendors can affect users' reuse intention of an internet banking website. This is in accordance with the work of Dash and Saji (2006) for the Indian context, which pointed out that trust mediates the relation between website design and purchase intention.

The output of this work provides some interesting variations in WEBQUAL dimensions for the context of internet banking in India. From these it can be inferred that the higher order construct of perceived usefulness has dimensions information fit to task and tailored information merged into one. This can be attributed to both of them defining a level of customization of information, i.e. provision of relevant information to the customer in structured manner by the bank. For perceived ease of use, the dimensions ease of understanding and intuitive operation merge, indicating that for the given context, perceived ease of use is only a first-order construct. This may be attributed to the notion that if the customers can easily understand what they see and read, it becomes easy for them to navigate and carry out necessary operations. For entertainment, visual appeal and emotional appeal merge. This can be attributed to the aesthetics of the website being linked to the level of hedonic involvement by Indian customers. Likewise for complementary relationships, consistent image and online completeness merge together. This can be attributed to the efforts of the banks to be consistently seen as a facilitator of necessary online transactions. Thus, for the given context, we have just three second-order constructs instead of the original four. This disparity may be attributed to the change in context and the nature of the WEBQUAL scale which is highly context specific (Barnes & Vidgen 2001) and culture specific (Kim & Lee, 2006).

A limitation of the development of the WEBQUAL scale is that it involved only student respondents evaluating websites and not actual customers. The sample for this research consisted of actual customers—those that had at least one experience of internet banking. Thus, this research overcomes this drawback.

The study assumes significance in the light of the comments of Zeithaml et al. (2002) that now, more than low prices it is the service quality delivery through websites that is essential for success. Considering the website as the interactive medium for transaction, the point of contact and the representative face of the bank in the online context, the website and its quality assume a lot of significance. This research is made more worthwhile by the observations of Zeithaml et al. (2002) that the focus of the firms should now shift beyond just enabling transactions. The focus should be to incorporate all the encounters and cues the customers receive not just during the transactions but before and after as well. Thereby, websites and their quality assume huge significance in such scenarios where repeat purchases and loyalty are so important for marketers. This study makes an attempt to uncover and analyze the dimensions of website quality that are important for Indian internet banking customers.

Many researchers including Nitsure (2003) say that electronic banking is the next wave of tomorrow, and internet banking is the latest channel transforming the whole banking process. Many including Nitsure (2003) also point out that since the competitor bank is just a click away, the loyalty of the customer is on shaky ground. The customer may switch to the competitor in no time. Website quality in such an environment clearly becomes a serious concern for banks.

Implications

This study suggests that information quality, trust, etc. play a key role in ascertaining the web viewers' purchase-related intentions as well as assimilates much information related to website quality perceptions. For example, information quality is completely critical for both the information completeness and the ease of use (navigation) in online shopping context. Similarly, trust could completely affect the effect of information completeness on behavioral intentions in an emerging economy like India.

This study also offers a number of managerial implications. First, banking companies need to pay attention to how they can satisfy customers through online product/service presentations before they expect online transactions. Satisfaction with website information was a major determinant of e-customers' intention to purchase that brand. Banks should therefore pay attention to the information they provide their customers with and provide these tailored to their requirements and in a structured manner. Banks should ensure that the aesthetic aspects of the websites should be appealing enough to involve their customers emotionally. These results indicate the importance of visual design, navigation design, information design and communication for an online channel interface like website. This has been corroborated by many researchers (Ganguly, Dash, & Cyr, 2009).

In India, the early offering of internet banking gave a competitive edge to the private sector banks and then the public sector banks followed suit and tried matching the competition (Nitsure, 2003). The website quality could now be the real differentiator. This makes studying the various factors affecting website quality all the more important in the Indian internet banking context.

Limitations and scope for further research

Similar to most of the research in this area, this study is also not free of limitations. Although this study is confirmatory in nature, according to Barnes and Vidgen (2001), WEBQUAL scale is highly context specific; so it is very difficult to get common factors/dimensions when applying to any particular bank's website, since different dimensions may vary with respect to different internet banking websites. Besides, the inter-relationships between other factors have not been considered as most of the recent studies on website interactivity suggest. These includes factors like trust which have been proved to always have a positive impact on perceived usefulness (Dash & Saji 2007; Jiang et al. 2010). These limitations require the attention of researchers for further exploration and development of WEBQUAL scale. Further, researchers may undertake validating the above results using other popular scales. Researchers are encouraged to do a comparative analysis of similar scales for the measurement of website quality and provide a more meaningful insight into their differences and shed light on their relative advantages and disadvantages. An alternative scale by Aladwani and Palvia (2002) could be looked into.

Finally, this study suffered a chronic low response rate pervasive in online surveys. It is not clear how serious response bias was and to what extent such potential response bias affected our results and conclusions. Although we could have implemented a follow-up procedure, such a large-scale national survey added a significant amount of undue costs and the benefit of follow-up was not clear at that time. It is hoped in general that researchers pay attention to how to improve response rates for online surveys like the present one and provide effective strategies.

Conclusion

This study validated the WEBQUAL scale for the Indian context. It emphasized how the WEBQUAL scale could be effectively used to assess internet banking website quality based on the perspectives of Indian customers. Application of both exploratory and confirmatory factor analysis on responses obtained via an online questionnaire provided some interesting variations in WEBQUAL dimensions for the context of internet banking services in India.

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Appendix A: Measurement Scale (adopted from Loiacono et al. 2007)

Construct	Items
Information fit to task	The information on the Web site is pretty much what I need to carry out my tasks. (INFO1)
	The Web site adequately meets my information needs. (INFO2)
	The information on the Web site is effective. (INFO3)
Tailored information	The Web site allows me to interact with it to receive tailored information. (TAILOR1)
	The Web site has interactive features, which help me accomplish my task. (TAILOR2)
	I can interact with the Web site in order to get information tailored to my specific needs. (TAILOR3)
Trust	I feel safe in my transactions with the Web site. (TRUST1)
	I trust the Web site to keep my personal information safe. (TRUST2)
	I trust the Web site administrators will not misuse my personal information. (TRUST3)
Response time	When I use the Web site there is very little waiting time between my actions and
	The Web site loads quickly. (RESPO2)
	The Web site takes long to load. (RESPO3)
Ease of understanding	The display pages within the Web site are easy to read. (EUDSTD1)
	The text on the Web site is easy to read. (EUDSTD2)
	The Web site labels are easy to understand. (EUDSTD3)
Intuitive operation	Learning to operate the Web site is easy for me. (INTUIT1)
	It would be easy for me to become skilful at using the Web site. (INTUIT2)
	I find the Web site easy to use. (INTUIT3)
Visual appeal	The Web site is visually pleasing. (VISUAL1)
	The Web site displays visually pleasing design. (VISUAL2)
	The Web site is visually appealing. (VISUAL3)
Innovativeness	The Web site is innovative. (INNOV1)
	The Web site design is innovative. (INNOV2)
	The Web site is creative. (INNOV3)
Emotional appeal	I feel happy when I use the Web site. (EMOTION1)
	I feel cheerful when I use the Web site. (EMOTION2)
	I feel sociable when I use the Web site. (EMOTION3)
Consistent image	The Web site projects an image consistent with the company's image. (CONSIMG1)
	The Web site fits with my image of the company. (CONSIMG2)
	The Web site's image matches that of the company. (CONSIMG3)

TIME PERSPECTIVE'S ROLE IN STRESS LEVELS: EMPIRICAL EVIDENCE

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Abstract. With the continuing development of time perspective, stress can be treated as an important outcome variable considering the current dynamic environment. Although Zimbardo and Boyd (1999), and Boniwell and Zimbardo (2003, 2004) have covered time perspective and its implications for clinical psychology patients, we take their findings and analysis a step forward by discussing balanced time perspectives' role in stress for managers. In this study we investigated the relationship between time perspective and stress, and verified the moderating effect of self-monitoring of the time orientation on the above relationship. We have four factors of stress, namely self-role distance, inter-role distance, role boundedness and personal inadequacy whose levels vary with the time orientation of the person (Pareek , 1997). This study is done with a questionnaire survey. The findings support the hypothesis and pave way for future research, which is also discussed.

Keyword: Time perspective, balanced time perspective, and stress

INTRODUCTION

Time is a resource which should be 'measured and manipulated in the interest of organizational efficiency and effectiveness' (Bluedorn & Denhardt, 1988). Issues of time and timing are most important to modern management: "where did the time go?" "Time flies" "We must have this ready on time" "Does anybody know what time is it?" "Time is money". "How long will it take?" "I never seem to have enough time!" Time perception of a person is designed by the experiences he or she has in life and can vary depending upon the particular context involved. A person's time orientation can be grounded in his or her past, present or future-orientation, and it has an impact on his/her approach towards all situations in life. In the past, time has been related with money, health, happiness and many other important aspects of human life. If people will be able to achieve flexible temporal orientation, it would ensure that employees will be healthier, happier, self-motivated, performance-oriented; their well-being will be ensured and they would also face less stress. Thus, it is important to study the same, so that organizations can ensure corrective measures are taken to implement right time-orientation in the employees.

LITERATURE REVIEW

Time perspective (TP) is said to have cognitive, emotional and social components (Lennings & Burns, 1998). The formation of time perspective is influenced by several factors, some learned in the process of socialization, such as one's cultural values and dominant religious orientation, kind and extent of education, socio-economic status and family modeling (Lee & Liebeneu,1999). But TP can also be influenced throughout one's life course development by the nature of one's career, economic or political instability, and personal experiences with mind altering substances, traumatic events or personal successes. TP is further regarded as an expression of a person's own system of meanings that allows one to develop a coherent framework for living (Thoms, Warner, & Totleben, 2006). This central aspect of human nature can be shown to affect attention, perception, decision making and a variety of mundane and significant personal actions (Thoms et al., 2006; Zimbardo & Boyd, 1999). TP has the most powerful influence over almost all dimensions of human behavior. It can shape the quality of life of individuals and even the destines of nations, such as when a majority of individuals adopt a biased temporal orientation that overly promotes a focus either on past, or future, or the present.

Zimbardo and Boyd (1999) found that time perspective can be categorized into five factors: past negative (PN), reflecting a negative view of the past; past positive (PP), reflecting a positive sentimental attitude towards the past; present hedonistic (PH), talking about the risk-taking attitude of a person; present fatalistic (PF), being helpless and mostly having a hopeless

attitude towards the future and life; and finally, futuristic (F) orientation, allowing people to prepare themselves for their future activities making them cautious of their decisions and actions.

It is proven that present-oriented individuals have a more practical attitude, tending to focus on reality rather than on expectation (Alessio, Guarino, Pascalis, & Zimbardo, 2003; Milfont, Andrade, Belo, & Pessoa, 2008; Zimbardo, et. al., 1999). People oriented towards the hedonistic present are self-indulgent pleasure-seekers and shirk all responsibility they have towards work, to gain pleasure in the present. They love to play sports and enjoy hobbies and are often involved in activities requiring a great deal of energy. At the same time they turn out to be more sensitive and touchy, and become antisocial and aggressive whenever they intend to break the rules. People oriented towards the fatalistic present feel their lives dominated by external forces rather than by their own actions. They let themselves be taken over by fate completely. These people tend to be inclined towards fatalism; they always blame themselves for the failures in life and don't take credit for their own achievements.

Time perspective influences our behavioral actions which include decision making, judgments, etc (Alessio et al., 2003; Milfont et. al., 2008; Zimbardo & Boyd, 1999). In the discussion of past time perspective we find that, "The dominant influence for some comes from the past, from recalling analogous prior situations, with memory of the costs and benefits that attended those decisions. Their recall may be nostalgic and positive or ruminative, traumatic, aversive, and negative, and they may remember accurately or distort the past. Such a focus on the past can significantly affect the interpretation of an individual and response to the current decision situation, even dominating its intrinsic stimulus" (Alessio et al., 2003; Milfont et al., 2008; Zimbardo & Boyd, 1999). If a person becomes grounded in any one of the time perspectives i.e. past, present or future then that serves as a cognitive bias. This bias is then considered as an individuals' dispositional style or individual-differences variable which will predict an individual's response to the choices in life. Thoms and Greenberger (1995) in their contribution explain that some individuals tend to have particularly strong images of them from the past and they recall these events with greater frequency than they think of themselves in either the present or the future. In contrast, other people rarely recall themselves in the past or think of themselves in the present, these individuals tend to think of themselves in the future and place themselves in this context. Timeline orientation is a dimension of thought, not action.

Future-oriented people show great concern about the consequences of their actions, are self-responsible and super achievers. They are also ready to put a great deal of effort and ingenuity into their work, as they seek long-term gratification. These people are usually safe from emotional risks and tend to look after their health, thus avoiding long-term negative consequences: they stick to keep-fit schemes. They are good at avoiding temptations and distractions and devote most of their energies and actions to the achievement of a goal (Alessio et al., 2003; Milfont et al., 2008; Zimbardo et al., 1999). However, these people are unable to enjoy the present. One of their biggest aspirations is to increase their efficiency so as to do many things at a time.

Finally, past-oriented people act and decide in response to recurrent situations of their past experiences. These people do not take chances; they tend to be conservative, as they are not attracted to novelties. Myths and rituals have an impact in their lives and they are often more prejudiced than future-oriented people owing to their distrust of anything or anyone different. People who are grounded in past positive have a stability factor which also helps them in having knowledge about self which is a positive feature (Alessio et al., 2003; Milfont et al., 2008; Zimbardo et al., 1999). If they had positive experiences in the past, they rejoice in recalling them despite their present unhappiness. Any negative experiences in past would affect their present life.

Balance is defined as "the mental ability to switch flexibly among TPs depending on task features, situational considerations, and personal resources rather than be biased toward a

specific TP that is not adaptive across situations" (Boniwell & Zimbardo, 2004).The idea of a "balanced TP" is being promoted as one which is most psychologically and physically healthy for individuals and optimal for societal functioning. The future focus gives people a vision which allows them to imagine themselves as high achievers, the past (positive) provides traditional roots and also gives a sense of self, and the present (hedonistic) focus enhances peoples' daily life where they tend to have fun and enjoy the present. People need all the time orientations at different times to realize fully their human potential.

Balanced time perspective (BTP/balanced TP) allows people to shift focus from one time perspective to the other in different situations; depending upon the action they need to take they can shift their focus (Boniwell et al., 2004). People while spending time with their family and friends enjoy completely as they have a common past and they value it. While they take a day off they enjoy the activities they do and forget about the work that has to be done. However, it has been observed that while working or studying one must have future time perspective to be more productive in the task being performed. Indeed, when work is to be done and valued, the balanced TP person may get into the flow of enjoying being productive and creative—a present hedonistic state for a future focused activity. That is when work becomes play as the worker becomes engaged with the process of the activity and not only with a focus on the product of her or his labors.

Flexibility and switch ability are essential components of a balanced TP; "the optimal time perspective depends upon the demands of the situation and its task and reward structure" (Epel, Bandura, & Zimbardo, 1999). These researchers argue that among the unemployed living in homeless shelters and experiencing pressure to find other affordable accommodations, it may be better to be present-oriented when dealing with an acute crisis. While future TP allows a greater degree of self-efficacy and fosters one's optimism for future gains, present orientation may be more effective in allowing oneself to be open to finding immediate solutions to current challenges. While evidence seems to suggest that temporal flexibility is important for dealing with extreme circumstances, it fails to explain why such flexibility is important in dealing with the hassles of everyday life. However the optimality of a balance between time perspectives is important; otherwise, people who move into the future should reconcile with their past experiences while staying grounded in the system of meanings derived from the present.

Knowledge and understanding of time perspective can be a used as a tool in psychological counseling. An insight into how clients think and feel about their past, present and future experiences and about their connectedness and disconnections serves as a starting point for therapeutic explorations. The concept of balanced time perspective can also be fruitfully implemented in an organizational context (Boniwell & Zimbardo, 2004). It is our belief that the current pressures being experienced by workers in offices and factories around the world will not be resolved by more time-management techniques. Normative experience is that within about six months following a time-management training program, participants revert to their own practices of time management. We believe this happens for two reasons. First, these programs are promoted by management and essentially are designed to make workers more future-oriented, more productive, and less wasteful of company time. But much of the sense of time pressure and work urgency comes from workers who are already overly future-oriented. They need very different time training. Secondly, most time management techniques are not tied to the actual psychology of peoples' understanding of time. The construct of time perspective has a potential to provide a theoretical underpinning for time management interventions. One should be able to switch to different time-orientation as required; accordingly interventions must be designed based on an understanding of workers' TP profiles. This would help them recognize the TPs associated with them which are dominating. This ability can be useful in reducing, and ideally preventing, occupational stress. They can also be invaluable in solving the eternal dilemma of balancing the dialectic of work and play/leisure, or of work as a source of personal engagement versus a source of job burnout (Maslach & Leiter, 2008).

Drake, Duncan, Sutherland, Abernethy, and Henry (2008) suggest that a balanced time perspective would let the person flexibly transit among the temporal orientations that are appropriate to the situation. However, some individuals may use a particular orientation too much, and other orientations may be used less than the other; this leads people to become biased in their time perspective. For example, present oriented people enjoy the moment, undistracted by past worries or future anxieties, but then they are not able to delay gratification and plan a path to realistic goals. They are not concerned about the warnings against their current behavior which may have negative outcomes in the future. People with high future orientation are good at setting and achieving goals and planning strategies for meeting long-term obligations. They may also be able to restrain themselves from engaging in tempting behaviors because of an increased ability to articulate a set of negative consequences more clearly, as well as visualize and formulate future goal states that then shape current judgments and decisions. Those with high past-orientation are able to appreciate and honor traditions and previous obligations and review memories that may have a positive influence on current decisions, but they may also be conservative in their maintenance of the status quo and reluctant to experience the unfamiliar or deal with change (Drake et al., 2008).

A balanced time perspective (BTP) is the state and the ongoing process of being able to switch flexibly between these time frames as most appropriate to the demands of the current behavioral setting (Zimbardo & Boyd, 1999). In an optimal balanced time perspective, the past, present and future components should blend and flexibly engage, depending on a situation's demand and our needs and values (Boniwell & Zimbardo, 2004; Keough, Zimbardo, & Boyd 1999;). To further discuss BTP's implications, organizations that have a positive outlook would help in resolving current work pressures. So, the employees would be given time-orientation training, in such a way that workers are more future-oriented, more productive, and less wasteful of company time. The employees falling high in future-oriented time perspective would require a different training program than others who would fall in the category of other time perspectives. The focus of time-orientation technique can shift from advocating generalized time orientation strategies—like take time off, or put more focus on one's work—to develop interventions based on an understanding of workers' TP profiles. This would help in recognizing the associated internal states and TP cognitive biases that unconsciously dominate workers. This would also be greatly useful in reducing and ideally preventing occupational stress. A dilemma can be resolved through correct balance between work and pleasure or work and burnout (Maslach et al., 2008).

In this study, we tested the influence of time perspective on persons stress level. The contribution made by our study is to confirm the statement by Zimbardo and Boyd (1999), Boniwell and Zimbardo (2004), and Drake et al. (2008) that people with balanced time perspective will lead a more optimal life physically and psychologically. We provide empirical evidence to prove that time perspective does affect stress levels of an employee in an organization. Depending upon the time-orientation, a person has varied levels of stress; we also wanted to see whether balanced time perspective leads to reduced level of stress. This study hopes to provide the evidence to the questions which seem to suggest that temporal flexibility is important for dealing with stressful circumstances. Finally, it would be of guidance to the organizations to help their employees to avoid stress in order to perform better; this can be achieved through correct training which would make the employees understand how to be flexible in their temporal orientation of time to achieve or lead an optimal life.

It is assumed that people do not fool themselves, that they learn from past mistakes, and that they make reasonably accurate predictions of the consequences of their choices. Furthermore, people are assumed to follow their preferences rather than acting erratically or mindlessly (Hirata, 2004). The actual meaning of the concept of utility is rarely spelled out, but it is usually taken to be similar to "happiness" or "satisfaction." As such, it is not necessarily to be understood as materially egoistic behavior or as aiming at superficial pleasure only, but rather as an encompassing experience of satisfaction from various sources (including "psychic income").

CONCEPTUAL BACKGROUND AND HYPOTHESES

Stress in an organization could arise out of task and role ambiguity, role conflict and self-role incongruence. Anyone in an organizational position of responsibility experiences such conflict. Role is a fundamental unit in the organization as they are performed by interconnected positions for achieving organizational goals (Katz & Kahn, 1966). The complex and dynamic environment in which organization have to exist, adapt themselves and grow, adds to further stress at work. These environmental forces include: globalization, rapid technological advancements, their adoption in organizations and consequent changes in the nature of jobs and the demands made on employee skills; increased employee expectations about the quality of work-life and incongruence between these expectations and the received organizational outcomes or benefits; changes in organizations in terms of downsizing, resizing, mergers, expansions, closures, etc., affecting employment security, social relations at work and upward mobility (Harigopal, 1995). As business environments and organizations grow more competitive and complex, stress at work is also bound to increase. "Stress is basically an adaptive response, moderated by individual differences that are a consequence of any action, situation, or event that places special demands on a person" (Ivancevich, Matteson, & Preston, 1982).

Zimbardo & Boyd (1999) said that our responses differ individually because of our time orientation; so stress should be affected by the temporal orientation of a person as that also influences his/her behavior. Zimbardos' Time Perspective Inventory (ZTPI) is also known for predictive utility in health risk behaviors. Thus, we can say that stressful behavior can be affected by or predicted by the time-orientation of a person.

Role conflicts lead to stress (Katz et al., 1966). A person with balanced time perspective is proposed as a more positive alternative to living life as he would be adaptive, depending on external circumstances and optimal in terms of psychological and physiological health. Role is the position one occupies in a social system. Katz and Kahn (1966) mention that office is essentially a relational concept, defining each position in terms of its relationships to others and to the system as a whole. A role is defined by the role occupant and role senders. This definition is vital for the organization; an organization can be defined as a system of roles.

A job is stressful to the extent to which it provides the conditions for poor fits either with environment or task. Job stress or poor person-environment fit in the job environment can lead to several types of strain and may finally lead to ill health (Cryer, McCraty, & Childre, 2003).

Self-role distance indicates conflict between the self-concept and the expectation from the role, as perceived by the person. For example, an introvert, who is fond of studying and writing, may develop a self-role distance if he accepts the role of a salesman and comes to realize that the expectations from the role include meeting new people and being social; he will be stressed (Pareek, 1997). In this case a futuristic time perspective person would think about his/her goal and perform the role. Similarly, other perspectives would have different influences, but if the person has the ability to be flexible in his temporal orientation, then he would not be under any stress.

- **Hypothesis 1:** The self-role distance would be low if the person has balanced time perspective i.e. the temporal orientation moderates the required relationship.

Inter-role distance is when an individual occupies more than one role; there are bound to be conflicts between them. For example a working mother plays various roles. In such a case the lady has to take decisions which would be best suited to the situation (Pareek, 1997).

- **Hypothesis 2:** The inter-role distance stress would be low if the person has balanced time perspective i.e. the temporal orientation moderates the relationship.

Personal inadequacy makes the person feel that he does not have enough knowledge, skills or training to undertake a role effectively, or that he has not had time to prepare for the assigned role, which will lead to stress. Persons who are assigned new roles without adequate preparation or orientation are likely to experience personal inadequacy (Pareek, 1997). Present fatalistic reflects hopeless, helpless attitude towards life and future; it is positively related with depression, aggression and anxiety (Zimbardo & Boyd, 1999). Similarly for past negative, it is also attributed to same characteristics. So, if people are high on past negative or present fatalistic, their self analysis would be negative.

- **Hypothesis 3:** Present fatalistic and past negative both will be positively related with personal inadequacy.

Role boundedness makes the individual feel highly obligated to the expectations of the significant role senders, and he sacrifices his own interests, preferences, values, comforts, etc.; he may be said to be role bounded (Pareek, 1997). Role boundedness behavior is completely opposite to the behavioral characteristics of the present-hedonistic person, as he values hedonistic pleasures, enjoys high intensity activities, and seeks thrills and new sensations.

- **Hypothesis 4:** Role boundedness would be negatively related with present hedonistic.

METHOD

Participants: The data were collected through random sampling in a B-School, India, to identify the general stress level between people with balanced time perspective and people with high orientation towards a particular time perspective. To calculate balanced time perspective, low, moderate and high time perspective (TP) scores were obtained by dividing TP scores for each of the five factors as close as possible to the 33rd and 66th percentile, resulting in three groups. According to Zimbardo's theory, low scores on past negative (PN) and present fatalistc (PF), moderate to high on past positive (PP), futuristic (F) and present hedonistic (PH) constitute a balanced time perspective (BTP) person.

Measures: We administered the surveys by taking a random sample from MBA students. To find the time perspective, we used Zimbardo's Time Perspective Inventory (ZTPI) and to calculate role stress the General Role Stress (GRS) Scale from Udai Pareek's Training Instruments in HRD & OD, 2nd edition.

ZTPI: We used Zimbardo and Boyd (1999) time perspective inventory scale in order to find out the people with balanced time perspective. It is a five-point likert scale, with responses ranging from very uncharacteristic of you to very characteristic of you in nature. The scale has been analyzed for reliability and validity. It helps us find out whether the person is futuristic, grounded in present or past as per the time perspective dimensions discussed.

GRS Scale: It helps us to identify people under self-role distance (SRD), inter-role distance (IRD) and person inadequacy (PI) stress (Pareek, 1997). Also if people feel highly obligated to the expectations of the significant role senders, and they sacrifice their own interests, preferences, values, comforts, etc., they may be said to be role bounded (RB). Personal inadequacy is where the respondents feel that they do not have enough knowledge, skill or training to undertake a role effectively, or that they have not had time to prepare for the assigned role, they may experience stress. Similarly, self-role distance indicates conflict between self-concept and the expectations from the role, as perceived by the respondent. Finally, inter-role conflict is where people may experience a conflict between their tendency to live as a person and as a role occupant. It is also measured on a five point likert scale where responses ranges from you never feel this way to you always feel this way. The ratings given to these items are added to give a score that ranges from 0-48 i.e. an index of GRS (Pareek, 1997).

Factor Analysis:

SPSS statistical package (version 13.0) was used to analyze the data. Principal component factor analysis was used to get more variance explained from the derived factors with orthogonal design. Also, varimax rotation under orthogonal design was run to spread the total variance and to get uncorrelated factors of all the reasons and features of the time perspective factor structure with eigen values greater than 1. Moreover, while running the factor analysis the following criteria were kept in mind: (Hair et al., 1995):

a. No loading less than 0.50 on a factor.
b. Reliability of the factor is not less than 0.50.

The last criteria 'b' was used to arrive at a stable and conceptually sound factor structure. It has been pointed out that factors not having sufficient items loading on them should be looked at critically (Hair et al., 1995; Pett, Nancy, & Sullivan, 2003). It makes sense theoretically to exclude some items from factor analysis that explain least variance with disparate loading on the derived factor and use it as an independent factor for further analysis.

Multiple Regression analysis:

A multiple regression analysis was used to check the explanatory power of independent variables i.e. time perspectives upon the dependent variable i.e. stress discussed above. The following equation is tested through regression analysis:
Stress = f (Time perspective factors)

Data Analysis

The results of factor analysis show that there are five underlying factors existing on Zimbardo Time Perspective Inventory (Zimbardo et al., 1999).
Table 1 shows the KMO and Bartlett's test result. For KMO, thumb rule is that it should be greater than 0.5 and in our case it is 0.52. The Bartlett's test of sphericity is significant at 1% level of significance.

Table 1: KMO and Bartlett's Test Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	000.52
Bartlett's Test of Sphericity	
Approx Chi-Square	724.34
Df	406
Sig.	000.00

Items are assessed on a 5-point Likert scale according to "how characteristic" each statement is of the respondent. After checking the factor loadings on each variable from the pilot study we conclude that future time perspective (FTP) questions include: "I believe that a person's day should be planned ahead each morning"; "Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play"; "I am able to resist temptations when I know that there is work to be done." The past positive perspective (PP) scale has following statements: "On balance, there is much better to recall than bad in my past"; "It gives me pleasure to think about my past." Present hedonistic category included the following statements: "I try to live my life as fully as possible, one day at a time"; "I make decisions on the spur of the moment"; "It is important to put excitement in my life"; "I take risks to put excitement in my life"; "I find myself getting swept up in the excitement of the moment.". For past negative, we have following statements which had high factor loadings: "Painful past

experiences keep being replayed in my mind"; "The past has too many unpleasant memories that I prefer not to think about"; "I think about the bad things that have happened to me in the past." Finally, present fatalistic is explained by following statements "I like my close relationships to be passionate"; "Things rarely work out as I expected."

Initial results show that 78% of the total variance is explained by the above-mentioned factors.

The reliability of the factors has also been checked and for each factor Cronbach's alpha value is greater than .5

Table 2: Multiple Regression Analysis Results

Dependent variable→ Independent variable↓	SRD	IRD	RB	PI
Intercept	0.10	0.91	1.95*	0.42
PH	0.16	-0.25**	-0.22**	0.02
PN	0.46†	0.21*	0.25†	0.30†
PF	0.29†	0.08	-0.09	0.35†
F	-0.08	0.11	0.43†	-0.07
PP	-0.01	0.27*	-0.01	0.08
Adjusted R-square	0.38	0.14	0.34	0.29
F-stat value	8.23†	3.99†	7.18†	5.78†

Note:
† denotes 10% level of significance
* denotes 5% level of significance
** denotes 1% level of significance

As we can see in Table 2, the result for self role distance (SRD) indicates that past negative (PN) and present fatalistic (PF) have significant impact on SRD at 1% level of significance. The result for inter-role distance (IRD) shows that PN significantly impacts IRD but at 5% level of significance and PH significantly impacts at 10 % level of significance. For role boundedness (RB), two variables PN and F significantly impact RB at 1% level of significance and PH impacts at 10 % level of significance. Finally for the personal inadequacy (PI), the results indicate PN and PF have significant impact on PI at 1% level of significance.

DISCUSSION

The factor analysis results show that there exist five factors namely past negative (PN), present fatalistc (PF), past positive (PP), futuristic (F), and present hedonistic (PH). The factor analysis results correspond to the Zimbardo time perspective theory.

Further, to prove/verify the hypotheses, multiple regression analysis was used. The results support our hypothesis that role boundedness has a negative relation with present hedonistic i.e. if present hedonistic will increase by one unit then role boundedness will decrease by 0.22 units which supports Hypothesis 4.

Also, a person with high present fatalistic and high past negative would feel personally inadequate; results also show 1% significance for both, where personal inadequacy will change by 0.30 units with one unit change in past negative and personal inadequacy will change by 0.35 units with one unit change in present fatalistic. This supports our Hypothesis 3.

For Hypothesis 1 and Hypothesis 2, we needed to segregate the data of balanced time perspective for which we need large sample size, but as of now the results show that PN and PF have positive impact on self role distance. And PN and PP have positive impact on IRD but PH has negative impact on IRD, which we need to further analyze with the balance time perspective data to reach a conclusion.

CONCLUSION

To our knowledge, although past research has linked time perspective with stressful behavior, there has been no published research investigating the connection between stress and balanced time perspective. Moreover, there has been no published research examining how self-monitoring of time perspective might moderate the effect on stress. Our study thus adds to time personality-stress research by exploring the relationship between stress and time perspectives. When people consider that time must bring benefit to them, they will choose activity which will reduce their stress level and avoid decisions which would lead to stress.

In a practical scenario the results of this research suggest that time perspective has effect on individuals' stress level. We can help people to balance their time perspective so that they can reduce their stress level and lead a harmonious life. Less stress also implies high productivity. Encouraging employees to engage in balanced time perspective will improve performance as stress level can be reduced.

In the future studies we can test the first two hypotheses with greater sample size. In this study we did find that there is a relationship but we could not prove the hypothesis due to the lack of appropriate sample size. Also, we used only exploratory factory analysis; someone can validate the study by using confirmatory factor analysis too.

On the whole, temporal orientation is a multidimensional concept that describes the perception of time among individuals. Time perception is structured by life experiences and can vary depending upon the particular context involved. Whether a person is past-, present- or future-oriented has been shown to influence his/her approach and reaction to stress. Because the management of stress is based on achieving some future state, stress provides a context in which an individual's time perspective may be particularly influential (Brown & Segal, 2008; Keough et al., 1999).

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Book Review
"THE HR SCORECARD: Linking People, Strategy, and Performance"
By Brian E. Becker, Mark A. Huselid, Dave Ulrich
Harvard Business School Press, Boston, 2001, 235 pages, ISBN: 1578511364

Reviewed by Sweta Singh, Great Lakes Institute of Management

Human capital is the driving force behind the success of any organization in this modern knowledge-driven economy. So, as a source of competitive advantage for today's organizations, the human resource strategies are a key differentiator. The investments that are made in the name of HR development are increasingly being held accountable to justify. In this context, the book by Becker, Huselid and Ulrich has come out with an innovative concept called HR Scorecard that highlights the role of HR as a strategic asset. The authors provide a measurement system which links HR to firm performance. Building on the concept of balanced scorecard of Kaplan and Norton, the authors here have elaborated the idea of HR scorecard with the objective of highlighting HR's role in a firm's performance. The authors on the basis of a decade long study of HR aspects of almost 3000 firms concluded that the firms with more effective HR management systems consistently outperform their competitors.

"HR as a strategic partner—the measurement challenge" argues the case of HR in business organization and how we can ensure that HR can measure or demonstrate how exactly they create value for their organization. Firms having high performance work systems (HPWS) are much more likely to have developed a comprehensive, systemic HR management system. A strategic HR role is the firm's "HR architecture", which is composed of the function, the system and employee behaviors. The role of HR as an asset can be visible only when aligned with the organization's strategy implementation system. Further, authors introduce a seven-step model for implementing HR's strategic role. This is the major contribution of this book. But the model has certain flaws. The model involves steps to develop various measures to be adopted for measuring HR's strategic influence. But evaluating HR scorecard is also necessary, though the authors seem to be less interested in that. One cannot assume its measures and relationships to stay same always; so HR scorecard needs to be evaluated.

There are some essential architectural elements that are required to be included in a HR scorecard besides highlighting its benefits. The elements are High Performance Work System (HPWS), HR system alignment, HR deliverables and HR efficiency measure. The first two are called leading indicators, and the latter two are the lagging indicators for HR's performance. HPWS focuses on individual change, but an organization can be high performing itself. How can this scorecard be related to organizational change? Again strategy implementation requires organizational change and not merely individuals' change within the system.

The HR deliverables are again of two categories: performance drivers which are core, people related capabilities and enablers which reinforce the performance drivers. The final component is the HR efficiency measure (also called doables).

The next part of the book, explains cost benefit analysis for HR interventions. They introduce a three-step process for determining ROI. Firms should identify potential costs, then identify potential benefits and finally calculate the ROI of the program with an appropriate index. Here authors could have included few of the indexes, rather than leaving the audience to refer to a financial management book.

The next section "the principles of good measurement" is devoted to how proper measurement can be done. To explain how firms formulated ways to measure casual linkages, the authors have given live examples of GTE and Sears. This enables reader to align the concept with practice.

There are two dimensions of alignment that the HR architecture must attain, to become a strategic asset. They provide two type of alignment—internal and external. Internal alignment is the degree to which HR is perceived to be valued strategic partner and external alignment is the degree to which HR provides HR deliverables. This implies that HR should endeavor to be valued and should measure its effort. HR can further focus on enabling other functions in the firm to be of value. Furthermore, based on a multidimensional scaling technique called Galileo, a metric is developed called the Systems Alignment Map (SAM). It provides a visual summary of how the human dimension of the organization can be aligned to the firm's larger strategic goals and the HR system.

In addition to the five dimensions prescribed by the Michigan studies including knowledge of business, personal credibility, delivery of HR practices, management of change and culture, new competency in strategic HR performance management is needed for modern day professional needs. In the final part of the book, guidelines for implementing an HR scorecard are provided.

To illustrate various concepts to make understanding of the concepts and its applicability easier, they have used real life cases of companies. The authors use the example of Sears and GTE Corporation (who managed to achieve great transformations by aligning their HR with the larger organizations strategy) throughout the book.

The authors of this unique book deserve all credit for coming up with an innovative measure for linking people, strategy and performance. It is a thought provoking guide for HR professionals providing insight into an area of high significance in the modern economy. But at times it seemed that HR focuses on merely proving its own worth rather than driving organization-wide strategy implementation. They could have better highlighted the cause of HR by focusing on contribution made to entire organization, and not just only to itself.

Book Review

Don Sull (2009). The Upside of Turbulence: Seizing Opportunities in an Uncertain World (New York: Harper Collins Publishers), pp. 276, U.S. $ 27.99, (h/b), ISBN 978-0-06-177115-6.

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What is turbulence? What are turbulent markets? What must firms do to seize opportunities in these markets? And, most importantly: What are the strategic approaches required to do so? These then are the four questions that Don Sull sets out to address in this book. Sull was educated at Harvard University and has served as a McKinsey consultant. He is presently a faculty at the London Business School, where he is in charge of executive education. This book is an attempt to take forward a theme that Sull has developed in his previous books on strategy, where the main focus was on the notion of "active inertia" (which forces firms to do "more of the same" rather than innovate in the wake of tumultuous changes in the business environment). Sull's early set of strategic insights were developed while serving as a McKinsey consultant with U.S. Steel. He was deeply influenced by the sad fate of the tyre companies in Akron, Ohio which resulted from not being able to sufficiently anticipate the role that radial technology would play in the manufacture of tyres when they were first introduced by Michelin. Sull therefore can't help but ask these questions: What is it that makes it possible for some firms to respond dynamically to challenges and emerge as winners? And, even more importantly: Why are most stuck with active inertia? In order to answer these questions, Sull developed a research methodology of working with "matched pairs" of companies in a given industry comprising both the emerging and developed markets. The pair of companies that he invokes in his methodology would include both a successful company and a less successful company. The idea was to isolate those attributes of companies that did well, and ask to what extent these attributes were specific to a context, and to what extent they could be extrapolated into a general theory. The key terms in Sull's approach to strategy include "turbulence, dynamism, complexity, and competition". This book, then, is an attempt to understand the relationship between these terms, and formalize the findings into a general strategy which firms can apply, if necessary, in specific contexts.

There are eleven chapters in the book - the first few recapitulate Sull's previous work that culminated in the notion of active inertia, and what firms must do to re-invent themselves. The main difference here is that Sull not only invokes the notion of "mental maps" that are built into strategic frameworks, but also poses the question of how certain we can be of the validity of these frameworks given the exponential increase in the levels of change and turbulence in the contemporary world. In order to think-through this problem, Sull invokes the work of Karl Popper, the renowned philosopher of science, who introduced the analytic difference between "verification" and "falsification" in testing the validity of scientific theories. Popper's contention was that no number of verifications will prove the validity of a theory decisively. It is therefore more important to attempt to falsify rather than attempt to verify a theory; and, furthermore, regard all theories as providing us at best with "provisional knowledge" of the empirical phenomena that it seeks to describe. The takeaway from Popper then for entrepreneurs is that they should conduct strategic experiments in order to let the flaws, if any, in their frameworks, i.e., "business plans" emerge as early as possible and then make course corrections quickly. It is, needless to say, not possible to verify the validity of a business plan; it is at best possible to falsify it in terms of what will work or will not work in specific contexts. Sull therefore sets out his suggestions on how firms must experiment with the presuppositions and propositional structure of their business plans before moving on to draw lessons from the work of Thomas Kuhn, who also worked in the philosophy of science but disagreed with Popper on the nature of scientific work. Kuhn, for instance, introduced the important difference

between "normal science" (which is the work that scientists do every day without reflecting upon their epistemological axioms or presuppositions), and the problem of "paradigm shifts", which is related to the changes that come to pass when new frameworks are invoked to explain empirical phenomena. So it is not as though scientific theories are falsified at once since those who are committed to a framework will look for alternative explanations only when an "anomaly" or a series of anomalies emerge(s). When scientists decide to work within a theoretical framework, it is analogous to making a long-term investment; this is why falsification in the Popperian sense, even when epistemologically possible, does not lead to instantaneous change, but requires the emergence of several anomalies to usher in a new framework. It takes the scientific community a lot of time to change their patterns of theoretical investments given the residues of the older paradigm. So, like firms that work with obsolete strategic approaches, scientific communities are also subject to the problem of active inertia given that a framework is often a collection of inter-connected theories rather than a single theory which can always be either decisively verified or falsified. It is therefore important to be alert to the uncertainty that will be introduced in both scientific theory and management theory when anomalies emerge.

Scientists therefore have to be proactive in thinking-through the need to construct theories that actually represent what constitutes the structure of the physical world and, analogously, that of socio-economic phenomena without getting bogged down by legacy systems in place. The significance of invoking Popper is also important for Sull because of the problem of epistemological and ontological commitments in the context of scientific theories. For Popper, the essence of the scientific mind was "under-commitment"; for Kuhn, it was "over-commitment". Sull however argues that while a commitment to a strategic framework is inevitable, it is important to *optimize commitments effectively* rather than swing between the problems of too little and too much. It is easy to misunderstand Sull's argument since most readers may be unable to distinguish between commitment to frameworks in general and a specific framework in particular. What Sull is advocating is the notion of commitment in the structural sense of the term—what strategic framework an executive commits to will vary depending on the needs and requirements of his particular firm and the environments in which it operates. But, irrespective of which framework is invoked, the firm must spend a certain amount of effort, money, resources, and time to make it work. The question however that a firm must ask is this: What is the level of commitment that is optimal now? And, how will the *optimization of commitment* make it possible to navigate the socio-economic turbulence in the world in which we live? Sull therefore sets out the symptoms of active inertia along with advice to CEOs on what they must do if they find that they have picked up some of these symptoms. He also discusses some "common anomalies" and "anomaly pitfalls", and the learning from the study of such anomalies for the strategic frameworks in place. What this form of learning requires then is a kind of *epistemological vigilance* and the willingness to calibrate the levels of commitment to a scientific or strategic framework or a particular course of action according to the needs of the situation. It is much more cost-effective to make small mistakes quickly in order to generate a much-needed knowledge of the world that can serve as a guide to further action rather than get stuck within frameworks that are not responsive to the increasing levels of "turbulence, dynamism, complexity, and competition". So while mental maps and frameworks are necessary, they are not sufficient; since ultimately decision-makers must take responsibility for what they do and how they lead.

What then is required to ensure that strategic frameworks retain a sense of dynamism without lapsing into something static? The answer is to develop a sense of "agility" both in terms of leadership style and in terms of the firm's ability to respond to fast moving situations. Sull explains clearly what he means by agility by invoking the three types in which it is usually manifest. This is a general notion since it encompasses a range of domains and is not specific to businesses as such. The case study that accompanies the invocation of agility is itself, I would

think, an example of theoretical agility on the part of Sull. The study pertains to the formalization of aerial combat by John Boyd, a fighter pilot and flight instructor for the U.S. Air Force, who wrote a riveting study of aerial combat in 150 pages. This manual, which is titled Aerial Attack Study, has become a mandatory source for training fighter pilots. It was written in response to the sense of wonder that Boyd experienced in trying to answer this simple question: How are we to explain the extraordinary hit-rate of the F-86 Sabre, which was the main strike aircraft of the U.S. Air Force over the Russian MiG which had much superior features and technology? The answer, needless to say, is linked to the problem of agility. Boyd identified three crucial attributes, which gave the F-86 a competitive advantage; these included a "bubble canopy", "full hydraulic controls", and "greater autonomy" in how the plane will fly. And, most importantly, the agility required for maximizing these opportunities. What these fighter pilots did furthermore was not to avoid turbulence; instead they actively sought out turbulence in order to convert them into opportunities. Boyd's formalization of the basic modalities of aerial combat then becomes the prototype of agility, for Sull, in the domain of strategic theory. Sull is also interested in the learnings from the approaches that characterize the U.S. Marine Corps as set out by Albert Gray in a text titled Warfighting, which is also preoccupied with the strategic agility required to negotiate turbulence. Here the assumption is that battle plans usually don't survive contact with the enemy; and therefore, is important to differentiate between a plan that is easy to implement in peace time and a strategic "plunge" that is more appropriate during combat. The learning for entrepreneurs here is that in turbulent environments they cannot anticipate all possible contingencies and must seek resort to strategic agility as the way forward. They must learn the modalities of reconnaissance and probes along with the maneuvers required to "pass surfaces and swarm gaps" in order to "finish strong". The learning from the notion of taking anomalies and agility seriously is not reducible to speed, but is linked to the challenges of effective timing.

Sull, needless to say, provides a description of the three forms of agility by differentiating between "operational agility", "portfolio agility", and "strategic agility". What this basically means is that in order to keep the "mental map" fluid and not static, the decision-maker must be willing to learn from any or as many sources as possible without making a fetish of the source. Each of these forms of agility is accompanied by advice on what a firm must do in each of these contexts along with the names of the firms that have in fact succeeded in doing so. Sull's advice also takes note of the locus in the firm's hierarchy from which an individual might act depending on whether he is a leader, follower, or a member. Agility then is not just a requirement for the CEO, but for all the members of the firm. What after all is the point of having an agile general if the officers and soldiers are not willing to be agile in battle? Boyd, as Sull points out, is only continuing with the tradition that recognizes the need for agility in the literature of strategic studies and strategic management (as represented in the works and strategic approaches of "Sun Tzu, Napoleon, and the architects of the German blitzkrieg"). Boyd however was not just a military philosopher, but also somebody who took the work of theorists like Karl Popper and W. Edward Deming seriously. What Popper and Deming (who is synonymous with the Quality movement) emphasized was the need to recognize the cognitive import of learning through "iterative loops"; which, in the case of Boyd, was termed the "OODA Loop". What this acronym stands for is Observe, Orient, Decide, and Act. Sull's contribution then is to formalize the "agility loop" as a further development on Popper's "experimental loop", the "Deming cycle", and "Boyd's OODA loop". He also builds upon the notion of "co-designing" with customers. This is a strategy that is used not only in the iterative approach to new product development, but also in the notion of "stage investment" that is deployed by venture capitalists to fund new ventures (depending on which "round" of the funding or development process that a firm or an entrepreneur finds himself in).

The essence of the effective leader in turbulent economies then is not only agility, but an optimal commitment to building agile organizations. But, needless to say, while agility is necessary, it is not sufficient. Sull therefore introduces the notion of strategic "absorption" by invoking an interesting case study of the clash between Muhammad Ali and George Foreman in 1974 at Kinshasa. These renowned boxers used different strategies. Ali deployed agility; Foreman used absorption. While it is not possible to win all battles using either of these strategies, it is nonetheless important for strategists to list the learnings from such strategic encounters. What Sull sets out to do then is to demarcate the circumstances when agility is required and those when absorption is needed. He then sets out to "deconstruct" this opposition and creates a new strategic approach that is neither fully about agility nor about absorption, but about "agile absorption". This new approach will fortify a firm's approach to strategy by incorporating the approaches of both Ali and Foreman in a deadly combination that would redefine these approaches as loci which either Ali or Foreman can occupy in response to the competitive dynamics that characterize turbulent or emerging economies. Sull comes to this conclusion after listing separately the pros and cons of having a strategic approach that is characterized by only agility or absorption, and argues that the ability to switch strategic positions effectively between these loci is what will generate competitive advantage for firms in the years to come. Or, as Sull puts it, in his concluding line, "I hope that the insights in this book help managers throughout the world balance agility with absorption to seize the upside of turbulence".