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Contents

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The Chairman speaks ...

Evidently India is emerging as an economic power. The economy is on sustainable growth path. The trend is expected to continue notwithstanding the myriad of problems. However, these problems need to be properly managed in order to sustain the momentum. It calls for professional management skill of the highest order.

In any entrepreneurial venture risk is an unavoidable factor. Every business has its own risk factors and it is facing that risk every day. That is why risk management has become a core business education process now. Good risk management process is an essential part of any modern business. Moreover, risk is an inevitable consequence of change and so it may not be possible for any organization that is aiming growth to totally eliminate risk. The best possible approach will be to manage the risks in such a way to maximize opportunities and to minimize damages. And any intelligent organization would know how to convert this threat to an opportunity.

It is in this context that this issue of SCMS Journal of Indian Management invites your attention to risk management through the two lead articles.

The remaining articles and features have been carefully selected to be of contemporary importance. I hope that our readers will find these contributions useful.

Dr.G.P.C.NAYAR
Chairman, SCMS Group of Educational Institutions

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Editorial

God manages the cosmos.

Man manages all in the cosmos as he wishes.

He manages home and its inmates as the supreme head.

He manages a firm or a factory as its chief to lead

He manages the state, as the 'chosen ruler' on top.

To manage anything, what one needs is knowledge? Its resource may be finance, marketing, health or wealth. It's in a three-tier in the experiential level, that the resource gets altered. Knowledge is churned and churned in the mind: The managerial broodings and meditations lead to the thought, what one thinks and thinks before he manages: The raw materials are churned out into something different here, into thought, the latent state of skill in managing.

The skill is manifest in the secondary stage when the thought gets changed into the word, the word to manage; it flows out of the tongue / pen.

Then to the deeds, to the tertiary level: the thought gets changed into many manifestations as steps and deeds. All these are pointers to the fact that management is skill in thought, word and deed. All these join together to form action (managerial). The action exists in language 'space' and 'time.'

Management is taught in business schools. Mostly knowledge is the subject taught in management schools thereby the resource material for management 'thought' (knowledge) is only discussed. How to use this resource in language — in thought, word and deed — shall be handled in a business school. How far this is done invites questions.

To generate thought, word and deed, theories will help. The West has eclipsed the East in bringing management 'thoughts' into the classroom. Many of the ancient philosophical minds of the orient are yet to see new light. They can still be pristine in the managerial scenario. Not only do they demand some brushing, polishing, refining, and culturing, but detailed exploration.

Dr.D.Radhakrishnan Nair

Editorial Assistant: Mr.E.V.Johnson

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Director's Message

I have just become a member of the Editorial Advisory Board of ***SCMS Journal of Indian Management.*** It indeed is a privilege to be associated with this world-class management journal.

There is an excellent mixture of articles included in this issue of the journal. These articles touch various contemporary management issues in a very lucid and effective manner. The global touch cannot be missed at all while previewing the content of the journal this time. The quality of presentation and packaging is very impressive.

The "improvement function" is a constant endeavor. In that spirit, we are constantly on the look out for innovative articles and scholarly work to be included in our journal. We are constantly striving to make the journal a real focal point for development of management thoughts and ideas in this part of the world.

I also take this opportunity to express our sincere gratitude and appreciation to all the stake-holders in this endeavor, including but not limited to, the authors, the subscribers and readers, the entire editorial and production workforce, and of course, the Chairman of SCMS for his untiring support.

Dr. Mangi L. Agarwal
Director, SCMS.

Supply Chain Risk Management: A Framework

Mohd Nishat Faisal

Supply chains have emerged as a dominant vehicle to beat the competition. This is because of the realization by the organizations that to excel in the market place they need to leverage their partners' capabilities. But along with their skills, partners also bring new form of risks. Supply chain risk management involves understanding risk from the perspective of a supply chain and to develop strategies to mitigate them. This paper has tried to develop an understanding of risk management in a supply chain by classifying various risks along with the understanding of the barriers to risk minimization. It also proposes a framework to manage risk effectively. This would help supply chain managers to develop a holistic approach to manage risks in a supply chain.

Companies have relentlessly restructured and reengineered to increase organizational effectiveness and satisfy key customers, but in their pursuit for excellence, managers have realized that their companies often lack the resources and competencies needed to achieve competitive success. This realization has led them to look beyond their companies' organizational boundaries to evaluate how the resources of suppliers and customers can be used to create value so as to beat the competition in the marketplace. Efforts to align objectives and integrate resources across company boundaries to deliver greater value are known as supply chain management (SCM) initiatives. A supply chain consists of three primary flows (Speckman and Davis, 2004):

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§ Physical flow.

§ Information flow.

§ Money flow

Each of them is essential for the supply chain to perform its objectives in an efficient and effective manner and disruption in any one of them would defeat the purpose of the supply chain. Generally organizations do consider and analyse the risks to their physical flow and money flow but the very important aspect of information flow is neglected.

Examples like Dell, ZARA, Seven-Eleven, and Wal Mart show that to satisfy customers inventory has to be replaced by information. This approach has twin advantages, one it reduces the blocked capital that goes in maintaining inventories and second it minimizes the obsolescence cost, which ultimately eats into profits margins.

Still supply chain risk management is a neglected issue. Some of the possible reasons are

1. Lack of strategic vision about various risks that could impact the supply chain.
2. Focus by individual partners to minimize risks at their end.
3. Unfamiliarity with tools to mitigate supply chain risks

This is corroborated by two studies, first according to a study conducted by Computer Sciences Corporation in 2003, 43 per cent of 142 companies, ranging from consumer goods to healthcare, reported that their supply chains are vulnerable to disruptions, and 55 per cent of these companies have no documented contingency plans (Poireir and Quinn, 2003). Next, according to another survey conducted by CFO Research Services, 38 per cent of 247 companies acknowledged that they have too much unmanaged supply chain risks (Eskew, 2004). Some of the current business trends that have contributed to risks susceptibility in supply chains are:

- Global nature of supply chains,
- Increased dependence on outsourcing,
- Fast changing customer preferences,
- Competitive advantage based on time to market,
- Linkages with fuel prices, and
- Excessive dependence on IT solutions.

Supply Chain Risks-The Classification

Supply chain risks can take many forms (Harland *et al.*, 2003; Morgan, 2004) and so lack of knowledge about various type of risk becomes an impediment in risk minimization.

Researchers like Chopra and Sodhi (2004); Finch (2004); Norrman and Jansson (2004) have classified various supply chain risks as:

Disruptions - These are rare but very damaging like natural disasters or more recently terrorism related. Although it is impossible to eliminate such risks but organizations can certainly develop contingency plans to minimize the impacts of such risks.

Delays - Delays result because of poor quality or inflexibility at supplier end or excessive inspection and changing mode of transportation. If any one link of a supply chain is made to wait then the whole purpose of the supply chain management gets defeated.

System risk - Today's highly networked environment has made the risk of system failure an important issue for supply chains. Multiple sources of these risks include virus, worms, hackers and more importantly internal employee frauds.

Forecast risks - These risks can cause havoc as product life cycles have shrunk and customers have plenty of choices in the market. Any one working in the domain of supply chain management must be aware of the "bullwhip effect" which is the result of non availability of correct information to all the links of the supply chain.

Intellectual Property Risks - Intellectual property decides about a company's survival, as the investments to create IP are substantial. The risk is that as companies are focussing more on their core competencies and outsourcing other activities there are chances of intellectual property information being passed to competitors as there may be suppliers working for competing organizations.

Corporate Social Responsibility risks - In the wake of customers being more aware about the environmental, legal issues organizations are becoming more serious to not only becoming more socially responsible but also forcing their suppliers to stick to the standards and regulations. The reason for this concern is because organizations are outsourcing from many locations around the globe, it may happen that violations of human rights or environmental degradation by the suppliers may lead to a negative publicity and loss of customer goodwill.

Chaos risks - These risks are the result of over-reactions, unnecessary interventions, second-guessing, mistrust, and distorted information throughout a supply chain (Christopher and Lee, 2004). The well-known "bullwhip" effect, which describes increasing fluctuations of order patterns from downstream to upstream supply chains, is an example of such chaos.

Managing Supply Chain Risks through Agility

Agility concept popularised in early nineties by a group of scholars at Iaccoca Institute of Lehigh University in USA, has emerged as an important competitive weapon for companies operating in today's volatile markets. Agility means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile market place (Mason-Jones *et al.*, 2000). It is a business-wide capability that embraces organisational structures, information systems, logistics processes and in particular, mindsets (Christopher and Towill, 2001). As the effectiveness of an organization's response to rapidly changing market conditions will be largely determined by the capabilities of trading partners, the concept of agility has also been extended beyond the traditional boundaries of the individual organization to encompass the operations of the supply chain within which the organization operates (Power *et al.*, 2001). The essence of an agile supply chain is its ability to respond quickly and efficiently to a volatile marketplace. Companies like GE lighting, HP, ZARA reduced uncertainties and vulnerabilities for themselves and their supply chain partners by transforming their supply chains into more agile entities (Prater *et al*, 2001). According to researchers (Yusuf *et al.*, 2004; Christopher, 2000) the four distinguishing characteristics of an agile supply chain are:

§ Market responsiveness- Understanding and capturing quickly the need of the customers would define the competitive position of the organizations, which requires that the whole supply chain can quickly adapt to the changing market requirements.

§ Network Integration- Agile supply chains take advantage of the capabilities of its partners in fulfilling the customer requirements.

§ Process Integration- It requires collaborative working between buyers and suppliers, joint product development, common systems, and shared information.

§ Virtual Integration- Leveraging latest IT tools supply chains are now becoming virtual and information based rather than the traditional inventory based.

The new "paradigm" for agile competition concerns the ability to respond to unexpected changes, to survive unprecedented threats from the business environment, and to exploit changes as new business opportunities (Kidd, 1995) which require that agile thinking needs to grow to accommodate the full gamut of supply chain activities (Kasarda and Rondinelli, 1998). Creating an agile supply clearly requires a number of significant changes to the status quo, which necessitates supply chain managers, to act as change managers with not just managing change within the organization, but managing change in the way that relationships between organizations are structured (Christopher and Towill, 2001).

Framework to manage Risks in a Supply Chain

Risk management processes include an understanding of the risks and develop strategies to minimize their impact. The various steps of the proposed framework to manage risks in a supply chain are described in brief.

Analyse Risks from a Supply Chain Perspective

Generally the organizations plan for risks that impact their operations but tend to ignore those risks that may impact their partners. To assess supply chain risk exposures, the company must identify not only direct risks to its operations, but also the potential causes or sources of those risks at every significant link along the supply chain. Improved understanding about risks in a supply chain helps to make better decisions and decreases the risks of both a single organization and a whole network. One important tool is risk mapping, i.e. using a structured approach for mapping risk sources and thereby understanding their potential consequences. Simulation and Analytics approaches that include techniques like the "fault tree analysis" (FTA), "What If" scenarios; "event tree analysis" (ETA) should be used to carry out analysis of the factors and causes contributing to supply chain disruptions.

Strategic Supply Chain Risk Planning

Strategic planning provides a framework for proactive decision making to assess continuously what could go wrong, determine which risks are important to deal with, and implement strategies to deal with those risks. Although at the strategic level supply chain risk management is relatively new but slowly organizations are learning their importance to meet the expectations of the marketplace. In the long run companies that would be able to survive and thrive in the turbulent marketplace would be those that can identify and develop contingency plans for the various risks that exist internally and externally to their supply chains.

Regularly Monitor Current and Potential

Suppliers for possible Supply Chain Risks

Ultimate supply chain success depends heavily on the performance of all links in the network. This requires monitoring and assessment of the supplier on dimensions like financial stability, quality, price competitiveness, and location risks. Also critical suppliers should be required to have contingency plans in place for potential supply chain disruptions.

Improve Visibility and Control

It is necessary that all the partners in a supply chain work on the same information, ideally, which should be available in real time. Apart from this all the partners should have the knowledge about basic figures like order status, pipeline inventory, actual demand and forecasts etc. The best strategy to improve visibility is to facilitate the process of information sharing among the partners. This would reduce the uncertainties and consequently improve the overall performance of the supply chain. Along with improving the visibility, supply chain managers should develop the capability to react to sudden fluctuations in demand. Because of its reach and common standards, Internet has emerged as a dominant vehicle to carry and share information among the partners in a supply chain.

Support to Partners

When we move across from Tier I to Tier II to Tier III levels in a supply chain it would be visible that the suppliers are usually small and medium enterprises. These companies generally have the objectives of maximizing their returns and so they have little strategic planning regarding risks. So large organizations should provide support in educating them about the risks and strategies to minimize them. Joint meetings, workshops are to be conducted on regular basis to facilitate the suppliers understand their responsibilities in managing risks in the supply chain.

Understand the Trade-offs of Various Risk

Mitigation Strategies

Supply chain risk can be managed by various strategies like having redundant suppliers, safety stock, flexibility and responsiveness. Each of the option has its benefits and similarly downsides. So supply chain managers should have a clear understanding of the trade-offs associated with various options in managing risks. Generally in supply chain managers would use a mix of these strategies to manage risks.

Risk sharing Arrangements

There should be a well-defined arrangement of risks sharing among the partners of the supply chain. This is necessary, as smaller enterprises cannot absorb the risks solely without the support from their partners. Risk sharing arrangements would also facilitate more sharing of information and development of trust among supply chain partners, which is crucial for smooth functioning of the supply chain.

Barriers to Risk Mitigation in a Supply Chain

Risk management in a supply chain is not an easy task as it involves organizations which may have conflicting objectives and whose knowledge about risks is limited to the individual company. Factors like adversarial relationships which are based on the principle of cost minimization, lack of trust among supply chain members, misaligned incentives, information distortion, and low priority to risk management have emerged as important barriers to risk mitigation in a supply chain (Sinha *et al.*, 2004; Lee, 2004; Finch, 2004)

§ Lack of trust among Supply chain members: If partners do not trust one another, they will not share sensitive information, there would be no clear arrangement for revenue sharing and so there would be no motivation to work for a common purpose.

§ Adversarial competitive relationships: These types of relationships were found in traditional supply chain management. The primary goal of the traditional adversarial approach is to minimize the price of purchased goods and services (Faisal *et al.*, 2004). Although research in supply chain management strongly recommends long-term collaborative relationships with the suppliers, today many organizations are opting for low cost destinations like China, Taiwan with the single purpose of minimizing the cost.

§ Misaligned Incentives: Misaligned incentives are often the cause of excess inventory, stock-outs, incorrect forecasts, inadequate sales efforts, and even poor customer service (Narayanan and Raman, 2004). All this adds to the overall risk susceptibility of the supply chain.

§ Information Distortion: Causes of information distortion include promotions and incentives that lead to forward buying; batching of purchases, which leads to higher volatility in orders; and lack of knowledge of end-customer demand at upstream locations. The famous "bullwhip effect" is the result of the information distortion as we move from one end to other in the supply chain. Lack of correct information makes the efforts to manage risks in a supply chain a difficult proposition.

§ Low priority to risk management: Generally organizations focus on strategies that would increase their revenues, while neglecting risk issues that require manpower and finances without immediate returns. This is because all the supply chain risks have associated probabilities and if a risk never materialises, it becomes difficult to justify the time spent on risk assessments, contingency plans, and risk management (Zsidisin *et al.*, 2000).

Conclusions

Supply chain risk management is important, as today it is not the individual organizations that compete; rather it is the supply chains. Supply chain risk management is challenging, as the sources of risk to a supply chain are many. Not only do the managers have to manage the risks to their individual organizations they also have to take into account the policies and strategies of their partnering organizations. Further in choosing strategies to manage risks supply chain managers have to weigh different options and should go for the one that suits that risk situation. Also risk management in a supply chain requires continual monitoring, as the environments in which today's supply chains operate are very dynamic. Use of analytics and simulation is highly recommended to model the risk environment in a supply chain. Finally supply chains, which have a proactive approach towards managing risks by transforming themselves into an agile and resilient entity, would ultimately succeed in the marketplace.

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An Insight into Determinants of Financial Risk Tolerance

Kapil Sharma

Risk tolerance forms the yardstick of a person's appetite for risk. It determines construction of an individual's portfolio. Proper assessment and interpretation of risk tolerance is essential. A number of studies have been carried out in developed nations, to find the important factors while predicting financial risk tolerance. Both practitioners and academicians have paid very less attention in this field in India. This study makes an attempt to combine demographic, socioeconomic and psychological factors in Indian environment and identify the factors that contribute towards financial risk tolerance. The study results indicate that risk tolerance was associated with being male, older, married, professionally employed with higher incomes, more educated, more financially knowledgeable, and of increased economic expectations. The achievement of financial success depends on a combination of someone's personality characteristics and socioeconomic background.

Risk has always been around us in different forms. The prime concern of human beings has always been avoidance of the risks that threatened his existence and look forward for security. Today we face risks that are different from the one, which our ancestors faced. There are new types of risks to which we are exposed to. Financial risk is one risk, which our ancestors also faced, but the type of financial risks, their effect on us, and our way of reacting towards them is totally different from our ancestors. Risk tolerance is a measure of an individual's ability to take risk. Some people try to avoid risk whereas some are always ready to take risk. Risk tolerance can be measured with the help of a scale. Risk tolerance levels are indicators of an individual's outlook towards life and his investment behaviour. Risk averters like certainty and low variability, whereas risk seekers prefer ambiguity, uncertainty and high variability. Studies have shown that an individual's propensity to take risk depends upon demographic, socioeconomic and attitudinal factors. Identifying risk tolerance level is an important factor that should be taken into consideration while constructing an individual's portfolio. An individual's risk tolerance level is just not a number that would entail him for a particular investment. Proper assessment and interpretation of risk tolerance is very essential.

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Objective of the Study

- § Determine financial risk tolerance using a combination of demographic socioeconomic and psychological factors.
- § Identify key factors, which determine risk tolerance profile or affect an individual's risk appetite.
- § Find whether there is any relationship between risk tolerance, demographic, socioeconomic and psychological factors.

Review of Literature

Risk tolerance evaluation is a key factor for the purpose of developing portfolios for individuals. It has been observed that practitioners have not paid much attention in this field and it has largely remained an area of interest of academicians only. Very few research papers have appeared from practitioners in practitioner-oriented publications. Lack of understanding about the determinants of risk aversion may be the primary reason for this deficiency. A large number of studies have been conducted in recent years by academicians to understand about decision-making by investors under conditions of risk. Both self-report questionnaires and asset allocation methods have been used by investors to measure investors risk preference.

Snelbecker, Roszkowski and Cutler (1990) observed that both financial advisors and their clients do not realize the importance and complexity of risk tolerance evaluation. Moreover a complete understanding of human behaviour relating to the nature of risk aversion cannot be captured just by conventional methods of research used in the area of finance. It requires joint efforts by both scholars from the field of finance and psychology.

The results of research conducted by investigators such as Carducci and Wong (1998) and Grable and Joo (1997) suggests that the investigation of factors that determine financial risk taking and risk tolerance can be expanded beyond the testing of purely psychological factors. Specifically, demographic, socioeconomic, and attitudinal characteristics need to be examined to determine how these factors influence a person's willingness to take financial risks in "everyday money matters." Carducci and Wong concluded that persons fitting the type A personality trait tended to take greater risks than those more closely aligned with the type B personality profile. They suggested that socioeconomic factors, such as income, might have played a part in explaining their findings. Specifically it was determined that persons identified as type A personalities were likely to maximize their achievements through additional risk taking in the attainment of increased incomes, higher status occupations and increased educational attainment.

Researchers like Godwin (1998); Liao (1994); Chang, Fan & Hanna (1992); investigated the influence of investors risk preferences on their financial behaviours. Grable & Joo (1999); Grable & Lyton (1998); Sung & Hanna (1996) Riley & Chow (1992); explored upon the socio economic and demographic factors and their relation with investors risk preferences.

Mac Crimmon and Wehrung (1986) gave a detailed description of studies relating to risk tolerance from the period 1928 to early 1980s and found that majority of studies that were conducted during this period used students rather than earning individuals as samples. Much of the work concentrated on how people perceive risks as well as rules for choice in risky situations. Very few works concentrated with people who must make risky decisions. Moreover they concluded that imperial findings relating to risk tolerance and gender, age, marital status, occupation, education, income and attitudinal factors were contradictory over the multi-decade span of review. They also observed that the researchers failed to take into account the wide variety of risks and subjectivity of risk tolerance.

Wallach and Kogan (1961); concentrated their study on determining the relationship between risk tolerance and age. In their research they found that individuals of higher age have less appetite for risk as compared to individuals of less age. Their findings got support from both other researchers (Bajtelsmit & Van Derhei, 1997; Bakshi & Chen, 1994; Brown, 1990; Dahlback,1991; Hawley & Fuji,1993-94; McInish, 1982; Morin & Suarez, 1983; Palsson , 1996; Sung & Hanna, 1996a) and practitioners. However some researchers (Grable & Joo, 1997; Grable & Lytton, 1998; Wang & Hanna, 1997), have suggested that it is reasonable to assume that a negative relationship exists between age and risk tolerance.

Slovic (1966); Aigbee & Lafferty (1972); Blume (1978) ; Coet & Mc Dermott(1979); Rubin & Paul, (1979); Hawley & Fugii (1993-94); Xiao & Noring (1994); Sung & Hanna (1996b); Bajtelsmit & Bernasek (1996); Grable & Lytton (1998); in their researches found that women tend to be less risk tolerant than men. Lazzarone (1996); marital status is also one of very important factors that significantly influences risk and return preferences.

Majority of researchers in their research came up with the conclusion that single rather than married individuals tend to be more risk tolerant (Roszkowski, 1998; Roszkowski, Snelbecker & Lemberg, 1993; Sung & Hann, 1996a)

Leonard (1995); self employed individuals, salespersons and people employed in private firms rather than public employers tend to be more risk tolerant. Some researchers have also concluded that individuals employed professionally are more likely to have higher levels of risk tolerance than those employed in non professional occupations (Grey & Gordon (1978); Haliasson & Bertaut (1995); Masters (1989); Quattlebaum (1998). Studies have shown a positive pattern between income and financial risk tolerance. Cohn, Lewellen, Lease and Schlarbaum (1975) have concluded that relative financial risk tolerance increases with wealth and income. Similar findings have been reported by Cicchetti and Dubin (1994), Friedman (1974), Schooley and Worden (1996), and Shaw (1996).

Education and financial risk have a positive relationship (Sung & Hanna, 1996a; Zhong & Xiao, 1995). It has been observed that formal education influences risk tolerance. Numerous researchers have concluded that greater level of education leads an individual towards higher risk tolerance. Baker & Haslem (1974), Grable & Lytton (1998), Shaw (1996), Garble and Joo (1997) suggested that individual's knowledge of personal finance and economic expectations play a major role in determining his risk tolerance levels. Individuals, who have more knowledge of risk and risky situations and those who expect economic events to be positive in future, tend to have a common psychological profile that allows them to undertake greater financial risks (De Vaney & Su, 1997; Grable & Joo, 1997; Sung & Hanna, 1996b; Weagley & Moore, 1997; Yuh & Devaney, 1996; Yuh & Olson 1997).

Methodology

Questionnaire Development

For the purpose of this study a questionnaire was developed consisting a total of 25 items.

The dimensions that were considered for preparing the questionnaire are as follows:

- Demographic factors
- Socio economic factors
- Guaranteed returns
- Probable returns
- General risk awareness
- Sure Gain v/s sure loss
- Risk as an experience
- Risk as a choice
- Risk as comfort level
- Speculative risk
- Investment risk

Data Collection

Data was obtained from a survey carried out in the city of Indore using a questionnaire. Respondents were asked to respond to 25 questions in total. Seven of the questions were used to assess respondent's demographic and socioeconomic factors. The remaining 18 questions were used to measure respondent's risk tolerance. The exercise of giving the questionnaire was done with 500 respondents, selected randomly. The total response rate of the survey was 94 per cent with 470 questionnaires filled and returned back. Out of these 470 questionnaires 40 were unusable due to missing responses. This resulted in a final number of 430 respondents for the analysis or a usable rate of 86 per cent.

Defining Variables

Independent Variable: --The questionnaire included questions about respondent's age, marital status, occupation, gender, income, education. Practitioners and researchers have considered these variables as very effective in differentiating between different levels of financial risk tolerance and hence these variables were used as predictor variables.

Dependent Variable: -- Risk tolerance, which was determined by each respondent's score on the risk assessment questionnaire, was used as the dependent variable. A respondent's risk tolerance was determined by combining responses to 18 financial risk situations into a risk tolerance index. Responses given in the questionnaire were combined into a risk tolerance index. Answers were given a weight according to the riskiness of the response. Each choice was coded from 1 to 4. Higher point indicated higher level of risk tolerance whereas lower points indicated lower level of risk tolerance. The total index score was developed by summing the points the respondent scored on each item. The reliability of the measure was calculated to be 0.74 using the Spearman-Brown formula. This level of reliability represented an acceptable level of consistency for an attitudinal measure (Pedhazur & Schmelkin, 1991). There is a basic assumption, which makes the total index score work and that is–respondents held consistent risk preferences. If the consistent risk preference assumption is violated the total index scores will be confusing and difficult to interpret. Though this assumption of consistent risk preference is supported by expected utility theory, various other theories and empirical studies show that consumer risk preferences do change with different situations. Scores were allotted for each response as per the following response table. For each respondent the total scores have been calculated based on these weights by adding the individual items score. The scores serve as a measure of risk tolerance.

Table-1: Question-wise Scores

Wts	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25
A	*	*	*	*	*	*	*	1	4	4	4	1	4	1	1	1	1	1	1	1	4	1	1	1	1
B	*	*	*	*	*	*	*	2	3	3	3	2	3	2	2	2	2	2	2	2	3	2	2	2	2
C	*	*	*	*	*	*	*	3	2	2	2	3	2	3	3	3	3	3	3	3	2	3	3	3	3
D	*	*	*	*	*	*	*	4	1	1	1	4	1	4	4	4	4	4	4	4	1	4	4	4	4

Data Analysis and Discussion

Table-2: Demographic Characteristics of the Sample

	Number	%
Total number of Respondents (Sample Size)	430	
Number of Males	275	64 %
Number of Females	155	36 %
Number of Bachelor respondents	211	49 %
Number of Married respondents	219	51 %
Number of Graduate respondents	112	26 %
Number of Post Graduate respondents	318	74 %
Number of respondents in the income group of up to Rs.1 lakh	94	21.86 %
Number of respondents in the income group of Rs.1 lakh to 3 lakh	114	26.51 %
Number of respondents in the income group of Rs.3 lakh and above	222	51.62 %
Number of respondents in the age group of 20 to 35 years	99	23 %
Number of respondents in the age group of 36 to 60 years	305	71 %
Number of respondents in the age group of 60 years and above	26	6 %
Number of respondents with education level of post graduation and above	292	68 %
Number of respondents with education level of graduation and below	138	32 %
Number of respondents with good understanding of personal finance & investment.	103	24 %
Number of respondents with moderate knowledge of personal finance & investment.	275	64 %
Number of respondents with poor knowledge of personal finance & investment.	52	12 %

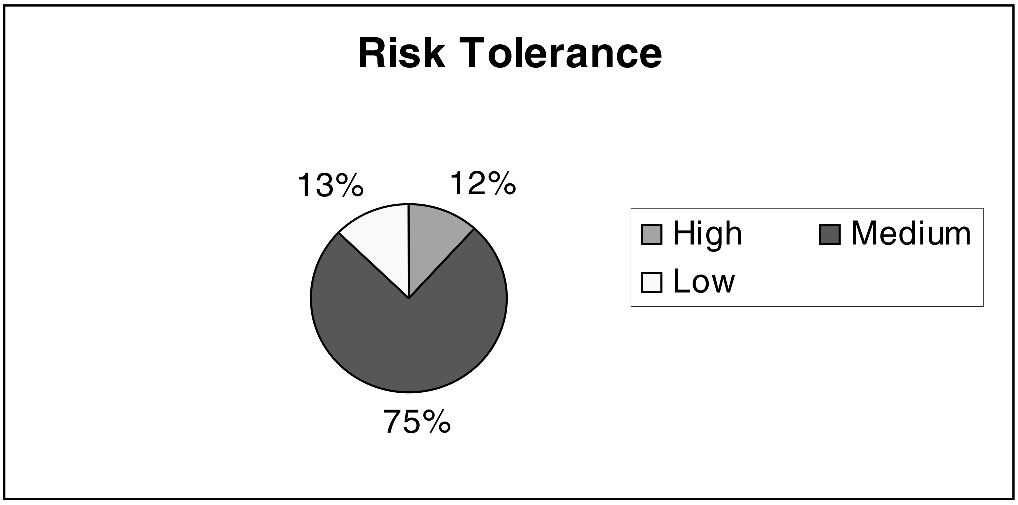
Table 3 : Dimension of Risk Assessed by each item / question

Questions	Demography	Guaranteed vs. probable gambles	General risk choice	Choice between sure loss and sure gain	Risk as experience and knowledge	Risk as a level of comfort	Speculative risk	Prospect theory	Investment risk
1	*								
2	*								
3	*								
4	*								
5	*								
6	*								
7	*								
8			*						
9					*	*			
10								*	
11			*			*			
12					*				*
13					*				*
14				*		*			
15		*		*					
16						*			
17									*
18			*			*			
19		*		*			*		*
20		*	*	*					
21		*		*			*		
22		*							*
23								*	
24								*	
25					*				*

Following Observations were made:

§ Total index scores ranged from a low of 27 to a high of 63 with a mean of 44.66 and a standard deviation of 5.8346. 75 per cent of the sample has medium risk tolerance, 13 per cent has low risk tolerance and 12 per cent has high-risk tolerance. The risk tolerance behaviour of the sample is normally distributed with mean μ = 44.66 and s = 5.8346

Figure 1: Risk Tolerance Behaviour of the Sample



§ 47 per cent of the total respondents (202) had risk index score below average, 52 per cent of the total respondents (238) had risk index score above average.

§ 79 per cent of female respondents had risk index below average and 21 per cent had risk index score above average.

§ 36 per cent of male respondents had risk index below average and 54 per cent had risk index score above average

§ 64 per cent of bachelors had risk index above average and 36 per cent of bachelors had risk index below average.

§ 67 per cent of married had risk index above average and 33 per cent of married had risk index below average

§ 56 per cent of bachelor females had risk index above average and 44 per cent of bachelor females had risk index below average

§ 32 per cent of married females had risk index above average and 68 per cent of married females had risk index below average

§ 72 per cent of bachelor males had risk index above average and 28 per cent of bachelor males had risk index below average

§ 63 per cent of married males had risk index above average and 27 per cent of married males had risk index below average.

§ 58 per cent of respondents with higher education (PG and above) had above average risk index and 42 per cent respondents had below average score.

§ 78 per cent of the respondents believed that economic conditions will improve over the next five years and only 22 per cent of them believed that it was going to remain the same or worsen. Out of those who believed improvement in economic conditions in the next five years 62 per cent respondents had risk index above average and 38 per cent had risk index below average.

Mean, Standard Deviation and Correlation Coefficient with the final score has been obtained.

Table-4: Mean, Standard Deviation, and Correlation

Question	Mean	SD	Correlation with Composite Index Score
8	2.367	0.735	0.49
9	2.609	0.814	0.57
10	2.726	0.908	0.59
11	3.025	0.649	0.37
12	3.202	0.984	0.67
13	2.418	0.929	0.61
14	2.699	0.778	0.18
15	2.369	0.908	0.76
16	2.263	0.945	0.32
17	2.630	0.885	0.43
18	2.768	1.058	0.69
19	2.314	0.932	0.34
20	2.513	0.905	0.71
21	2.375	0.947	0.59
22	2.261	0.932	0.53
23	2.693	1.0638	0.51
24	1.925	0.951	0.36
25	2.352	1.009	0.65

The table above shows mean, standard deviation scores for each of the 18 questions (question numbers 8 to 25), as well as correlations between each item and the composite score. The range of correlation is from 0.18 to 0.71, which indicate a weak to moderate relationship between individual items and the index score.

§ Age of respondents ranged from 20 to 76 years with an average age of 42 years with an overall Standard deviation of 8.3. The study tried to determine the differences between the risk tolerance behaviour due to difference in age. For this hypothesis testing was done

Null hypothesis: $\mu1 = \mu2 = \mu3$

Alternate hypothesis: $\mu1, \mu2, \mu3$ are all not equal.

Following parameters are obtained:

Table-5

	Sample Size	Mean
20-35 yrs	99	43.34
36-60 yrs	305	42.30
More than 60 yrs	26	39.37
Overall	430	42.00

σ^2 b	255.2
σ^2 w	65.9
F ratio	3.9
F critical	3.0

Since F ratio is greater than F critical, we can say that there is significant difference between the risk tolerances among various age groups. (At $\alpha = 0.05$)

The Observations are as under:

- Risk tolerance in the age group 20-35 yrs is the highest (43.34) followed by 36-60 yrs age group (42.3) and more than 60 yrs (39.37)
- Individuals risk tolerance decreases with age.
- Standard deviation is more for 20-35 yrs age group, which indicates that it is not a homogeneous group compared to more than 35 yrs age group.

Figure 2: Age vs Mean

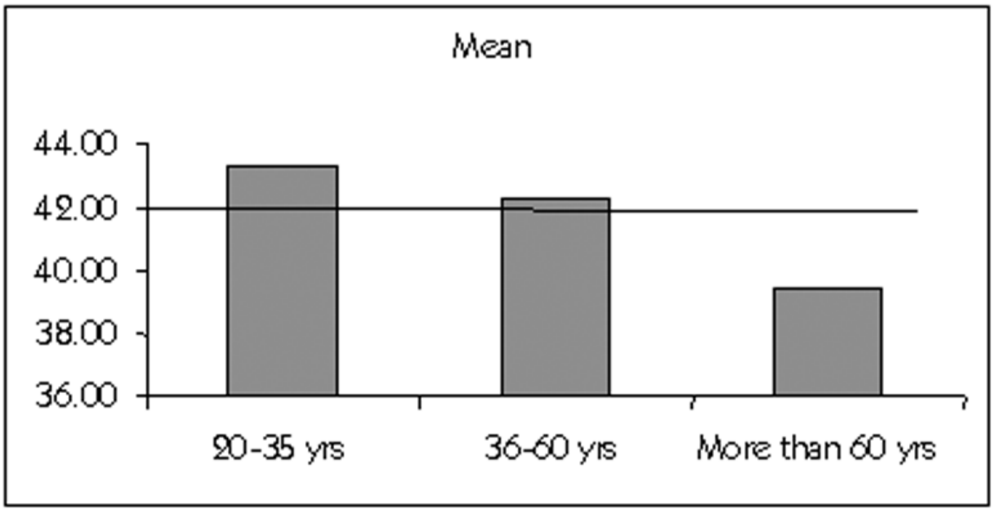
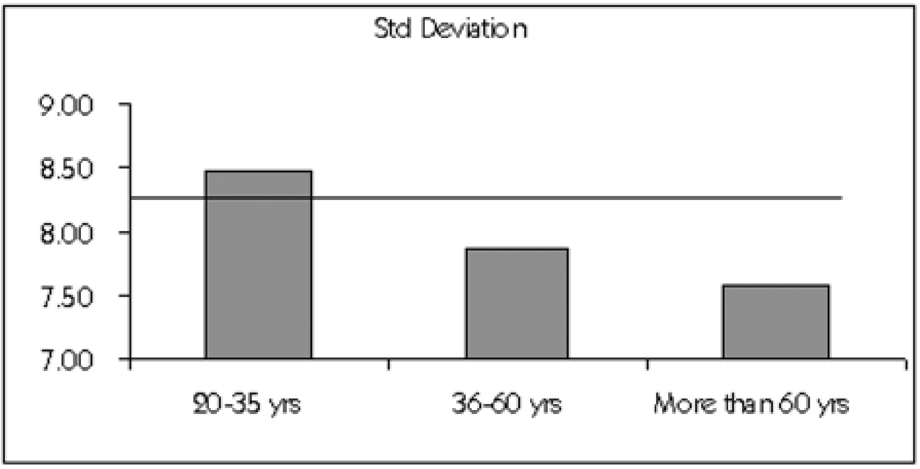


Figure-3: Age vs Standard Deviation



§ The study tried to find out the differences between the risk tolerance behaviour due to difference in income level for this hypothesis testing was used

Null hypothesis: $\mu 1 = \mu 2 = \mu 3$

Alternate hypothesis: $\mu 1, \mu 2, \mu 3$ are all not equal.

Following parameters are obtained:

Table-6

	Sample Size	Mean
Upto Rs.1 Lac	94	38.6
Rs.1 Lac- Rs.3 Lac	114	40.5
More than Rs.3 Lac	222	43.8
Overall	430	41.0

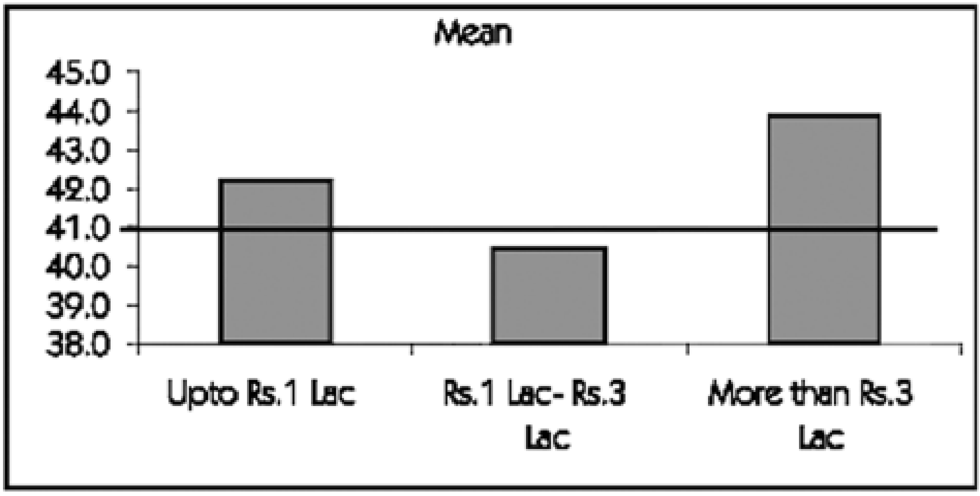
σ^2 b	248.91
σ^2 w	67.34
F ratio	4.96
F critical	3.00

Since F ratio is greater than F critical, we can say that there is significant difference between the risk tolerances among various income groups. (At $\alpha = 0.05$)

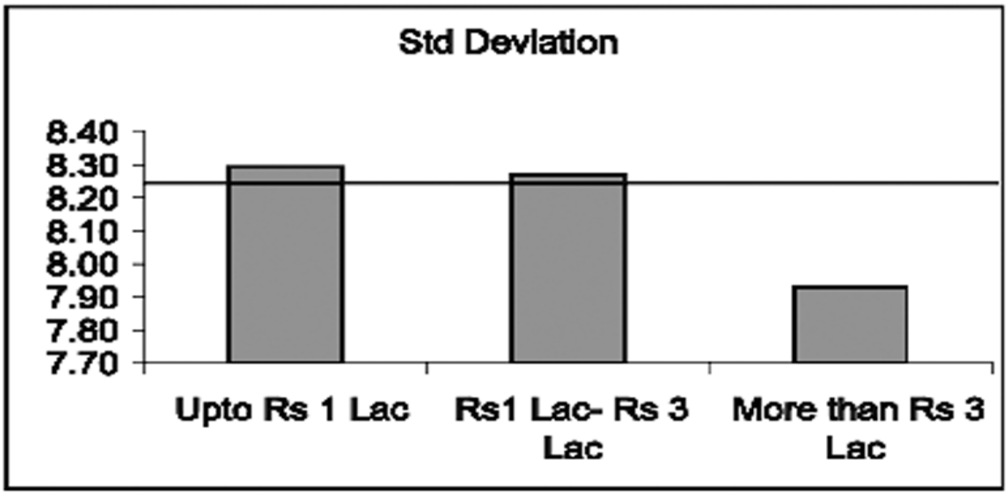
The observations are as under:

- Risk tolerance in the income group of 3 lakh and above is highest (43.8) followed by income group of 1 lakh to three lakh (40.5) and least in the income group of one lakh and below (38.6).
- Individuals risk tolerance increases with the increase in the income.

Figure: Risk Tolerance Vs Income



Figur5: Standard Deviation Vs Income



Conclusion(s)

- Males are more risk tolerant than females.
- Younger respondents were more risk tolerant than older respondents.
- Younger persons are more risk tolerant than older persons
- Singles are more risk tolerant than married persons.
- Single females have more risk tolerance as compared to married females
- Males whether single or married have more risk tolerance as compared to females (single and married both) . However single males were more risk tolerant as compared married males
- Higher income is associated with higher risk tolerance.
- Increased personal finance knowledge is associated with higher risk tolerance.
- Those with greater economic expectations were more risk tolerant than respondents with lower expectation

The use of demographic, socioeconomic and attitudinal factors as determinants of financial risk tolerance received a good support in this research. It can be concluded that the classes of risk tolerance (i.e. above-and below average) differed most widely on a respondent's age, gender, income, educational level and personal finance knowledge. These variables contributed significantly in explaining differences between levels of risk tolerance. Income and age were very useful in explaining differences in risk tolerance. It is also concluded that an above average level of risk tolerance was associated with increased levels of attained education, an increased knowledge of personal finance. Gender, economic expectations, and marital status were also important factor but explained proportionately less variance in risk tolerance.

The positive relationship between education, financial knowledge and financial risk tolerance found in this study generally supports similar conclusions presented by Cutler (1995), Grable and Joo (1997), and Haliassos and Bertaut (1995).Findings related to income being a good predictor of financial risk tolerance supports previous research findings. For example Cicchetti and Dubin (1994), Lee and Hanna (1991), Riley and Chow (1992), Schooley and Worden (1996), Shaw (1996) and Sung and Hanna (1996) determined that risk tolerance varies systematically with levels of income, and individuals with higher incomes tend to have greater financial risk tolerances.

Implications

The most important implication that has emerged out of this study is the use of demographic and socioeconomic factors as determinants of financial risk tolerance. It is important to note that these factors explain a large amount of variance in a person's financial risk tolerance profile. Findings of this study are in line with the reported coefficients of determinants in the literature, which suggest that demographics and socioeconomic characteristic explain about 30 per cent of a persons risk taking propensities. An increased level of education and personal financial knowledge is associated with above average risk tolerance. This gives a new direction to resource management professionals that they should not rely too much on factors like marital status, gender, age but should take into consideration other factors to differentiate between levels of risk tolerance and to predict risk tolerance.

Limitations and Recommendations for Further Research

One of the limitations of the study is sample. A more heterogeneous sample may produce different results. When conducting experiments relating to assessment of risk tolerance attitudes it is best to use a demographically diverse sample that is likely to make risky financial decisions. The sample used in this analysis is acknowledged to be potentially limiting when making generalizations. Researchers and practitioners are encouraged to replicate this study using a different sample frame in order to test the generalizability of these findings to other populations. It is also advised to examine other demographic, socioeconomic, and attitudinal and personality factors which would explain more about variance in financial risk tolerance. More research is needed to determine which additional factors , such as expectations, attitudes, preferences, family background and culture and other financial well being factors can be used to increase the explained variance in risk tolerance attitudes. Researchers are encouraged to expand on the methodologies, theoretical constructs and empirical rationale presented in this paper. Future research must take steps to combine different theoretically based predictors of financial risk tolerance into models. Factors that could be included are locus of control, self-esteem, sensation seeking, family background and culture. Results of this study indicate that understanding a person's financial risk is a complex process and should go beyond the exclusive use of socioeconomic factors. More research is definitely required in this area.

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The Strategic Advantage of New Product Pioneering: Perceptions of Senior Managers in China

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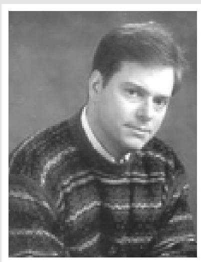
This study explores how managers working for Chinese manufacturing firms and service providers perceive the strategic advantages and the risks of pioneering in a new product category. We develop two testable propositions. It is due to cultural reasons that Chinese managers perceive the preemptive advantages of pioneering to be relatively unimportant; and it is due to characteristic differences between manufactured goods and services that the strategic advantages and risks of pioneering are perceived to be less important for services than for manufactured goods. We develop a set of principles of pioneering advantage and risk from the extant pioneering literature, and test our propositions using a sample of 366 senior managers working in China (225 from manufacturing firms and 141 from service providers). We find support for both propositions. We discuss the managerial implications of our results for firms seeking to enter the Chinese market or to defend their home markets from attack by a Chinese firm. We conclude with directions for future study.

A firm that pioneers an innovative new product in the marketplace stands to gain sustainable advantage through reputation building, cost asymmetries, and many other ways, and increases its chances of ultimate product success and profit performance (Cooper and Kleinschmidt 1987; Kleinschmidt and Cooper 1991; Cooper et al. 1994). Excellent reviews of the extensive marketing and management literature on pioneering advantage exist (see Lieberman and Montgomery 1988, 1998; Lilien and Yoon 1990; Kerin, Varadarajan, and Peterson 1992; Kalyanaram, Robinson, and Urban 1995; Song et al. 1999; Song et al. 2000). Much recent research has suggested that firms are coping with increased global competitive pressures by seeking ways to gain competitive advantage with new, innovative products, brought to market at an increasingly fast pace (Griffin 1993, 1997; McDonough 1993). The pioneer also, however, incurs the risks and costs of new product development and market development. A firm that understands the advantages and costs of pioneering new product forms can better develop strategies for market entry and allocate its R&D outlays.



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In this study, we seek to understand how senior managers working for Chinese manufacturing firms and service providers perceive the advantages and disadvantages of pioneering. Past empirical studies of pioneering have been conducted almost exclusively in North America or Western Europe, and the majority have examined manufacturing firms. Due to cultural differences, Chinese managers may employ a substantially different mental model than Western managers do, focusing on different key pieces of information when making their decisions and evaluating their performance (Alba and Hasher 1983; Porac and Thomas 1990). Additionally, due to characteristic differences between manufactured goods and services, the advantages or disadvantages of pioneering may be perceived very differently across these two sectors (Bharadwaj et al. 1993; Tufano 1989). In short, managers from Chinese firms may perceive the consequences of a pioneering strategy in a unique way and choose strategies based on these perceptions; and there may be substantial differences between the perceptions of managers in manufacturing firms and those in service providers.

China is playing a large and expanding role in the global economy. Representing about one-fourth of the world's population, China's trade surplus with the United States has recently passed the $100 billion mark, including exports from Hong Kong (biz.thestar.com, Jan. 20, 2006), and has exceeded Japan's trade surplus with the U.S. for several years now (Barnathan 1996). China's gross domestic product, expressed as purchasing power parity (PPP), is about $8 trillion, which is third highest in the world, behind only the U.S. and the European Union, and about double that of Japan (www.cia.gov/cia/publications/factbook 2001). The entire Asia Pacific region, in fact, has been called the "engine of world economic growth" (Lasserre 1995). Furthermore, since the mid-1960s, this region has relied heavily on manufacturing for the export market to fuel its growth (Tan and Wee 1995; Soo 1987). Despite the key role of companies in the emerging Chinese economy and the fact that its importance will continue increase in the global marketplace, there has been relatively little systematic investigation of China-based companies (for a few studies, see Parry and Song 1994; Di Benedetto et al. 2003; Di Benedetto and Song 2003). To our knowledge, there are no published empirical studies of pioneering advantages in China.

In this study, we develop a set of principles of pioneering advantage and risk from the extant pioneering literature, and determine empirically which of these are perceived by Chinese senior managers to be the most important. We include managers in both manufacturing and service sectors in our study, in order to compare the findings obtained from each sector. We intend to shed light on how Chinese managers perceive the relative advantages of pioneering a new product category, and thus to gain insights on their entry timing strategies. Our results are therefore useful to firms who have launched products in the Chinese market (or plan to do so), as well as for firms experiencing competition in their home market from Chinese firms. For example, a firm being threatened by a Chinese competitor on its home turf could potentially slow or deter the latter's entry by carefully selecting signals indicating that the market is unattractive for pioneering. In addition, non-Chinese firms can use these insights to discover ways to improve their own success in China.

Literature Review

Pioneering Performance and Pioneering Advantage

Studies of pioneering advantages using the PIMS database (for example, Robinson and Fornell 1985; Robinson 1988; Robinson, Fornell, and Sullivan 1992; Huff and Robinson 1994) as well as several other empirical studies (such as Urban, Carter, Gaskin, and Mucha 1986; Kalyanaram and Urban 1992) provide evidence that pioneers obtain sustainable competitive advantage and tend to outperform later entrants substantially. Some other studies provide more equivocal results (for example, Golder and Tellis 1993). Most of these, however, indicate that earlier entrants tend to outperform later ones in terms of market share and/or profitability. Lilien and Yoon (1990) find that the third and fourth entrants tend to outperform both pioneers and later entrants, which supports their proposition that the pioneer's entry may be either too early (sending an underdeveloped product to market) or too late.

The contradictory findings may be partially explained by how pioneers are defined and how pioneering advantages are measured. Researchers have defined pioneer differently. In many studies (such as Urban et al. 1986), pioneers are defined as the first firm to launch a product in a new product category. The PIMS-based studies use self-reports to identify pioneers that may be problematic: in some product categories, over 70 per cent of respondents claim to be pioneers. Inconsistency of definitions is compounded by differing levels of analysis: some studies use the product category, some the business unit, and some the firm. The member firms in the PIMS database are allowed to choose what constitutes a business unit and may select different levels of aggregation (Kerin, Varadarajan, and Peterson 1992). Furthermore, the PIMS studies and many others examine only successful pioneering firms. Generalizations may also be hampered in that different studies analyze very different industries that may not be comparable (for example, Schmalensee 1978; Gorecki 1986).

Furthermore, most studies examine the effects of pioneering after the fact, that is, they describe pioneering advantages actually realized by the firms studied. In order to support strategic decision-making by management, we need to understand the intended advantages as perceived by the pioneering firm. These may well be different from the advantages as seen by ex post analysis. In order to make sense of large amounts of information, managers tend to use simplified "mental models" of their competitors and other components of their business environment (see Porac and Thomas 1990), then make strategic decisions based on these mental models and their own beliefs. In other words, managers base their strategic decisions and actions on their perceptions of and beliefs about the environment, whether or not those perceptions are correct. Based on our interviews with senior managers from China, the United States, and other countries conducted as part of this study, we found that managers tend to make their major pioneering market entries based on their own personal experience and beliefs, that is, what they believe to be pioneering advantages.

Despite the risks, a pioneering firm may receive a sustainable relative advantage. In fact, the edge in market share that a pioneer has over later competitors in mature goods industries has been classified as an established empirical generalization (Kalyanaram, Robinson, and Urban 1995). In their conceptual framework of pioneering advantage, Kerin, Varadarajan, and Peterson (1992) identified four categories of competitive advantage that the pioneer potentially gains over later entrants: economic, preemptive, technological, and behavioural.

Economic pioneering advantages include economies of scale or experience, and cost asymmetries in advertising and promotion, both of which can result in cost advantages to the pioneer. Firstly, the pioneering firm is in a position to take advantage of economies of scale and experience, and lower its costs relative to those of later entrants. By being ahead of the later entrants on the experience curve, the pioneer can be seeking further cost savings in its production process while its competitors struggle to reduce costs. Often, the follower firm is left to seek a specialized niche to serve, as it cannot close the cost gap. Secondly, asymmetries in marketing costs result in cost advantages for the pioneer. Follower firms are in a position where they must not only create awareness for their brands, but also convince customers to switch their regular buying patterns. Later entrants need greater expertise in marketing and more aggressive advertising in order to overtake the pioneer (Lilien and Yoon 1990; Urban, Carter, Gaskin and Mucha 1986; Fornell, Robinson and Wernerfelt 1985).

Preemptive pioneering advantages. By moving first, the pioneer has the opportunity to get the lowest costs on plant, equipment and factor inputs, to enter the most lucrative market niches, and to obtain the best channel of distribution for its product (Lieberman and Montgomery 1988, 1998; Eaton and Ware 1987). These preemptive factors result in an absolute cost advantage for the pioneer over other competitors (Kerin, Varadarajan and Peterson 1992). The pioneer also has the opportunity to preempt the most attractive niches in perceptual space (Lieberman and Montgomery 1988; Urban et al. 1986), limiting the options available to later entrants (Hauser and Shugan 1983).

Technological pioneering advantages include not only product or process innovations that serve as entry barriers and/or improve product quality, but also organizational innovations. Patent protection is a factor in some industries. Furthermore, any product or process innovation that increases product quality or performance potentially can increase switching costs and give the pioneer a differentiation advantage (Kerin, Varadarajan and Peterson 1992). The advantages the pioneer gains due to technological leadership may provide the pioneer with a strong reputation or a positive identity, which are benefits that can persist even after follower firms catch up in technology (Porter 1983).

Behavioural pioneering advantages are those that are related to the behaviour of the customer: the cost of switching suppliers (Lieberman and Montgomery 1988), the acceptance of the pioneer's product as the industry standard (Carpenter and Nakamoto 1989), reputation building that can lead to positive word of mouth, and informational asymmetries on the part of customers. By moving first, the pioneer has the opportunity to define the product category by influencing customer perceptions of the relative importance of attributes (Carpenter and Nakamoto 1989). This opportunity arises because customers are not likely to have strongly formed perceptions about the importance neither of attributes nor about their preferred combination early in the evolution of the product. Furthermore, customers have imperfect information about the relative quality of competing brands, and will stay with the pioneer if they find it to be acceptable and thus avoid search costs (Schmalensee 1982; Hoch and Deighton 1989). Later entrants will encounter difficulty becoming part of the customer's consideration set due to informational asymmetries and search costs (Hauser and Wernerfelt 1990).

Pioneering Risks

Pioneering firms are not always successful in protecting their initial advantages (Schnaars 1986). Lieberman and Montgomery (1988) identify four risk categories facing pioneers: free-rider effects, technological or market uncertainties, shifts in technology or customer needs, and incumbent inertia. The late entrant may free ride on the investments made by the pioneer in R&D or market development. As imitation costs are lower than innovation costs in many industries (Lieberman and Montgomery 1988), free riding may be a real threat facing pioneers. Technology uncertainties present risks to the pioneer; a firm may choose to wait until the dominant product form emerges (Olleros 1986), at which point the low-cost manufacturer often has an advantage. Uncertainties about the market may cause the pioneer to choose a suboptimal position for its product; a later entrant may take advantage of the pioneer's positioning mistakes (Hauser and Shugan 1983) or can influence customer preferences to its advantage (Carpenter and Nakamoto 1990). Furthermore, customer needs or technologies may change, leaving the pioneer vulnerable as later entrants identify and capitalize on these changes. The last risk category is incumbent inertia, which may be due to inflexibility of the pioneer organization or its investment in fixed assets (Lieberman and Montgomery 1988).

Because of these risks, the pioneer is not always capable of sustaining an initial advantage. For mature goods markets, although pioneer advantage may decline through time, the pioneer still maintains a market-share edge over later entrants (Huff and Robinson 1994; Kalyanaram, Robinson, and Urban 1995). There is some evidence that pioneers lose market share as product quality declines, as prices and costs increase, and as product line breadth advantage decreases (Robinson 1988). Furthermore, the higher the increase in purchase amount and frequency of purchase, the more the pioneer's market share increases (Robinson 1988). Kerin, Varadarajan, and Peterson (1992) suggest three conditions that must be met for a pioneering advantage to be sustainable: (1) customers must be able to perceive a consistent difference in key attributes between the pioneer and the followers; (2) later entrants cannot imitate the pioneer's position on these key attributes; and (3) customers continue to consider these attributes as the key ones.

Development of Research Propositions

While most of the pioneering advantages and risks described above may seem to be universal, we expect their relative importance to be affected by the prevailing cultural environment in China. Furthermore, we expect that managers from manufacturing firms and service providers will perceive the advantages and disadvantages of pioneering differently, due to basic differences between these two sectors. We elaborate on our research propositions below.

National culture plays an important role in shaping the values of senior managers (Nakata and Sivakumar 1996) and thus can affect managerial perceptions of the advantages and risks of pioneering. China shares several cultural characteristics with its East Asian neighbours: an emphasis on collectivism over individualism, greater power distance (more centralized authority), greater masculinity (more attention on goal directedness and formalization), and higher uncertainty avoidance (higher anxiety over the future and greater motivation to create a sense of control and minimize risks) (Hofstede 1980, 1994; Nakata and Sivakumar 1996). The cultural trait of "Confucian Dynamism" (Hofstede 1994; Hofstede and Bond 1988) was found to be prevalent in China; cultures high in this trait exhibit high levels of thrift, perseverance, respect for tradition, fulfillment of social obligations, a future-oriented mentality, and a long-term orientation.

In this cultural environment, one would expect some pioneering advantages to be more important to managers than others. Specifically, in a culture where collectivism, social obligations, and building for the long term are important, managers are less likely to value preemptive pioneering advantages (such as having exclusive control over the distribution system, key suppliers, or critical perceptual positions, or erecting cost-related entry barriers against potential competitors). Pioneering is more likely to be seen as a way to foster a beneficial long-term relationship with customers and suppliers, rather than a way to preempt existing or future competitors. We make the following proposition:

P1: Chinese managers will perceive the preemptive advantages of pioneering as less important than other advantages associated with pioneering.

We also expect that managers in service and manufacturing firms will perceive the benefits and risks of pioneering differently (Bharadwaj, Varadarajan and Fahy 1993; Song et al. 1999; Song et al. 2000). A service, being intangible, is likely to be less costly and risky to develop than a manufactured product and more difficult to protect by patent. Follower firms may thus be able to copy successful services easily and surpass the pioneer (de Brentani 1989; Tufano 1989; Terrill 1992). In addition, many services are heterogeneous in nature, thus there may be ample opportunities for a follower firm to tailor its service to specific customer needs. This effect will make it even more difficult for the pioneer to sustain an early competitive lead (de Brentani 1989). All other things equal, pioneering may provide less of a benefit (in terms of higher market share or profitability) to service providers, unless the pioneer has some other form of protection available. For example, Federal Express sustains its lead in the overnight package delivery service industry via its large capital investment, which acts as an entry barrier, and Sears was able to use its name and distribution system as leverage when launching the Discover Card (Terrill 1992; Bharadwaj, Varadarajan, and Fahy 1993).

Furthermore, service providers tend to commit fewer financial and human resources to developing new service offerings (de Brentani 1989). Hence, though relative performance of service pioneers may be lower than that of manufacturing firms, service pioneering is relatively less risky than manufacturing pioneering. We make the following proposition:

P2: Chinese managers in service provider firms will perceive the advantages and the risks of pioneering as less important than do Chinese managers in manufacturing firms.

In order to test our propositions, we derived a set of pioneering principles (advantages and risks) from the extant academic research and from focus group interviews with senior managers. We validated these principles using samples of Chinese senior managers from both manufacturing firms and service providers. For each sample, we determined the level of agreement with each principle and observed which principles were generally believed to be true. The following sections describe our survey instrument design, methodology, and results.

Methodology

Survey Instrument Design

We began by reviewing the literature for statements describing pioneering principles. This generated an initial pool of principles. From this pool, we selected a subset using the criteria of uniqueness and the ability to convey "different shades of meaning" to informants (see Churchill 1979), and reverse-scored several of the items to minimize response set bias. We conducted twelve focus group interviews with sixty-nine marketing managers from fifteen U.S. firms to test the items for clarity and ambiguity, and to provide input for additional scale items (Deshpande 1983; Zaltman, LeMasters, and Heffring 1982). Based on this feedback, items were eliminated and/or modified, and additional items were developed.

We then conducted field research interviews in six Chinese firms. This enabled us to select appropriate research methodologies, establish content validity, and further develop measures, and to assess the extent of cultural bias or response format bias. Chinese managers were shown the list of principles developed above and asked to assess the extent to which each item measured the construct it was intended to measure. They were also asked whether the terms have a common frame of reference across cultures that are relevant to their own culture (Kotabe et al. 1991, p.33). We also submitted the list of principles to an expert panel of business and engineering academics and managers from both China and the United States. We asked the panel members to evaluate each item for clarity, specificity, and representativeness.

Based on feedback from the panel, we prepared the questionnaire in English and used a parallel-translation/double-translation procedure to translate it into Chinese. The questionnaire was pretested with bilingual MBA students and with the field research participants mentioned earlier. Some items were eliminated at this stage due to difficulties in interpretation or ambiguity. The final questionnaire contained the fifty pioneering principles that remained at this stage. In this questionnaire, a pioneer was defined as "a firm that was the first to introduce a new product/brand into its primary markets." Respondents were requested to rate their level of agreement with each of the scale items, using Likert-type scales with values ranging from 0 (strongly disagree) to 10 (strongly agree).

Sample Design and Data Collection

The survey was sent as part of a regular mailing of research reports to all companies participating in an ongoing global research program (Globaltech). The sampling frames were taken from manufacturing firms and service providers listed in the World Business Directory. Through trade associations, personal contacts, and public information sources, key contact persons were identified, and a pre-survey was conducted to gain firms' tentative commitment to participate in the research and to ensure that the final samples would be representative.

Due to budgetary constraints and the difficulty of collecting data from China, a total of 300 Chinese manufacturing firms and 300 Chinese service provider companies were selected. Under supervision of one of the authors, research assistants from China were instructed to follow the same data collection protocol and were assigned responsibility for contacting and collecting data. We asked the contact person in each firm to forward the questionnaire to a senior executive who is experienced in making market entry decisions (the suggestions were: CEO, President, Vice President for Marketing, Vice President for Corporate Strategic Planning; Director of International Division). To increase response rate, we promoted the study in meetings, established personal contacts and a good relationship with the companies, and obtained appropriate endorsements from trade associations and business leaders in China. We also offered several incentives for participation, including executive seminars and research briefing conferences. After four follow-up letters and, in some cases, multiple phone calls and facsimiles, we received questionnaires from 366 respondents, comprising 225 responses from manufacturing firms and 141 from service providers. The corresponding response rates (adjusted for returned mail and deletion of unusable returned questionnaires) are 75 per cent and 47 per cent respectively.

TABLE 1
Respondent Demographics

	Manufacturing Firms	Service Providers
Number of Participating Firms	225	141
Age	41.7 (4.7)	41.8 (4.4)
Years of Working Experience	19.5 (3.0)	17.7 (3.3)
Number of Major Market Entry Decisions Made in Past 5 Years	17.2 (2.3)	16.8 (2.2)
Number of Overseas Trips Made in Past Year	10.9 (2.8)	8.4 (3.1)
Number of Industry Association Meetings Attended in Past Year	3.3 (1.1)	2.9 (1.0)

Cells show means and standard deviations (in parentheses).

Table 1 presents the profile of respondents. All had substantial work experience, particularly in making global market entry decisions. Table 1 also indicates that the sample is very experienced and knowledgeable. Average age in both samples was just under 42 years, and the average number of years of work experience in each sample was in the range of 17 to 20 years. The respondents have had extensive experience in making market entry decisions: on average, in the five past years, respondents made about 17 major market entry decisions. The respondents also had made, on average in the previous year, about eight to ten overseas business trips and had attended about three industry association meetings (Table 1).

Analysis and Results

The overall level of agreement with the pioneering principles was assessed for each sample (manufacturing firm and service provider managers). The 50 scale items (pioneering principles) were centered, such that zero meant, "neither agree nor disagree." Then, to assess the level of agreement with the scale items, each item was considered as the alternative hypothesis in a one-tailed test. The null hypothesis in each case was that the principle was not perceived to be true. A significantly positive score on an item rejects the null hypothesis, suggesting that the principle is perceived to be true at the 95 per cent confidence level. The results of this analysis are presented in Table 2. For ease in interpretation, the scale items perceived to be the most important by each sample are presented in order of importance in Table 3.

TABLE 2
Scale Item Means for Manufacturing Firms and Service Providers

Variable	Manufacturing Firms	Service Providers
Pioneering Performance Benefits		
Pioneers can charge a premium for the same products.	1.88	n
Pioneers will have a better brand image in the industry.	1.32	n
Pioneers' products are perceived to have higher quality by consumers.	1.12	n
Pioneers' advantage of higher market share is less in industries where products are changed on a seasonal or on an annual or periodic basis.	1.28	n
Pioneers will have higher levels of market share.	1.20	n
Pioneers will have higher levels of return on investment.	1.13	n
Pioneers tend to develop broader product lines than late entrants.	1.23	n
Pioneering Risks		
Being pioneer is more risky than being the followers.	0.64	n
Pioneers will have higher levels of market uncertainty than late entrants do.	0.55	n
Pioneers will have higher levels of technological uncertainty than late entrants.	0.49	n
Pioneers often have difficulties adapting to environmental changes.	0.49	n
Pioneers will experience a "learning" period. Late entrants can avoid this by hiring away experienced personnel and learning from pioneers' experience.	n	n
Pioneers tend to have more marketing expenditures than later entrants because pioneers have to educate consumers and develop the markets.	0.55	n
Pioneers will have higher levels of competitive uncertainty than late entrants do.	0.42	n
Pioneers will lose market share over time because of a deterioration of their product quality.	1.76	n
Pioneers lose market share over time because of declining product line breadth.	2.29	n
Pioneers lose market share over time because of declining absolute cost advantages.	1.44	n
Pioneers enjoy less advantage in industries where technological changes are rapid.	1.60	n
Late entrants are able to "free-ride" on pioneer's development of the market.	2.10	n
Pioneering advantages erode over time when late entrants introduce products that are perceived to have higher quality than the pioneering brand.	0.75	n
Economic Pioneering Advantages		
The "learning curve effects" play a significant role in a pioneer's success.	1.72	0.92
Pioneers will enjoy lower direct costs due to scale economy advantage.	1.52	n
Pioneers tend to have higher market shares in industries with intense advertising.	2.89	1.04
Pioneers will have greater absolute cost savings (savings regardless of production scale).	n	n
Preemptive Pioneering Advantages		
Pioneers will enjoy lower production costs.	n	n
Pioneers will obtain better access to superior labor.	0.41	*0.44
Pioneers can secure more experienced managers.	n	n

Variable	Manufacturing Firms	Service Providers
Pioneers can preempt raw material supplies. Later entrants often get lower quality, higher priced raw materials.	n	n
Pioneers can preempt equipment and locations. Later entrants will have to compete with more inferior equipment and in unfavorable locations.	0.41	1.23
Pioneers can erect significant levels of entry barriers.	n	n
Pioneers tend to charge lower prices to deter new entrants.	n	n
Pioneers tend to focus on the largest and most profitable market segments. This leaves only specialized niches for later entrants.	n	n
Pioneers can preempt key distribution channels.	n	n
Because of distribution advantages, pioneers will have higher market shares in industries where the product has a low purchase price.	0.61	n
Because of distribution advantages, pioneers will have higher market shares in industries where products have high purchase frequency.	1.52	1.72
Because of distribution advantages, pioneers will have higher market shares in industries where customer service is not important.	1.89	n
Technological Pioneering Advantages		
Pioneers will gain a competitive advantage from patent protection.	0.76	n
Because of "learning curve effects," pioneers keep proprietary information from diffusing for a longer time period.	1.01	n
Pioneers will enjoy a high price-cost margin because their products are perceived to have higher quality.	1.39	n
Pioneers' management styles are often models for this industry. These styles are recognized for their effectiveness.	1.60	n
Pioneers are able to leverage management skills expertise into increased market shares.	n	n
Behavioural Pioneering Advantages		
Pioneers can create entry barriers by creating high switching costs.	3.09	2.57
Pioneers tend to be perceived as technological leaders by customers.	1.76	n
To successfully compete with pioneers, late entrants will have to offer higher product quality.	1.94	n
Pioneers will have better brand images with buyers. Consumers often purchase pioneer products simply because they know them first and are used to them.	2.38	0.90
Late entrants into a market must offer higher levels of value (quality for the price) to achieve high profitability.	2.04	n
Late entrants must spend more on advertising and promotion to overcome pioneers' advantages.	1.64	n
Pioneers' advantages will be greater in industries where the risks associated with using the product are higher.	2.64	n
Pioneers' advantages will be greater in industries where the purchase frequency of the products is lower.	2.59	0.74
The perceived quality and performance of a pioneer's product inhibits consumer learning about other competing products.	2.15	n

n: item is not significantly greater than zero.
*: item is significantly greater than zero using 10% one-tailed test.
All other items are significantly greater than zero using 5% one-tailed test.

Sources of scale items:

Pioneering Performance Benefits: Lieberman and Montgomery (1988), Robinson and Fornell (1985), Robinson (1988), Lilien and Yoon (1990), Urban et al. (1986), Parry and Bass (1990), Robinson, Fornell and Sullivan (1992)

Pioneering Risks: Robinson and Fornell (1985), Robinson (1988), Lieberman and Montgomery (1988)

Economic Pioneering Advantages: Fornell, Robinson and Wernerfelt (1985), Lilien and Yoon (1990), Kerin et al. (1992), Urban et al. (1986), Parry and Bass (1990), Robinson, Fornell and Sullivan (1992)

Preemptive Pioneering Advantages: Lieberman and Montgomery (1988), Schmalensee (1978), Robinson (1988), Hauser and Shugan (1983), Urban et al. (1986), Robinson and Fornell (1985), Kerin et al. (1992)

Technological Pioneering Advantages: Robinson (1988), Gorecki (1986), Lilien and Yoon (1990), Porter (1983), Lieberman and Montgomery (1988), Bond and Lean (1977), Kerin et al. (1992)

Behavioural Pioneering Advantages: Lieberman and Montgomery (1988), Kerin et al. (1992), Carpenter and Nakamoto (1989), Bond and Lean (1977), Lilien and Yoon (1990), Urban et al. (1986), Hauser and Wernerfelt (1990)

TABLE 3
Most Important Scale Items for Chinese Manufacturing Firms and Service Providers

Manufacturing Firms	Service Providers
Pioneers can create entry barriers by creating high switching costs.	Pioneers create entry barriers by creating high switching costs.
Pioneers tend to have higher market shares in industries with intense advertising.	Because of distribution advantages , pioneers will have higher market shares in industries where the products have high purchase frequency.
Pioneer 's advantages will be greater in industries where the risks associated with using the product are higher.	Pioneers can preempt equipment and locations. Later entrants will have to compete with more inferior equipment and in unfavorable locations.
Pioneers' advantages will be greater in industries where the purch. frequency of the products is lower.	Pioneers tend to have higher market shares in industries with intense advertising.
Pioneers will have better brand images with buyers. Consumers often purchase pioneer products because they are used to them.	Pioneers will have better brand images with buyers. Consumers often purchase pioneer products because they are used to them.
Pioneers lose market share over time because of declining product line breadth.	"Learning curve effects" play a significant role in a pioneer's success.
The perceived quality and performance of a pioneer's product inhibits consumer learning about other competing products.	Pioneers' advantages will be greater in industries where the purchase frequency of the products is lower.
Late entrants are able to "free-ride" on pioneer's development of the market.	Pioneer will obtain better access to superior labor.
Late entrants into a market must offer higher levels of value (quality for the price) to achieve high profitability.	**
To successfully compete with pioneers, late entrantswill have to offer higher product quality.	**

**Only eight scale items were significant for the service provider sample.

Results for Sample of Manufacturing Managers

As shown in Table 2, forty of the fifty pioneering principles are perceived to be true by managers of Chinese manufacturing firms. That is, the mean scores on each of these principles are significantly greater than zero, indicating agreement with the principle.

Interestingly, most of the ten principles not believed to be true, as seen in Table 2, are preemptive pioneering advantages. Among these principles are the following seven: pioneers enjoy lower production costs; pioneers have access to more experienced managers; pioneers can preempt raw material supplies; pioneers can create significant entry barriers; pioneers can deter new entrants by charging lower prices; pioneers can preempt the most profitable market segments; and pioneers can preempt key distribution channels. These can all be classified as advantages accruing to the pioneer through preemption of competition, and none is believed by Chinese manufacturing firm managers to be an advantage of pioneering. There were only two preemption-pioneering advantages to which these managers agreed: pioneers can preempt favourable equipment and locations, and can gain access to superior labour.

By contrast, Table 3 shows the ten most important principles as perceived by Chinese manufacturing firm managers. The highest level of agreement was obtained for the principle of high switching costs. That is, manufacturing firm managers agree that pioneers establish a long-term relationship with their customers by making it costly to switch to a competitor. Also on the most important list were the principles that pioneers can inhibit consumer learning about competitors, and that pioneering advantage is the highest when product risk is higher and purchase frequency is lower. These principles are also consistent with the idea of a long-term supplier-customer relationship. If the performance of the pioneer's product is satisfactory, the customer will not be willing to expend the search costs and will instead remain loyal with the pioneer, particularly if some risk is attached to making a wrong decision and/or customers are less familiar with the product category since it is infrequently purchased. While not among the ten most important, economic factors such as learning curve effects and scale economies were perceived to be significant advantages of pioneering, as were most of the technological factors (patent protection, higher quality products, and innovative management styles). These results suggest that managers from Chinese manufacturing firms are willing to make a pioneering market entry in order to establish, and capitalize on, a technological leadership position.

As seen in Table 3, Chinese manufacturing firm managers believe strongly that late entrants can benefit from free-riding. They also believe that the late entrants can only be a serious threat to the pioneer if they can offer higher value or better product quality than the pioneer, and thus give the customer a reason to incur the switching costs. Pioneers are perceived to have better brand images with customers, and to have a greater advantage if industry advertising is high (thus raising the cost of entry to potential competitors). All of these principles also support the idea that manufacturing firm managers perceive pioneering as a way to build and maintain a long-term relationship with customers.

In sum, there is general agreement among Chinese manufacturing firm managers that a pioneering strategy presents several competitive advantages and also carries several risks. This suggests that, despite the risks associated with being a pioneer (higher technological or market uncertainties, free-riding by competitors, and so forth), pioneering benefits are still viewed as more important by these managers. Furthermore, these managers tended to perceive the preemptive advantages of pioneering to be less important than other pioneering advantages, particularly those having to do with building and sustaining a long-term relationship with customers. This finding supports Proposition one and is consistent with the long-term orientation and future-oriented mentality characteristic of cultures high in "Confucian dynamism." Our result is also consistent with previous empirical studies that compared managers from China with Western and Hong Kong managers (see Tse et al. 1988; Ralston et al. 1993), which found that Chinese cultural norms played an important role in Chinese decision-making or managerial values.

Results for Sample of Service Managers

Table 2 indicates that the perceptions of Chinese service managers were greatly different from those of manufacturing firm managers. Most obviously, they tended not to agree with the pioneering principles. While manufacturing firm managers agreed with forty of the fifty principles, service providers agreed with only eight. That is, only eight of the scale item means were significantly greater than zero (including one that was significant only at the 0.10 level).

Table 3 contains these eight principles ranked in order of importance. There are many similarities and a few notable differences observed in comparing these principles to the most important principles observed for the manufacturing firm sample. Service managers agreed with manufacturing managers that high switching costs are the most important advantage of pioneering. They also perceived that pioneers have greater advantages in industries with intense advertising, and have better brand images with customers. Furthermore, they perceived that a pioneer can capitalize on learning curve effects, and can capitalize on distribution advantages. Interestingly, they also perceived preemption of desirable equipment and locations, and of superior labour, as significant advantages of pioneering. (These were the only two preemptive pioneering advantages that manufacturing firms also agreed with.) There were no scale items to which service managers agreed but manufacturing managers did not agree.

In sum, Chinese service managers perceive that pioneering generally does not result in many important advantages and does not carry that much risk. These findings support Proposition 2. They also appear to believe that a service pioneer may be able to gain a sustainable advantage in certain circumstances, for example, through capitalizing on locational advantages.

Discussion and Conclusions

Pioneering new, innovative product forms is seen as a potentially very lucrative strategy in today's highly competitive, global environment. Past studies of pioneering advantage, however, have tended to be ex post in nature, only studying advantages actually realized by the firms? In addition, for the most part, they have been conducted in North American business environments only, and primarily among manufacturing firms; little is known about whether our knowledge about pioneering advantage are culture specific or truly universal (see Bass and Wind 1995; Lieberman and Montgomery 1998; Song et al. 1999). Thus, there is need for greater knowledge about pioneering as a strategy for global market penetration.

In this study, we examine pioneering advantage and risk as perceived by managers from Chinese manufacturing and service firms. To our knowledge, this is the first study that has explicitly examined pioneering advantage in depth in the Chinese business context. The results we obtained were largely supportive of our research propositions that (1) due to cultural reasons, Chinese managers would generally find preemptive pioneering advantages to be less important than other advantages; (2) due to differences between the manufacturing and service sectors, Chinese service managers would perceive the advantages and risks of pioneering to be less important than do Chinese manufacturing managers.

The observed differences provide some support for the view that managers tend to adopt simplified mental models of the business environment within which they work. A manufacturing firm manager working within a business environment shaped by Chinese culture is likely to perceive most preemptive pioneering advantages as relatively unimportant. Behavioural pioneering advantages, and most of the economic and technological pioneering advantages, were perceived to be important by this sample.

We note, however, that the Chinese manufacturing managers in our sample agreed with four-fifths (40 of 50) of the pioneering principles, which had been derived from Western empirical studies. While we clearly cannot make a case that these principles are "universal" on the basis of a one-country sample, we do find some evidence that our understanding of pioneering advantage derived from Western studies is at least somewhat applicable to Chinese manufacturing managers.

Furthermore, holding culture constant, substantial differences were observed between respondents from the manufacturing and service sectors. In fact, the most apparent conclusion to be drawn from Table 2 is that manufacturing managers tended to agree with most of the pioneering principles, while service managers tended to agree with very few. These differences can best be explained in terms of mental model differences between the two sectors. In a service industry, product innovation often is less costly, less risky, and easily copied by competitors; pioneering advantages and risks may thus be perceived to be less important to service managers than to manufacturing firm managers.

From a managerial point of view, it is important to understand these mental models, as managers (and their counterparts at rival firms) will use them as the foundation for making strategic decisions. For example, a foreign manager who understands how Chinese rivals view pioneering advantage (and how those views differ from his/hers) is in a better position to decide what signals will be most effective to send in deterring pioneering action by the Chinese firm. We found that Chinese manufacturing firm managers place great importance on several of the behavioural pioneering advantages. A foreign (i.e., non-Chinese) firm conceivably could deter a Chinese firm's market entry by strengthening its position on the most important behavioural advantages. By bidding up customer switching costs, building a strong brand image, by offering a product of superior quality and high value, and by advertising heavily, the foreign firm may make it unattractive for the Chinese firm to enter the market, since it would be more difficult for the Chinese firm to obtain the pioneering advantages it considers most important.

Our results are also useful for managers considering entry into the Chinese market, as the perceptions of the respondents in this study reflect the realities they face in their home market. Thus, one can infer the attractiveness of the Chinese market for a prospective pioneer from the perceptions stated by respondents in this study. Chinese manufacturing firm managers believe that the pioneer does not gain advantages due to low production costs, access to experienced managers, or preemption of raw material supplies or distribution channels. The results suggest that a strategy of preempting distribution channels, labour, or raw materials will not result in sustainable pioneering advantage in China. Yet pioneers can capitalize on a different set of advantages in China: perceptions of better brand images, for example, and high switching costs. Thus, it still may be attractive to pioneer a new product in China, but perhaps for reasons that might not have been anticipated. This knowledge can help foreign managers better assess the benefits and risks of pioneering in China.

A limitation of this study is that we have tested the pioneering principles only in China. While we found useful and interesting results regarding the perceptions of managers in both manufacturing and service sectors, we cannot claim to have found evidence of "globally valid" pioneering principles. In future studies, it would be of interest to determine how firms from other parts of the world (such as the Pacific Rim, Europe or the Middle East) differ from Chinese firms in their respective perceptions of pioneering principles. Another useful direction for future study is to do an ex-post comparison of successful versus unsuccessful pioneers. Most prior empirical studies have examined only successful pioneering, so empirical identification of the factors that distinguish the most successful pioneering efforts has not been possible. While it is extremely difficult to gather any data at the brand or project level on unsuccessful pioneering, especially from foreign countries, we believe that such a project would provide valuable information to product managers and would be worthwhile to pursue.

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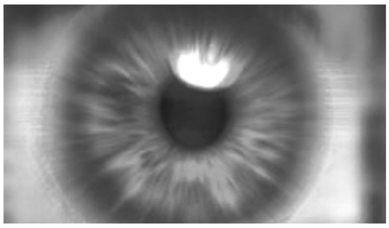
e-Business Assurance



V.K.Gupta

This paper examines the need to improve consumer confidence and trust in the e-business capabilities, security and performance by e-assurance mechanism. The lack of security, reliability and accountability makes Internet transactions too risky for many users. Security requirements are very different for different types of businesses. What role does an assurance mechanism play to strengthen the security of business on the Internet highlights the basic principles of e-assurance practices like Strategic Examination, Business Practices, Technology, Functionality and Compliance. Attestation and certification are the final steps towards providing an assurance guarantee to an e-business. The paper discusses some international standards for attestation and certification. The paper ends with the conclusion that for an effective business online both the business organizations and the nations need to play a vital role. There is a need for a common protocol and common international standards governing e-business assurance to promote online businesses and enhance consumer confidence in online transactions.

There has been an unprecedented growth in Internet access throughout the World. Along with more and more people enjoying internet connectivity, and companies becoming more and more reliant on the internet as an essential tool in today's business arena, has been the inevitable proliferation of cyber crimes.

The internet has opened up a world of possibilities for organizations that offer products and services to consumers. Web sites are open for business 24 hours a day, seven days a week. But recent studies have indicated that only 20 to 25 per cent of potential customers are willing to transact business online for fear of having a credit card, personal, or other sensitive informat lost or stolen. Therefore there is a need to show existing and potential customers that it is safe to do business online.

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2. What is e-Business Assurance?

Many companies are not adjusting properly to business risk mitigation in an e-business world. To properly manage risk, organizations need to evaluate, test and mitigate business risk by thoroughly analyzing the strategy, business practices and technology risk associated with their e-business activities. This evaluation needs to be performed in light of the organization's business objectives.

Assurance services are designed to help clients assess their e-business activities in all aspects and evaluate their entire e-commerce capacity. To understand the strengths and pitfalls of the e-business environment some of the e-Assurance considerations are - strategy, infrastructure, legal and regulatory, organizational readiness, business process readiness and even branding and marketing. A third party normally provides these assurance services.

e-Assurance mechanism considers branding and marketing also as it determines if the web presence of a site has been established and whether monitoring is done of similar domain names to prevent misuse of a site name.

3. Need for e-Business Assurance

Any business online is under threat from several factors like virus, hardware failure, system overloads, hackers, fraudsters, competitors and even may be from disgruntled employees.

This need to improve consumer confidence and trust in the e-business capabilities, security and performance, has led to the development of assurance services (Figure I). These services can be used to allay consumer fears about web transactions through the issuance of an online attestation report covering internal controls over key e-business operational and control areas.

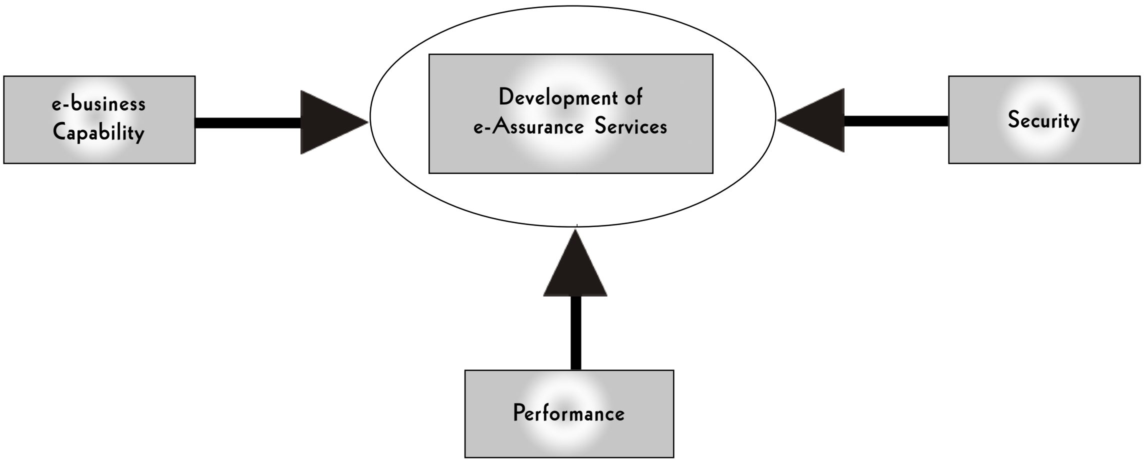


Figure 1. Factors Responsible for Development of e-Assurance Services

3.1 e-Business Capability

A capable e-business should provide for confidentiality and integrity of data. Confidentiality of data can be ensured by mechanisms like data encryption, automated access controls, access control lists, passwords tokens, biometrics. The integrity of the data can be verified by digital signatures, permissions, hash algorithms and audit trails.

The most used method to secure data transmission over networks is encryption and cryptography. Encrypting a file scrambles the data in it into unreadable, garbled characters. All cryptography is based on the concept that only users of the encrypted information should have the keys needed to decrypt it into something understandable.

3.2 Security

Built-in security is not provided by the Internet as messages and information sent via computer may be routed through many different systems before reaching their destination. According to a survey carried out by RDI Computer Corporation on how people feel about Internet security, 46 per cent of people surveyed stated they have experienced some type of security break-in; however 80 per cent have not recently purchased any type of security software. The top three main concerns (Figure II) mentioned by the respondents were:

Figure 2. Security concerns of Internet Users

- unauthorized data retrieval (system privacy)
- password security (user privacy)
- security of commerce transactions

3.2.1 System Privacy

Companies must consider the threat of personal or financial information being altered, damaged or destroyed as personal records or customer records are greatly at risk of losing their confidentiality and secrecy. An important security issue to consider is that information about the web server's host machine may leak through, giving outsiders data that will allow them to break into the host machine. Allowing a security hole to the host machine would make a host vulnerable to the outside.

Netscape is an example of software in which security holes were found and used to alter information. Netscape was broken into by two graduate students who said they found security gaps in some of the software used at many different Internet sites.

3.2.2 User Privacy

The Internet does not have its own system privacy, nor does it have built-in individual user protection. "The danger on the Internet is the illusion of anonymity. People think that they are invisible." (Miller, 1996). In reality servers log every access, IP address, time of download, user's name, URL requested, status of request, size of data transmitted, client the reader is using and sometimes the user's real name and e-mail address. If the client is a single–user machine the download can be attributed to an individual. This information could be very damaging. It could signal cooperate takeover, or show who is interested in a job change by reading who looks at job listings.

3.2.3 Commerce transaction privacy

The third, fastest and important growing security concern is the protection of commercial transactions over the Internet.

The lack of security, reliability and accountability make Internet transactions too risky for many users. Some of the major concerns about shopping online are:

- Credit card fraud
- Unsolicited mailing lists.
- Merchant legitimacy
- Lack of data privacy

The Internet allows stockpiling of thousands of credit card numbers untraceably. Thieves use each number once, reducing the probability of investigation.

Also the technology and cyber businesses have yet to agree to a common protocol for sending payments on the net. The major players in developing acceptable protocols are banks, software makers (i.e. Microsoft, Netscape) and credit card companies.

Security requirements are very different for different types of businesses. To strengthen the security of business on the Internet, two levels of security checks can be used:

- Perimeter security by using firewalls. Networks can establish firewalls that can encrypt information when the data are going to a known site that has the key to decrypt automatically without intervention by the user.

- Transaction security by providing authentication, message integrity, protection against eavesdropping and providing record of each transaction.

Transaction security can be achieved by channel-based security and document based security. Channel based security secures the channels being used. SSL (Secure Sockets Layer) is the current leader in this field. Document based security secures the documents that make up the transaction being sent (SHTTP-Secure Hypertext Transport Protocol is the current leader).

3.3 Performance

e-business performance can be maintained by availability of back-ups, offsite storage, system redundancies, hot/cold sites, fail-over. The non- repudiation of the data can be maintained by audit trails and logs and digital signatures.

4 Principles of e-Business Assurance

e-business Assurance is based on the following principles as illustrated in figure III.

1. Strategic Analysis

2. Business Practices

3. Technology

4. Functionality

5. Compliance

Figure 3. Principles of e-Business Assurance

4.1 Strategic Analysis

This involves examining the business goals and technical capacities to define a strategy and determine business practices and technological selections. Strategic analysis of an organisation takes a look at the following issues: (Figure IV)

4.1.1 Online approach

To assess why a business should be online and what approach to adapt to be successful online.

4.1.2 Strategic alignment and positioning

To find a need amongst the online customers and determine the target segment of customers for your product offerings. Also an important aspect involves analyzing competitors and identifying potential partners and alliances.

4.1.3 Demand generation and media planning

To develop different methods for attracting customers to a particular online site. This could be possible by various techniques used to generate traffic like advertising, using banners, promotions and contests etc.

4.1.4 Customer value proposition

To provide the right type of combinations of benefits to customers. This could be done by bundling of goods on the Internet to attract customers.

4.1.5 Channel strategy

This can be achieved by assessing customer needs and mapping those against different channel attributes. Weighing the benefits and drawbacks, consider conflicts of various distribution channels to find a balanced integration strategy.

4.1.6 Launch and evolution

To a determine the date of launching the web site and to evolve and market to the target audience. Also to take into consideration the costs in relation to the opportunity.

4.1.7 Strategic funding

To analyze the economics of the proposed or active e-business.

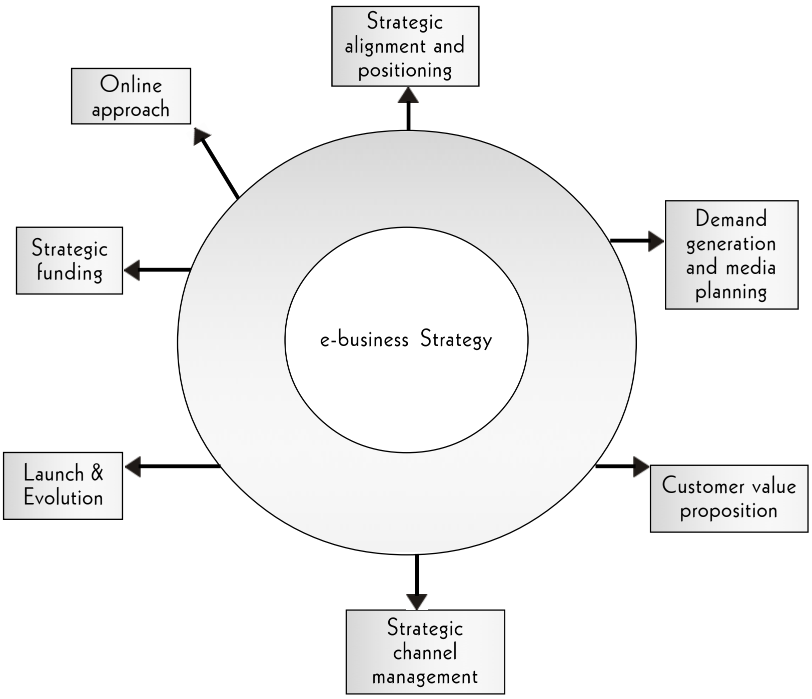


Figure 4. Strategy Analysis

4.2 Business Practices

Involve refining and defining the processes and activities that support the e-business strategy.

The following business practices (Figure V) need to be looked into to align with strategic goals.

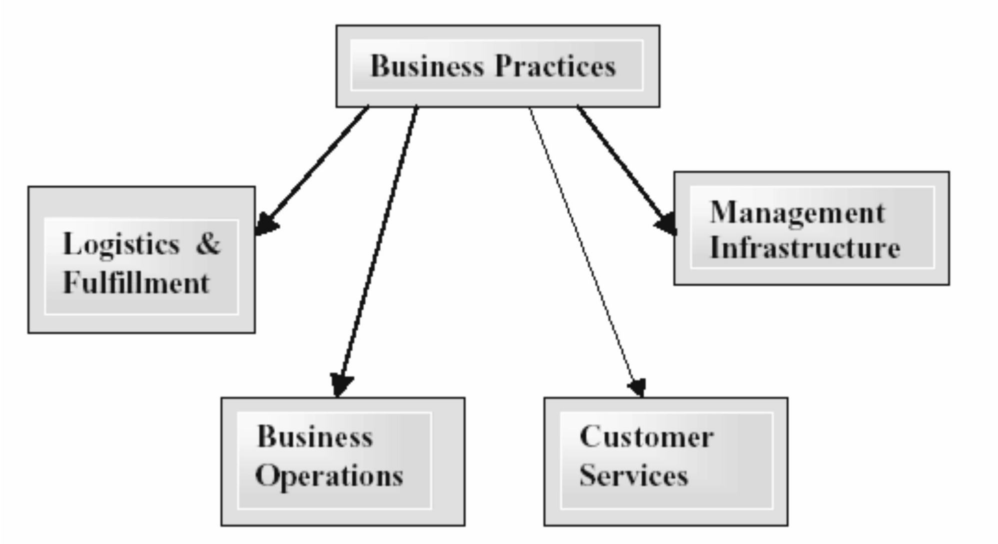


Figure 5. Business Practices

4.2.1 Logistics & Fulfillment

- Procurement
- Inventory Management
- Distribution
- Shipping
- Timeliness

4.2.2 Customer Services

- Policy
- Public Relations
- Medium (e.g., Voice over IP)

4.2.3 Business Operations

- Controls
- Processes
- Workflow
- Contingency Planning

4.2.4 Management Infrastructure

- This involves taking into account critical aspects of
- Project management
- Resource management i.e. important functions of staffing, considerations, HR, Compensation.
- Planning involves important decisions whether to buy or build to fulfill infrastructure requirements.
- Performance targets- this requires determining key performance targets to measure success and to make constant improvements. Also this carries out cost modeling.
- Monitoring and Reporting

4.3 Technology

Assessment of the design and implementation of the right technology makes a successful e-business. Technology plays an important role in strengthening determining various aspects of a business as shown in figure VI.

4.3.1. Reliability

Deals with a system's ability to perform consistently in both normal and adverse conditions within the accepted operational cycle of 24 hours a day for all seven days a week (i.e. 24x7) and system downtime. This enables intuitive and effective management during hazards, peak traffic loads, or attacks for seemingly smooth operations to users. Assessing the criteria for both redundancy and failure at most layers and eliminating single points of failure.

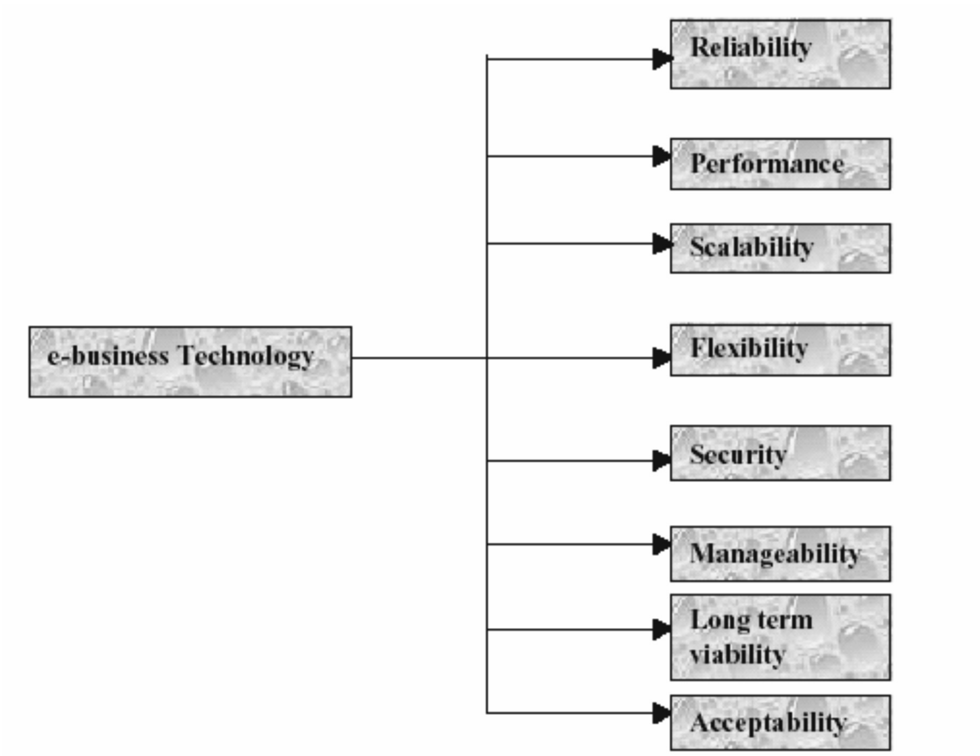


Figure 6: Role of Technology

4.3.2 Performance

Performance of an e-business is evaluated by measuring the time lag between customer request and a response. Effective improvements can be outlined by understanding the technical constraints of an organization. From the customer's point of view, good performance is evaluated in terms of speed and responsiveness. If an organization's performance matches that of the customers of the customer's perception, it encourages continued interaction between customer and organization.

4.3.3 Scalability

Scalability is measuring the technology's ability to expand or contract in size to meet business needs within the growth perimeters defined by the organization. Scalability can be achieved by minimizing constraints in the applications, systems, and network as a whole. This advances performance, service levels and reliability.

4.3.4 Flexibility

Flexibility is a measure of the technical ability to quickly and cost effectively deploys new products and services within the existing infrastructure. A system is flexible if it accommodates large user group's demands by designing modular and re-usable code and using standards – based products that support well-known protocols. Flexibility can be introduced by abstracting system and network components of network architecture for transparency, thereby allowing the ability to duplicate component functionality using products from various vendors.

4.3.5 Security

An important concern for both the organizations and the customers is security aspect that renders the e-business successful. An e-business can be secured by eliminating exploits and ensuring authentication and authorization mechanism to gain customer confidence. Protecting the system resources and preserving the integrity and confidentiality of the data when the system is under attack is an important security aspect. Providing assurance that there is no threat to the system requires constant monitoring and auditing of the system.

4.3.6 Manageability

Is the ability to manage the operational computing environment via proactive management tools and automated responses to messages from the nodes thereby making daily operations more efficient and helping to tighten the security. Also the traffic has to be managed to a level that does not become expensive nor a burden to the network.

It is also about anticipating where technology management will be expensive and unmanageable so as to implement meaningful and affordable controls.

4.3.7 Long-term viability

Evaluating the long-term prognosis on the technology that comprises the e-business infrastructure.

Ensuring that the technology is aligned with the future of e-business opportunities like

- Data voice
- Web TV

Employing proven technology consistent with generally accepted technical standards and solutions from healthy and viable vendors allows for quick adaptation to the rapid pace of change while yielding high returns on investment. The cost of operations and useful metrics need to be measured to help manage the technology investments. Minimizing efforts to replicate systems at offsite locations and for disaster recovery purposes by clearly defining supporting business processes and concise documentation.

4.3.8 Acceptability

All is well and accepted if the technology to be implemented is easy to use and familiar.

4.4 Functionality

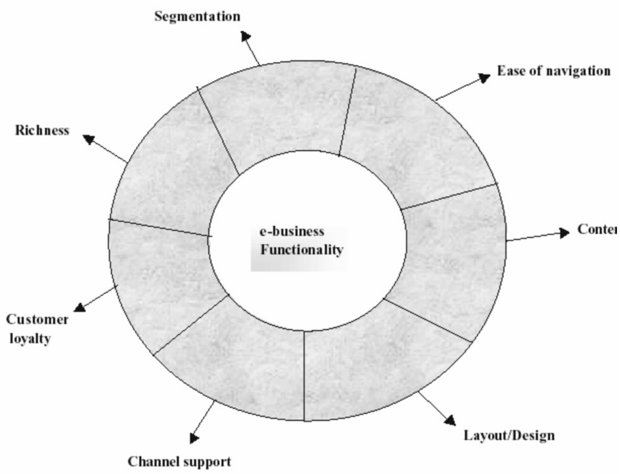
e-business Functionality assesses the degree to which the site addresses the unique characteristics of the market segment and end user (See figure VII).

4.4.1 Segmentation-Is the Degree to which the site recognizes unique customer segments.

4.4.2 Ease of Navigation-An e-business web site should follow logical, intuitive navigational scheme.

4.4.3 Content-This is an important component of a web site. It should provide relevant and valuable information. Also it should provide tailored information about the products and their recommendations.

Figure 7. e-Business Functionality



4.4.4 Layout and Design-Layout and design should be clear and uncluttered organisation of content. Should be easy to interpret and interact with.

4.4.5 Channel support-Is the degree to which the site enables distribution channels and also services the need to request the same information more than once.

4.4.6 Customer loyalty-The site content and relevance should be such that it encourages repeat visits and habitual usage.

4.4.7 Richness-The degree of richness, diversity and recency of the services and information should be "News in the making."

4.5 Compliance

Figure 8. e-Business Compliance

4.5.1 Regulatory

- An e-business is subject to regulatory compliance, which may be
- Juridical
- Authoritative Organizations
- TSE, SEC
- Industry
- Knowing your client
- Concept of suitability

4.5.2 Business practice disclosure

The purpose of the disclosures in this area is to provide assurance to the consumers that they are dealing with a real business that abides by its promises. The disclosures relate to several business practices, such as delivery times, product return policies, and warranty information. Before issuing a web trust logo the assurance provider must verify that disclosed practices are being followed by the seller. One item of disclosure that is required is that the web site must include the seller's postal address and telephone number. Among some other disclosures are:

- Marketing information on the web
- How to enable compliance with business disclosure?

4.5.3 Customer information privacy

Various privacy codes have been formulated to protect the customer information from being misused. Some of these international standards are:

- Bill C-6
- European Directive
- OCC
- Regional Privacy codes

4.5.4 Internal policies and governance

Every successful e-business has

- Mission
- Beliefs
- Charters
- Policies
- Procedures
- Best Practices

4.5.5 Customer service obligations

To be successful in the long run and encourage a healthy customer relationship and organization should consider the following:

- Execution Quality
- Execution Obligations
- Recourse
- Customer Complaints
- Complaint Settlement
- Availability
- Timeliness
- Warranties

4.5.6 Industry best practices

This requires setting Benchmarks. Benchmarking allows a company to put a Web site and e-business model through a rigorous evaluation to determine how it stacks up to accepted best practices, itself, and industry competitors.

4.5.7 Risk management

Is the ability of the organization to manage risk and liabilities as shown in figure IX, especially in unprecedented areas like chat rooms, communities of interest, other aspects like infrastructure, security, organisational change readiness etc.

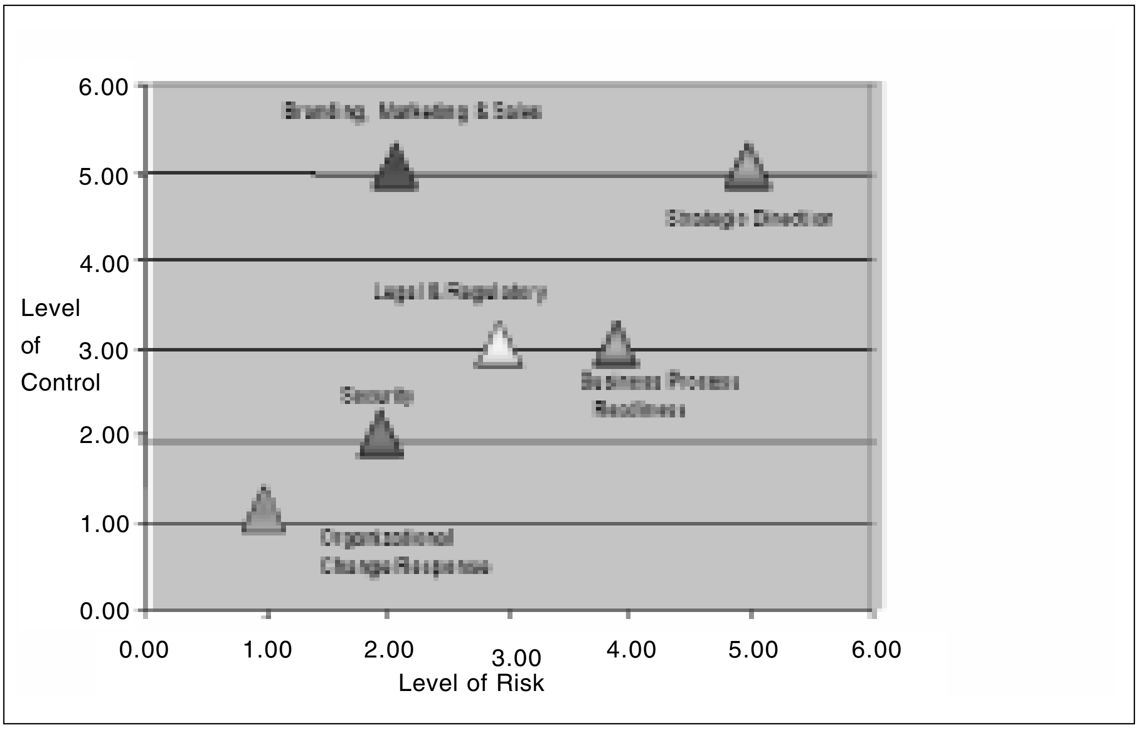


Figure 9. e-Risk and Control Evaluation

4.6 Attestation and Certification

Attestation and certification is the final step towards providing an assurance guarantee to an e-business. It involves verification of the interested parties and then certain set auditing standards and attestation standards are followed to provide assurance certification to the business organization as shown in the figure X.

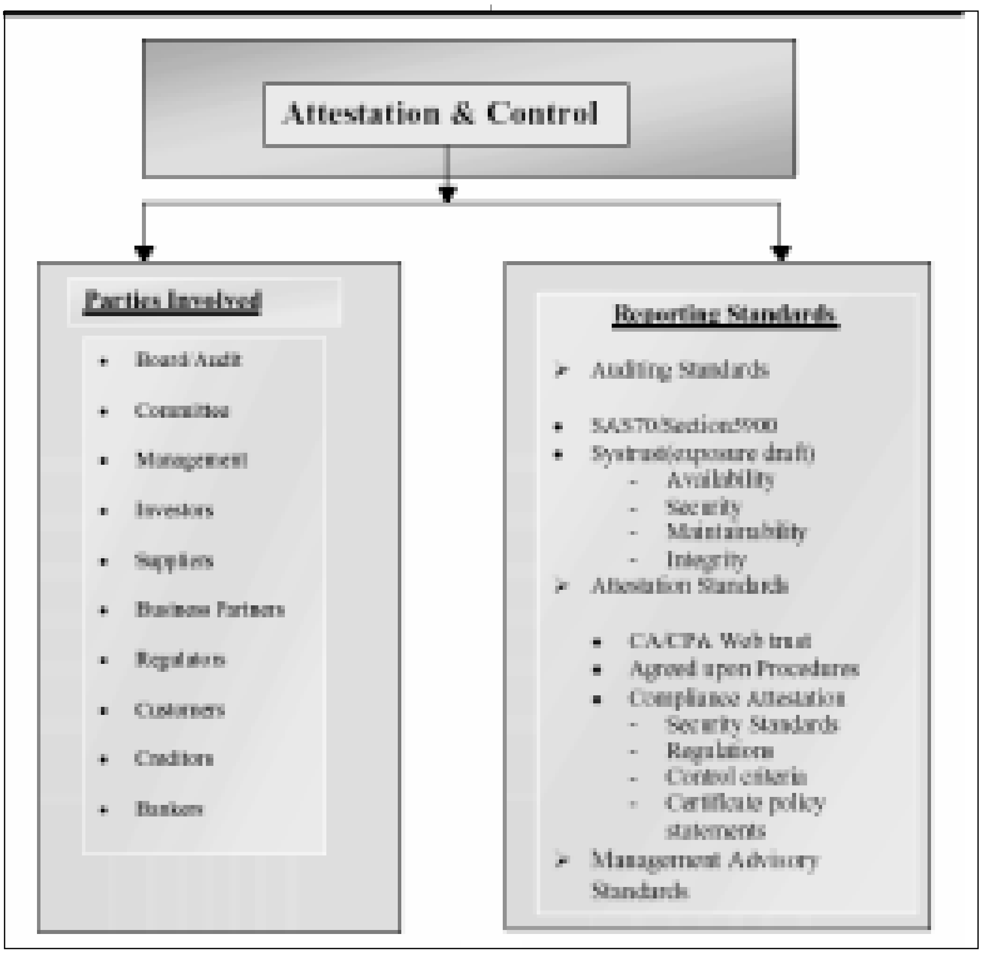


Figure 10. Attestation and Certification

4.6.1 AICPA SysTrust™

The AICPA SysTrust™ attestation service was developed to create trust between business parties performing e-commerce, and focuses on systems reliability. It reports on the availability, security, integrity and maintainability of an organization's system. In this case, a system is defined as an infrastructure of hardware, software, people, procedures and data that together in a business context produces information.

4.6.2 SAS No. 70 Attestation

A SAS No. 70 attestation is a formal report on the design, implementation, and effectiveness of controls at a service organization. If your company outsources some or all of its e-business operations to a service organization, a SAS No. 70 attestation will assure you and your independent auditors of that the service organization's control are effective.

4.6.3 WebTrust

Emphasizes the general principle being asserted to by the entity is that "The entity subscribes to and follows prescribed e-commerce principles." Three specific principles must be met:

- Principle of Business Practices and Information Privacy Disclosures

  The entity discloses its business and information privacy practices for e-commerce transactions and executes transactions in accordance with its disclosed practices.

- Principle of Transaction Integrity

  The entity maintains effective controls to provide reasonable assurance that customer's orders placed using e-commerce are completed and billed as agreed.

- Principle of Information Protection

The entity maintains effective controls to provide reasonable assurance that private customer information obtained as a result of e-commerce is protected from uses not related to the entity's business.

In October 1998, the AICPA issued a press release indicating that Bennett Gold, a Canadian Chartered Accounting firm, had provided a Web trust logo to Competitor Communications, Inc., an Internet service provider for the Rocket Roger.com web site (AICPA Press Release 1998). RocketRoger.com is a web site established for the fans of Roger Clemens, a well-known baseball player. The web site offers information about the career of Roger Clemens and also offers an opportunity to the visitors to purchase Roger Clemens memorabilia using credit cards. RocketRoger.com was the first Canadian web site to receive the Web Trust logo (AICPA Press Release 1998). Bennett Gold, which is based in Toronto, Canada, issued the logo for Rocket Roger.com web site after performing a web trust audit. In the audit the firm, examined if the business was legitimate, transactions were secure, whether the information collected from the consumers was kept private and whether or not its business practices were fully disclosed (AICPA Press Release 1998).

5. Conclusion

Electronic commerce has transformed the global business scenario by creating a niche market. As more and more people gain access, the number of potential customers will also increase. However most people online have security and privacy concerns in mind and are therefore hesitant in performing commercial transactions online. Therefore while incorporating safeguards in the system the security concerns of businesses have to be in line with those of the customers to increase their confidence.

We recommend a few steps to be acted upon to increase the efficacy of the online businesses:

- The organizations thus have a challenging task of incorporating the e-assurance activity as an integral part of corporate governance and develop assurance strategies to protect customer information and provide transactional integrity and authenticity.
- There is a need on the part of the business organizations to formulate a common protocol and platform to conduct commercial transactions uniformly anywhere in the world, thus enhancing the integrity and credibility of the system.
- The different countries in the world also need to play a responsible role to promote online businesses, as these are the business of the future. They need to play an important role in strengthening the laws and regulations and formulating uniform standards for governing businesses online.

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Application of Structural Equation Modeling in Marketing Research: An Illustration on Service Loyalty Measurement

Duraipandian Israel and Jayaseelan Clement Sudhahar

This article is a non-technical introduction to the use of Structural Equation Modeling or (SEM) in Marketing Research. The application of SEM in business research, s a vigorous technique that encompasses complex Path Analysis, multiple regression and factor analysis for simultaneous consideration of relationship among latent variables has been burgeoning than ever before. SEM has divided two components, namely, measurement model and structural model. Here, the authors present the rudiments of SEM and specify the steps involved in SEM analysis with an illustration that relates the antecedents to the service loyalty construct.

Ever since the publication of book by Joreskog and Sorbom in 1979 on advances in factor analysis and structural equation models, there has been a growing interest among the researchers in different disciplines to make use of the structural equation modeling (SEM) in their research work. Nonetheless, more than other disciplines, the amount of interest shown by researchers in management discipline in the application of SEM is a mammoth one. It has almost become indispensable to apply this technique in the pursuit of gaining acceptability of the manuscripts sent for publications. Despite, researchers acknowledge that SEM is a complex one and requires a lot of pain, especially in running the alternate models endlessly and exhibiting the results in regard to each of the models. While this has been the case in developed countries, it is still pathetic that researchers in developing countries like India scarcely are aware of this so-useful, pertinent and powerful technique for simultaneous analysis of relationships among several constructs in behavioral research. Gone are the days where the complexity of application of this technique was considered high owing to the lack of availability of software, manuals and other literature on this.

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This trend is almost topsy-turvied with volumes of books, articles and software becoming more affordable in recent years.

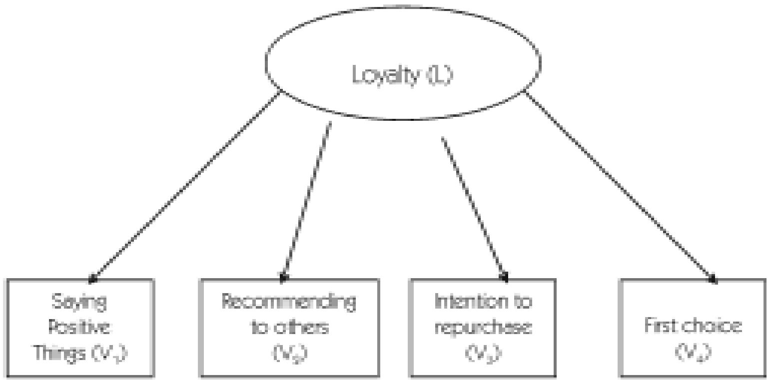
The intention of the authors in this article is to give an orientation to the researchers in the management related disciplines in the application of SEM analysis in their research work to enable them to keep pace with their counterparts in developed nations. First, we will present the basic elements that are involved in the SEM discussion. This will be followed by the steps involved in SEM analysis. Finally, we outline the limiting factors to the application of SEM.

Elements of SEM

SEM is a modeling technique widely used in behavioural research. It is capable of handling a large number of endogenous (dependent or effect) and exogenous (independent or causal) variables that are latents. A latent is the one which cannot be directly observed and therefore needs to be specified through the combinations of observed variables, for example, in services marketing the term loyalty is a construct or a latent which cannot be defined or measures per se. Indeed, different people would define loyalty construct differently. To some, it may mean repeat purchase behaviour, to others it may mean emotional attachment; to still others it will be spreading well word-of-mouth about the service and so on. For the purpose of this discussion, let us assume that the loyalty construct is described in terms of four variables, the values of which can be observed or measured directly. This is graphically shown below.

Figure –1

Components of Loyalty Construct



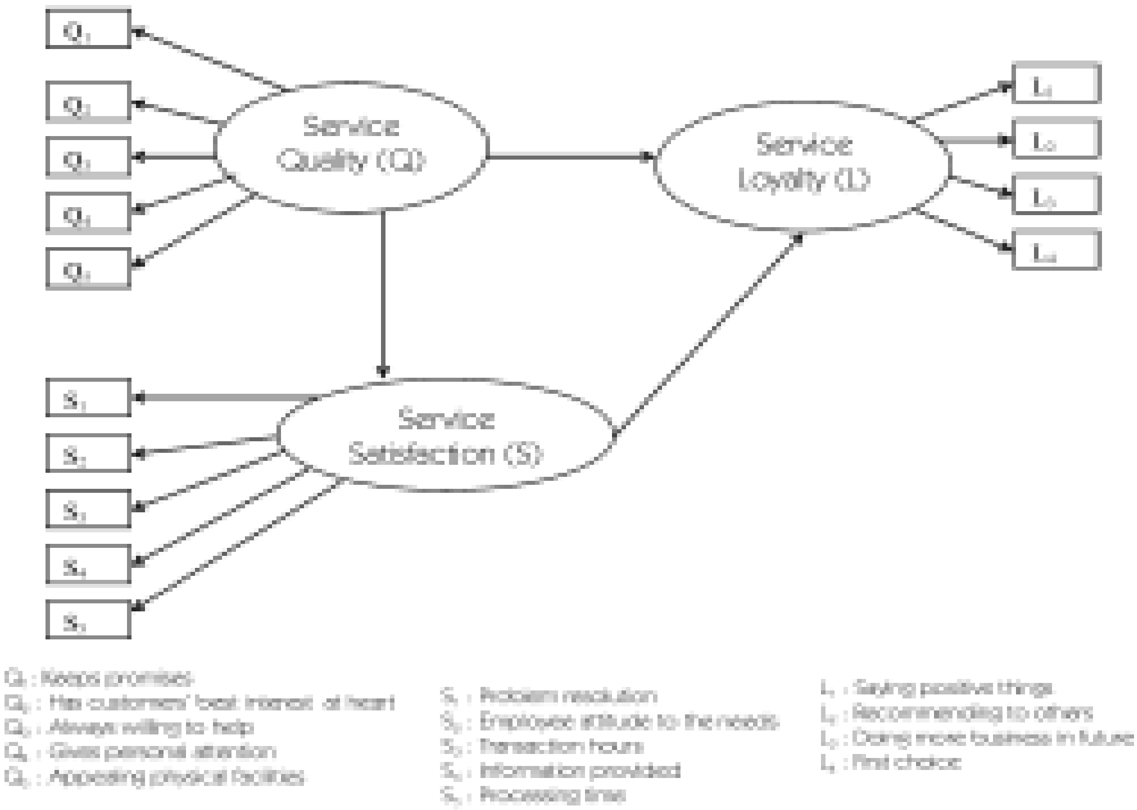
Here, the measures variables V1, V2, V3 and V4 are observed directly and measurable through administering questionnaire. These measured variables are also known as manifest variables or indicator variables. The latent variable 'loyalty (L)' is therefore inferred from the four measured variables. Latent variables are also known as constructs, factors, dimensions or unobserved variables.

Frequently, as researchers it becomes necessary that we have to relate two or more constructs and find the relationships among them. Extending the same example of service loyalty, suppose if it is required that we are to identify the relationship existing among the constructs such as service quality, service satisfaction and service loyalty (as frequently analyzed in the service marketing literature) for a typical retail banking services then the model would look like the one in figure 2.

The model shown in figure – 2 involves analysis of three major aspects: firstly, the variables related with each of the constructs are to be confirmed that they do share variance or relationship with their respective constructs or latent factors. This involves the application of a special type of factor analysis namely, a Confirmatory Factor Analysis (CFA). Secondly, we find in the diagram, the direction of the arrows moving from quality to

Figure – 2

Relationships Among Service Quality, Service Satisfaction and Service Loyalty Constructs



satisfaction, quality to loyalty and satisfaction to loyalty. These arrows indicate the direction and amount of impact of one construct upon the other (i.e., the effect of quality on service satisfaction, quality on service loyalty and like that). These forms of directional relations are generally examined using either a path analysis or regression analysis. However, it should be noted that these path and regression analysis can be used for relating measured or indicator variables only and not the constructs. This is where SEM is considered important in analyzing the relationship among the constructs. Indeed, SEM is a combination of Factor Analysis, Regression Analysis and Path Analysis. Thus, SEM is a new approach to hypothesis testing when we have a number of constructs some of them which are simultaneously treated as both dependent and independent variables in the model [as in the case of figure-2, service satisfaction is a dependent (endogenous) latent variable while it is independent (exogenous) latent variable to service loyalty in the model]. Overall, SEM enables us to test the hypothesized pattern of directional and non-directional linear relationships among a set of measured variables and latent variables in addition to providing the statistical indices for checking the fit of the model.

Advantages of SEM

Even though SEM is a relatively new method, its application is enormous in the discipline of management. The use of SEM is rapidly accelerating due to the availability of user-friendly software such as LISREL (Linear Structural Relationship) and AMOS (Analysis of Moment Structure). Specifically, SEM has the following advantages.

a. Greater flexibility in representing simultaneous analysis of relationship among theoretical constructs. For example, when the same construct happens to be both a predictor and a criterion (as in the service satisfaction [S] construct in figure – 2);

b. Collection of a set of manifest variables to represent a latent construct (as in the case of figure – 2, where three sets of indicators are used to reflect each of the three constructs);

c. Calculation of reliability of each of the latent construct in the model through the elimination of measurement error, which would bias the results;

d. Provision for evaluation, confirmation, modification and comparisons of theoretical models;

e. Visualization of a model by a graphical path diagram; and

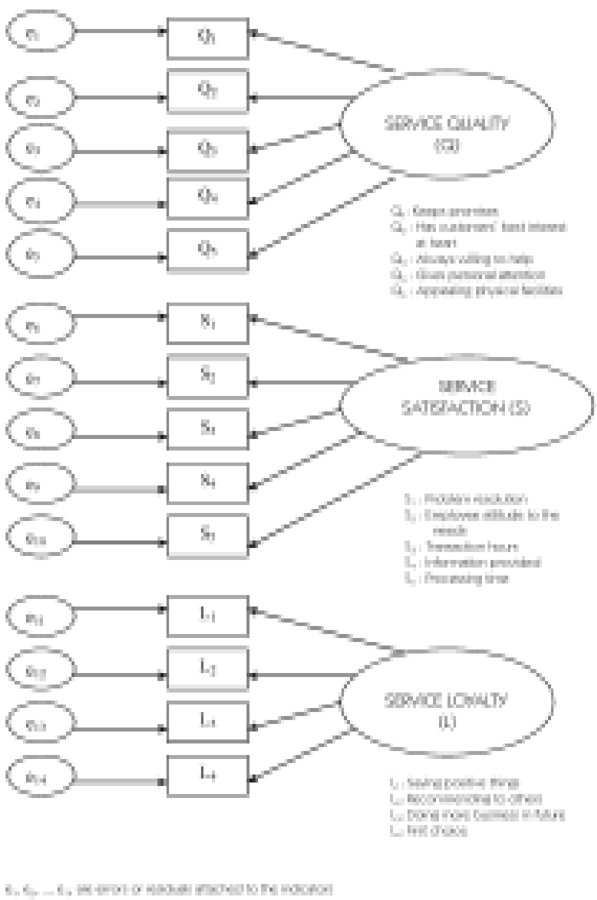
f. Evaluation of the overall model fits in addition to the assessment of strength of relationship among constructs.

Components of Structural Equation Modeling

A SEM is divided into two parts viz., a measurement model and a structural model. The measurement model is used to specify the relationship between observed variables and latent variables. For illustration, based on Figure – 2, a simple measurement model for the three constructs would look like the one in figure – 3.

Figure -3

Measurement Model for Service Quality, Service Satisfaction and Service Loyalty Constructs



$e_1, e_2, \ldots, e_4$ are errors or residuals attached to the indicators

As shown in figure, there are straight arrows from each of the latent constructs to their respective indicators. Each of the arrows from the construct to their observed variables will have a computed coefficient, namely a factor loading (similar to the loading in the exploratory factor analysis) which simply shows the amount of correlation or variance shared by the construct and the indicators.

However, it is a common practice in the measurement component of the SEM to fix one of the indicators (only one) to a value of one. This is technically required to give the construct an interpretable scale. The measurement model also includes an error component to each of the indicator variables. These errors are also known as measurement error factors or uniqueness. This is a distinct feature in SEM analysis as it also considers the error term in the model (it should be noted that neither regression analysis nor path analysis include the error component and to that extent their results are less reliable). Further, the errors or residuals of indicators can be correlated one another which can also be modeled in SEM. In the measurement model, a value of 1 should be obtained by squaring the corresponding factor loadings and similarly squaring uniqueness (error) i.e., (factor loading) 2 + (error) 2 = 1. Similarly, to find out the correlation between any two indicators, simply we need to multiply their respective path coefficient.

While the measurement model coins the indicators to their respective constructs, the structural model links constructs for the empirical test. As described earlier, each endogenous latent variable (an endogenous latent variable or construct is the one with one or more arrows leading into it) is the criterion or dependent variable in the structural equation. For figure 2, three sets of equation will be developed: one, the path between service quality to loyalty; two, the path between service quality to service satisfaction and three, the path between service satisfaction to service loyalty. Thus three structural equations, one each for each path (or endogenous latent variable) are developed. Each structural equation would also include an error term. The impact of an exogenous construct on endogenous construct is measured in terms of standardized regression coefficient, also known as structural or path coefficients, mathematically, $\eta 1 = \gamma_{11} \xi_1 + \gamma_{21}\xi_2 + \delta_1$ where $\eta 1$ = endogenous latent variable, γ_{11} = path coefficient, ξ_1 = exogenous construct and $\delta 1$ = error in the measured variable.

SEM Assumptions and Requirements

Like any other data analytical technique, SEM is no exception to assumptions. The major assumptions of SEM are:

a. Level of measurement of indicator – all four levels of measurement (Nominal, ordinal, interval and ratio scaled) can be used;

b. Either a variance-covariance or correlation date matrix derived from a set of observed or measured variables can be used. But a covariance matrix is preferred. In a nutshell,

$S = \sum$, then model fits the data, where

S = Empirical / observed / sample variance / covariance matrix

$\sum$= Model implied variance / covariance matrix

SEM deals with data in the variance–covariance matrix form as shown below.

	X_1	X_2	y
X_1	Var (X_1)		
X_2	Cov (X_1 X_2)	Var (X_2)	
y	Cov (X_1 Y)	Cov (X_2 Y)	Var (Y)

c. In case correlation matrix is used, the following correlation coefficients are calculated:

a. Product-moment correlation - when both variables are interval

b. Phi-coefficient – when both variables are nominal

c. Tetrachoric coefficient – when both variables are dichotomous.

d. Polychoric coefficient – when both variables are ordinal

e. Point-biserial coefficient- when one variable is interval and the other is dichotomous

f. Poly-serial coefficient – when one variable is ordinal and the other is interval variable.

d. Latent variables (constructs) are smaller that the number of indicators measured variables.

e. Data are normally distributed. Here, the usual univariate normality checks are made by analyzing the skewness and kurtosis of each variable. In case of non-normality, one has to look for outliers and transformation of data. Tests such as Mardia-statistic can be used for checking the multivariate normality of all the variables considered together (Bentler and Wu, 1995). Also Satorra – Bentler statistic (Satorra and Bentler, 1988, 1994) or the use of item parcels (nothing but subscales in the scale) and transformation of non-normal variables (West, Finch and Curran, 1995) can also be adopted.

f. Linearity. SEM assumes a linear relationship among the indicators of measured variables. In case of non-linear relationships, Kenny – Judd Model (Kenny and Judd, 1984) can be endeavoured. A detailed discussion of this is found in Jorekog and Yang's (1996) article.

g. Sample size. A large sample size is required eventhough no consensus has been reached yet on this. For example, Ding, Velicer and Hadow (1995) specify 100 to 150 respondents, while Boomsma (1987) indicates a minimum of 400. Bentler and Chou (1987) stipulate a ratio of five respondents per variable. However, it has been recommended here that any sample size of less than 150 may not produce reliable estimates. When evaluating models that are modified post-hoc, a much larger sample (800 or so) is required (MacCallum, 1986).

h. Stochastic relationship between exogenous and endogenous latent variables. That is, not all of the variation in the dependent variable is accounted for by the independent latent variable (Kunnan, 1998).

SEM Phases in Analysis

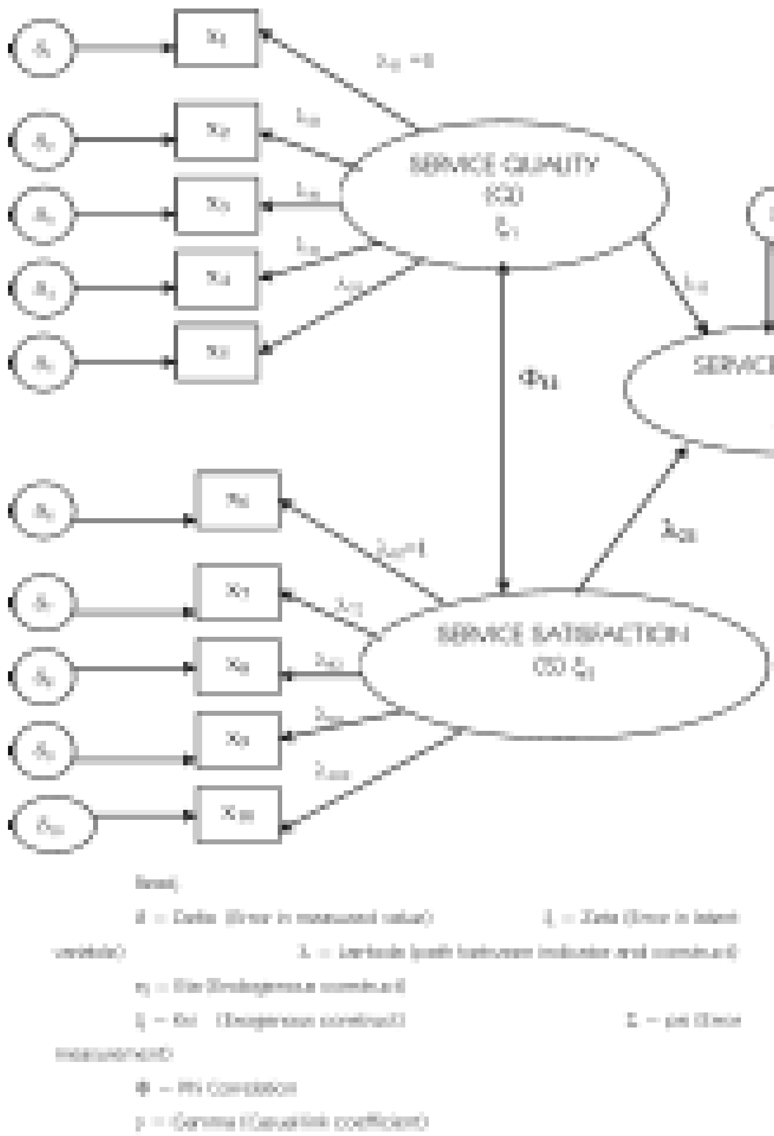
The SEM application involves five phases as stipulated by Bollen and Long (1993). These 5 steps are: Model specification, Model identification, Model estimation, Model testing and Model modification. A succinct of each of these phases is described here.

Model specification. In general, a SEM model is grounded in theoretical justification and includes two components, namely measurement model and structural model. The structural model phase requires us to coin linkages between latent variables (structural model), distinguishing between exogenous and endogenous latent variables and ensuring that no important latent variables is omitted, which will otherwise tantamount to a specification error (which is nothing but a lack of correspondence between the model under study and the true model in the population (Bagozzi, 1980). This stage also requires us to describe the measurement model, which specifies the relationships between measured variables and latent variables. The measured variables are also known as manifest or observed variables and each latent variable will have a set of multiple indicators (Howell, 1987). With regard to number of variables to be included in SEM model, it has been suggested that the SEM model should contain utmost 20 variables with 5 to 6 constructs, each measured by 3 to 4 variables (Bentler and Chou, 1987). In order to understand the model specification, we present a path diagram in Figure – 4. This path diagram is an extension of what was given in figure 2 but represented in a formal SEM notations and standard SEM construction rules.

The below path diagram shows the illustrative model developed previously in the measurement of impact of service quality (Q) and service satisfaction (S) constructs on service loyalty (L) construct purely on Greek notation and model construction requirements for SEM. The path diagram specifies that the entire model is composed of two confirmatory models (one for latent exogenous constructs namely, Q and S and the other for endogenous construct, namely L). Both the exogenous constructs are linked to endogenous constructs by structural equation model: $\eta 1 = \gamma_{11}\xi_1 + \gamma_{21}\xi_2 + \delta_1$.

While in the measurement model, relationship can only be correlational, in a structural model relationships between latent constructs can be directional too. The parameters in the model can be either fixed or free parameters. Each parameter however represents relationship in a model. The fixed parameters are those that are not estimated from the data and are typically fixed at 1. The free parameters will vary depending upon the nature of relationship. In figure 4, we find the parameters x1, x6 and y1 are fixed parameters, and the loading of the measured variables on their respective latent constructs is fixed to 1. These fixed parameters are also known as reference indicators so that, the measurement scale for each latent construct can be set (Kunnan, Figure – 4

Path Diagram for Illustrative SEM Model



δ	=	Delta (Error in measured value)	ξ	=	Zeta (Error in latent variable)
λ	=	Lambda (path between indicator and construct)	η	=	Eta (Endogenous construct)
ξ	=	Ksi (Exogenous construct)	Σ	=	psi (Error measurement)
Φ	=	Phi Correlation			
γ	=	Gamma (Casual link coefficient)			

1998; p.303). The researcher should a priori specify the hypothesis about which pathways are important in the model.

Model Identification

The model identification concerns with the correspondence between the information to be estimated (i.e. free parameters) and the available information (the observed variance-covariance matrix). There are three possible model identification: A model is under-identified if one or more parameters are not estimable from the variance - covariance matrix; a model is just-identified if the number of parameters are estimable from the variance-covariance matrix, and it is over-identified if there are many ways to estimate the parameters (for a detailed description on model identification we refer you to two excellent articles by Kunnan, 1998. Pp.305–306 and Ullman, 1996). Usually, the model is over-identified for all SEM analysis. To illustrate, in Figure – 4, there are 14 indicator variables (5 each for Q and S and 4 for L). Therefore, the number of elements = ½ x 14 (14 + 1) = 105. Therefore, degree of freedom = 73 (that is, 105 being the number of observed variances and covariances) – 14 (being factor loadings) – 14 (being residual variances) – 1 (being correlation between Q and S) – 2 (being a compact of Q on L and S on L)– 1 (being residual variance for L). Hence the illustrated model is an over identified one and can be preceded for SEM analysis.

Model Estimation

In this phase, decision is to be made as to how the parametric value is estimated. At any case, the parameter estimate should endeavour shrinking the discrepancies between the estimated and observed covariance matrix of the measured variables. Several estimation methods are available in any standard SEM software packages. Popular among them are maximum likelihood estimate (MLE) and generalized likelihood estimate (GLE). The MLE is generally considered good for sample size of any, and is robust over GLE even if the multivariate normality is violated. MLE is also a relatively unbiased estimation of path estimates and is not dependent on scale of measurement. The only limitation of MLE is that it underestimates the standard errors associated with parameter estimates (Boomsma, 1983 as cited in Quintana and Maxwell, 1999). However, a number of substitutes to the MLE and GLE have been developed when there are serious departures from normality. Common among them are asymptotic distribution-free (ADF) method and Satorra – Bentler (S-B) correction procedure (Satorra and Bentler, 1988 and 1994).

Model Testing

Here, the model is subjected to fit, which is nothing but ensuring the closeness of observed and model estimated covariance matrices. This is done through computing the global fit indices (GFI), which tell how well the SEM model fits the data. The most common GFIs are chi-square statistic based on MLE, GLE, ADF and S–B estimation methods. Since the scientific hypothesis in SEM is that parameters are truly zero, we should fail to reject the null hypothesis, which indicates the adequacy of model to the observed data. This is paramount to be taken note of. The one limitation of using x^2 as global fit index is it is inflated by a large sample size. Several alternative GFIs are available such as Root – Mean-Square-Error-of-Approximation (RMSEA)(Steiger and Lind, 1980), Comparative Fit Index (CFI) (Bentler, 1990), Root-Mean-Square-Residual (RMSR) (Hu and Bentler, 1995) and Goodness of Fit Index (GFI) developed by Joreskog and Sorebam, 1988. While the values of GFI, CFI, are to be closer to a value of 1 for an acceptable fit of model to the observed data, the RMSEA, RMSR and x^2 values are to be close to 0 (for a detailed discussion on acceptable fit indices in SEM model, we recommend you to the contribution made by Min and Mentzer, 2004).

In regard to evaluating the individual parameters, care should be taken to ensure that the t- statistic for each path coefficient should be significant and the standardized residuals should not be greater than 0.03. As far as the latent variable is concerned, the r^2 value for each endogenous latent variable is to be large.

Model Modification

After the parameters are estimated for the specified model, the model may or may not have the required GFI indices. In cases where GFI indices are not at the recommended level, it would betoken that either the model is mis-specified or has produced biased parameter estimates. In such cases, instead of simply disbanding the model itself, it is better that an endeavour is made to re-specify the model. This involves searching a better fitting model from the estimation obtained in the originally rejected model. However, this new model developed so, should also be considered as tentative unless it is accepted using second model for verification (Diamantopoulos, 1994. p. 123). The model modification or re-specification is done either by adding parameters, or eliminating non significant parameters whose t–values are non significant or by constraining a few parameters to zero. Nonetheless, it is reiterated that theoretical evidence for such addition or deletion of parameters exists. The effect of addition or deletion of parameter on the modified model can be found out by comparing the chi-square value difference of unmodified model and the modified model for a one degree-of-freedom at .05 level of significance. Recent releases of SEM softwares make the model modification task much easier. The SEM output rank-orders listing of existing paths that may be considered for elimination so that the model fit can be improved. Importantly, extreme cautions should be exercised while taking the decision for model modification based on modification indices alone.

Limitations of SEM

Even though SEM offers greater flexibility in representing a variety of theoretical models and relationships among constructs, it is not devoid of criticisms. The following major concerns related to SEM procedures are gleaned from the extant literature. Keeping them in mind will prevent the researcher or theorist in arriving at what is known as misleading observations,

1. The use of SEM is problematic when attempted to interpret the results as evidence of the direction of causality (Quintana and Maxwell, 1999,p.520). Despite the earlier name of casual model, SEM models cannot prove causation; the only thing SEM does is in extending the support whether the model does fit the observed data. Therefore, SEM is basically a model testing procedure instead of model building one.

2. It is also difficult in knowing whether a model is complete or not if the literature is sparse in addressing equivalent or viable models. In simple words, creating an alterative model based on only the model modification-indices in SEM sans theoretical support from the literature for such modification will be a futile exercise.

3. The lack of consensus over guidelines for acceptance of model) such as acceptable fit indices for both the overall model and individual parameters per se), requirement of large sample size for meaningful estimation of parameters, and the multivariate normality assumptions prevent its universal application.

As a final note, it is underscored that the researcher should not plunge into the application of SEM for the research work out of over ambition. Doing so by an unskillful practitioner would damage the latent model testing process.

Conclusion

In conclusion, the authors of this article have endeavoured to orient the SEM concepts and application in marketing research with an illustrated focus on service quality–service satisfaction–service loyalty relationships. Aspects of SEM analysis, namely, establishing a structural model had been outlined in a step-by-step basis. While many more areas such as model validation, boot strapping, jackknife and multilevel models are important in completing the discussion on SEM, it is the desire of the authors that researchers in India have at least woken up now to the use of this widely adopted sophisticated second-generational analytical technique in their pursuit of model building and model testing tasks in different spheres of management discipline. Indeed, it is an enjoyable experience to accomplish this task as numerous easy-to-operate softwares such as LISREL, AMOS are available at an affordable cost in this tech-savvy era.

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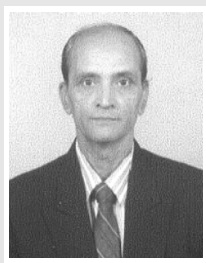
Achieving Improved Performance for Global Competitiveness using Benchmarking Techniques

Sabita Mahapatra and G.C.Mahapatra

Every business, big or small, has been experiencing a threat to survival. Once strong core strengths have vanished , the paradigm pioneers that foresee changes only survive. One of the changing parameters is 'Customer expectations.' Comprehending the nature of the future customer is the starting point in reconfiguration of business tomorrow. The profile and expectation of the customers will determine the products and services. These form the yardsticks for appropriate strategies, systems, processes and technologies in the days yet to come. Benchmarking, an effective tool for evaluating corporate strategy, is essential for the strategic planning process. This article delves deep in analyzing the process of benchmarking for enhancement of strategic business functions to provide a sustainable competitive advantage.

Over-used, but under-understood, the term value-addition is employed to signify the extent to which a company stands ahead of its competitors in the race to satisfy the customer. Ironically, it is confused with the act of improving a product in a way that enables the customer to derive greater satisfaction from it, and, by extension, enables the company to charge a premium.

But, as management professors Adam M. Brandenburger and Barry J. Nalebuff argued in the recent article they published in "Strategy & Business" value addition, viewed in an economic framework, can be used by a company to gauge with micro-precision just how powerful its competitive advantage is, or its core competencies are.



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According to Jon Von Neuman and Oscar Morgenstern, value addition by a particular company is defined as the total value created with that company minus the total value created without the company.

How much value can a company really earn in a dynamic market where competitors, customers and suppliers can enter and exit freely links with the concept of core competencies and competitive advantage as enumerated in FIG 1. The value added by each individual company is low unless its product is differentiated in a way that enables it to charge a lower price. This ability is precisely what strategy guru Michael Porter refers to as competitive advantage.

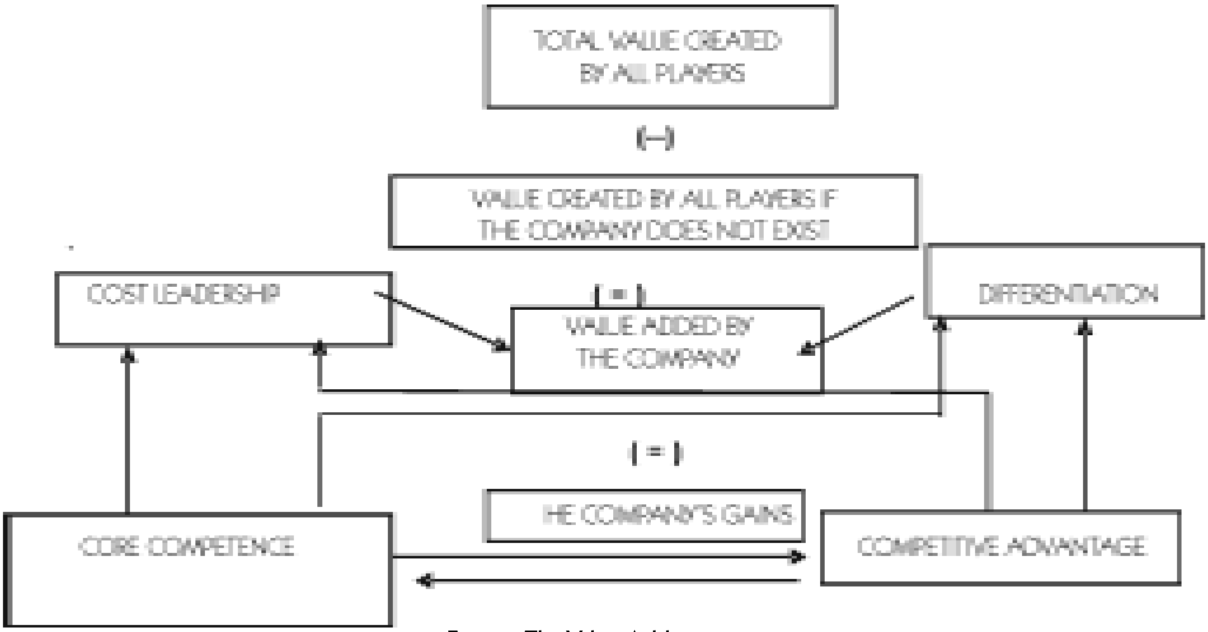


Fig. 1: The Value Addition

Linking this added value backwards to specific core competencies or competitive advantages will enable the company to deduce how effective those skills are proving in securing for it a powerful position in the industry. After all where competition is unfettered, no company can afford to fall back in cost competitiveness and ignore cost leadership.

Amongst the many tools for analysing cost competitiveness and to attain cost leadership, benchmarking has proved to be the most effective one. It is a continuous search for best of the practices for superior product development with competitive cost. The cost leadership is achieved through the core competency and the competitive advantage of the company.

In a competitive business environment, a business organization needs to anticipate many types of changes including shift in customer expectations, emerging out of technological developments, change in customer segments and strategic shifts in the thrusts made by the competitors. For business organizations to create their own successful future, they must learn from their environment - from the best competitors, markets, products, and their processes. The process for doing this is benchmarking - a management tool for search for the best anywhere in the world. It is an important tool for evaluating corporate strategy and is an essential aspect of the strategic planning process. Benchmarking can be used for the enhancement of strategic business function and processes to provide a sustainable competitive advantage.

The key aspects in benchmarking include top-level management support, appropriate and well trained team members, constant communication between involved business units, commitment to change and the development of proper improvement in targets and detailed action plans. It is a process committed to delivering a strategic value to the company and should not be limited to observations but to the generation of course of action.

Amongst the many tools for analysing cost competitiveness and to attain cost leadership, benchmarking has proved to be the most effective one. It is a continuous search for the best of the practices for superior product development with competitive cost. The cost leadership is achieved through the core competency and the competitive advantage of the company.

American Productivity and Quality Centre (APQC) defines benchmarking as "a systematic and continuous measurement process - a process of continuously measuring and comparing an organisation's business process against business process leaders anywhere in the world to gain information which will help the organisation take action to improve its performance."

It is the search for industry's outstanding practices and is an alliance between partners to share information on processes and measures that will stimulates innovative practices and leads to superior performance. It is not only a competitive analysis but also truly a process of organisational learning.

Although benchmarking is a measurement process and results in comparative performance measures, it also describes how exceptional performance is attained. The practice that leads to exceptional performance is called "Enablers." Thus the process of benchmarking results in two types of outputs:

= Benchmarks or measures of comparative performance

= Enablers.

It is expected that all producers will have to offer quality of goods and services ideally suited for any application. Amongst such companies those having cost leadership will only be able to survive. What makes an organization, a cost leader, gets amply revealed by the benchmarking exercise.

The Japanese excel at benchmarking, by exhaustively analysing the best companies in each industry, then continuously improving on their performance until the Japanese products and services become the best.

Benchmarking can be divided into two parts:

i) Practices (process) and

ii) Metrics (measurement)

Benchmarking	
Benchmark	**Benchmark Metrics Practices**
↓	↓
Benchmark "gap"	How to close the "gap"
• How much • Where • When	• Improved Knowledge • Improved Practices • Improved processes

Benchmarking - Practice & Metrics

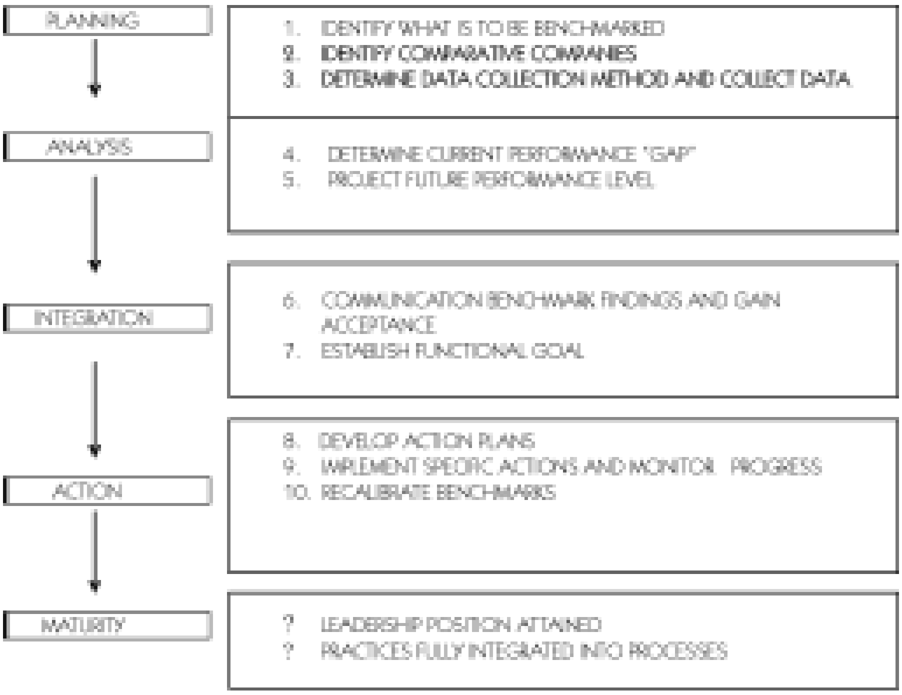
(Practices are the methods used while metrics are the quantified effect)

Practices are defined, as the methods that are used while metrics are the quantified effect or installing the practices. Benchmarking should be approved on the basis of investigating industry practices first. The metrics that quantify the effect of the practices can be synthesized later. The focus of benchmarking is, therefore, on practices. It is only the change of current practices of performing the business processes that overall effectiveness will be achieved. It stresses practices and the understanding of practices before deriving a benchmarking metrics. Benchmarking metrics are seen as a result of understanding best practices, not something that can be quantified first and understand later.

Benchmarking - Process

The benchmarking process followed worldwide, is summarized in Table below

PLANNING ↓	1. IDENTIFY WHAT IS TO BE BENCHMARKED 2. IDENTIFY COMPARATIVE COMPANIES 3. DETERMINE DATA COLLECTION METHOD AND COLLECT DATA



The Benchmarking Process

Steps of Benchmarking

The technique of benchmarking can be used to set parameters on which to measure competitive position, establish the capability gap and design plans to close the gap. The main steps in a benchmarking exercise are: Plan, Measure, Analyse & Implement.

STEP 1: The first step is to answer two fundamental questions:

~ What should be benchmarked?

~ With whom to be benchmarked?

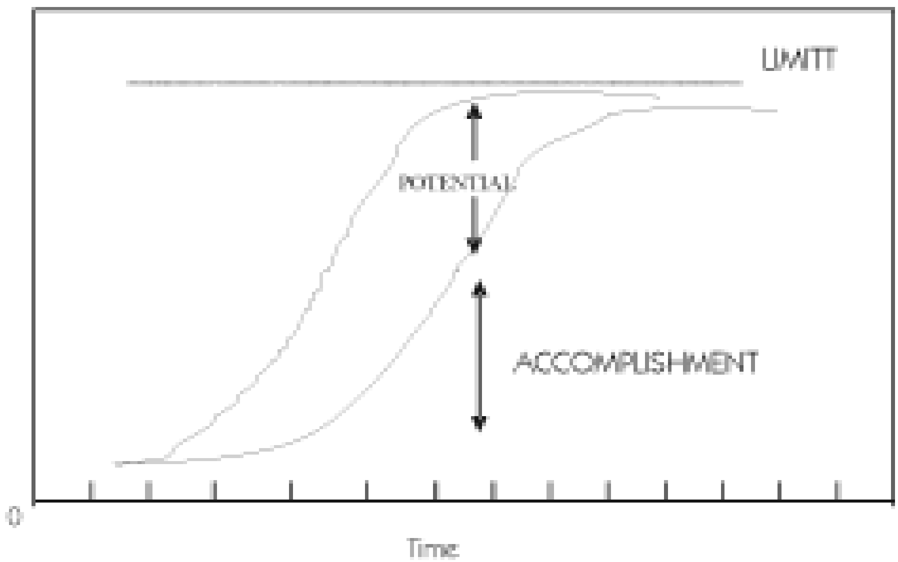
STEP 2: The second step in cost benchmarking is to conduct cost research by analyzing data from the published and acquired work about the industry leaders. It is important to learn as much as possible before making any direct contact.

STEP 3: The third step in benchmarking is analysis of gathered data to determine shortcomings and ways to achieve the No. 1 position. The purpose of the benchmarking study should be to understand the reasons for this, and to determine the 'enablers' for achieving most competitive final cost.

STEP 4: The fourth and final step in benchmarking involves the adaptation, improvement and implementation of appropriate enabling process. The objective of benchmarking is to change an organization in a way that enhances its cost effectiveness. Thus, benchmarking is a process with a built-in bias for action; it goes beyond just conducting a business process study or obtaining a relative measure of business performance.

For each product of process, there is a limit to possible improvement. As we approach the limit, the effort required for a marginal gain shoots up which in fact follows the law of diminishing marginal return. This is represented by a S - shaped curve (FIG. 2) characteristic to the typical process. It is important to know ones' position on the S curve to determine whether a technological shift is required. As Foster [1] concludes that a technology change results in jump from one S curve to another S curve.

Fig. 2 **Technology Maturity Curve**



In summarization, the benchmarking process can be expressed as a 2 X 2 matrix depicting a continuous correlation exercise of input and output of self and that of the industry leader, as shown in FIG 3.

Benchmarking Template

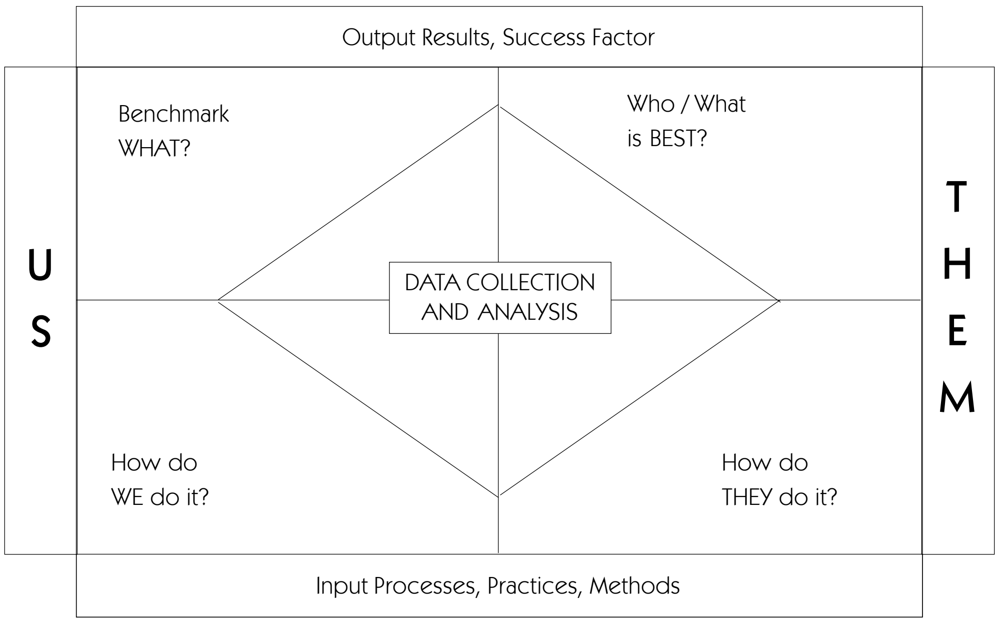


Fig. 3

The final process of drawing an action plan for closing the gap, and further to achieve the leadership status, is shown in Figure 4.

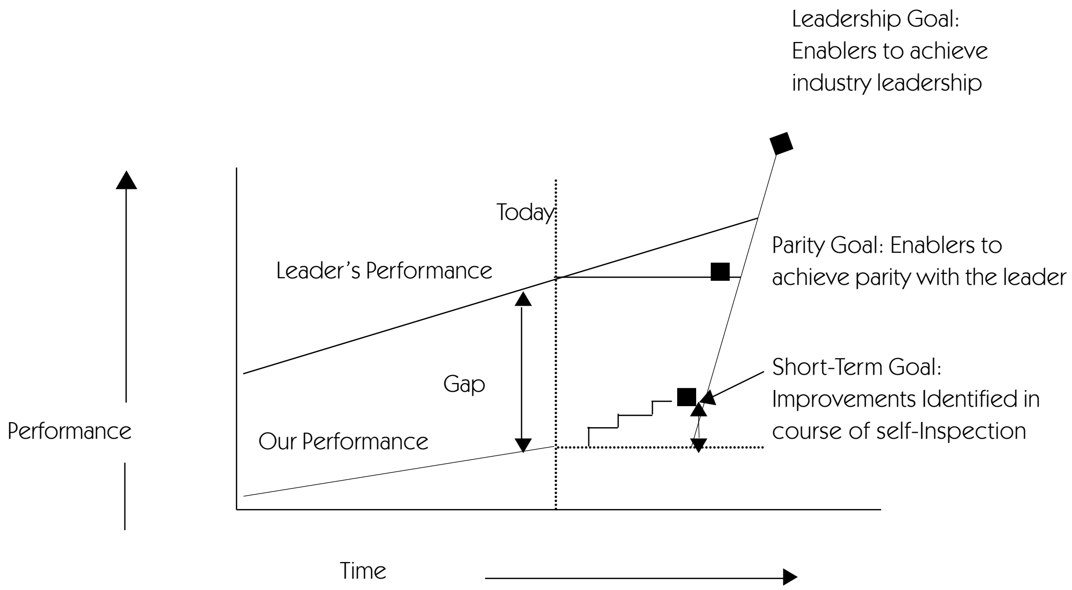
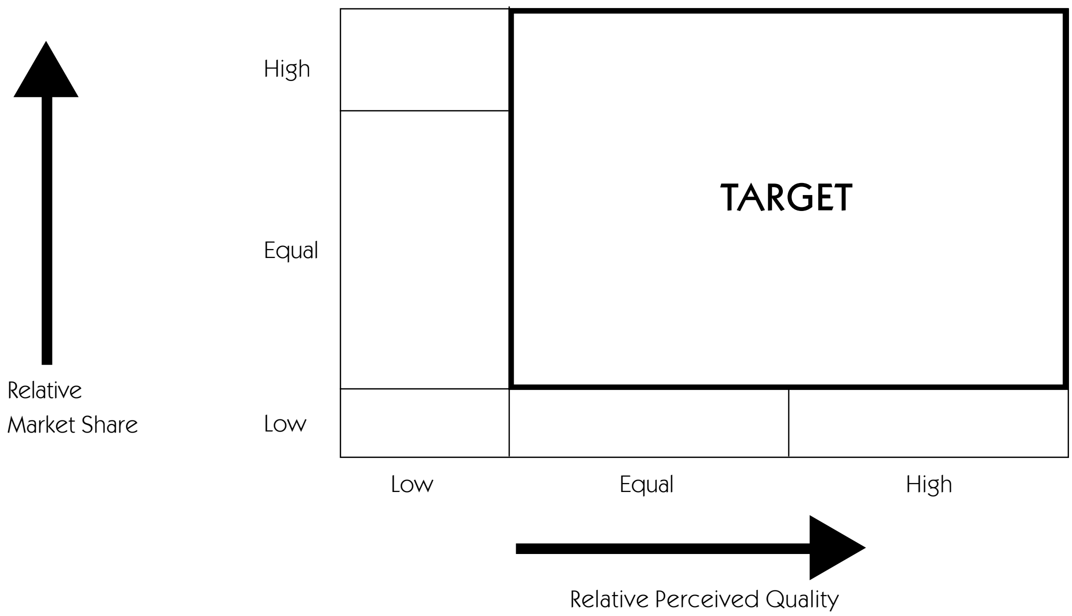


Fig. 4

Exploring Competitiveness

The three legs of competitiveness are quality beyond competitors, technology before competitors and delivered costs below competitors. Cost benchmarking is the prime tool for achieving success on the last factor. One of the two important strategic issues is the decision about product positioning based on the core competencies and contributions obtainable through competitive advantage.

Buzzell & Gale [2] have observed that market share is mainly driven by relative perceived quality. When both relative perceived quality and relative market share are high, as shown in matrix below, competitiveness is assured.



Higher perceived quality enables the organization to command higher prices while achieving comparable or more favourable cost structures. Relative perceived quality is not the same as product quality or conformance to the design specifications. It is quality from the customer's perspective relative to alternatives in the market. This perception is the result of the satisfaction of customer's requirement. Organizations have to anticipate and exceed the expectations of their customers. This is enabled by strong product quality in respect of its final use, effective cost management resulting in better value chain achievement, innovative technology targeted to customer needs, responsive delivery of service and the rapid resolution of issues.

The most important factor for the organizations striving for achieving a superior perceived quality is to be able to earn a high level of contribution, i.e. the Net Realization in excess of the Variable Cost.

Strategic Decisions

The strategic decision obtained through cost benchmarking is about the niche products and the preferred market place. These have to be determined based on process capabilities and market vicinity. Having decided about these two, one needs to find out:

i) Competitors producing the niche products with lowest cost and with highest quality.

ii) Emerging producers intending to set up facilities with better technologies.

Further steps would include:

i) To analyse the position on quality compared to that of competitors and to determine the scope for improvements. This involves comparison of

a) The product process itself.

b) The operating parameters with an understanding of their impact on the quality of the final product.

c) Various input materials.

d) Relevant quality parameters of input materials.

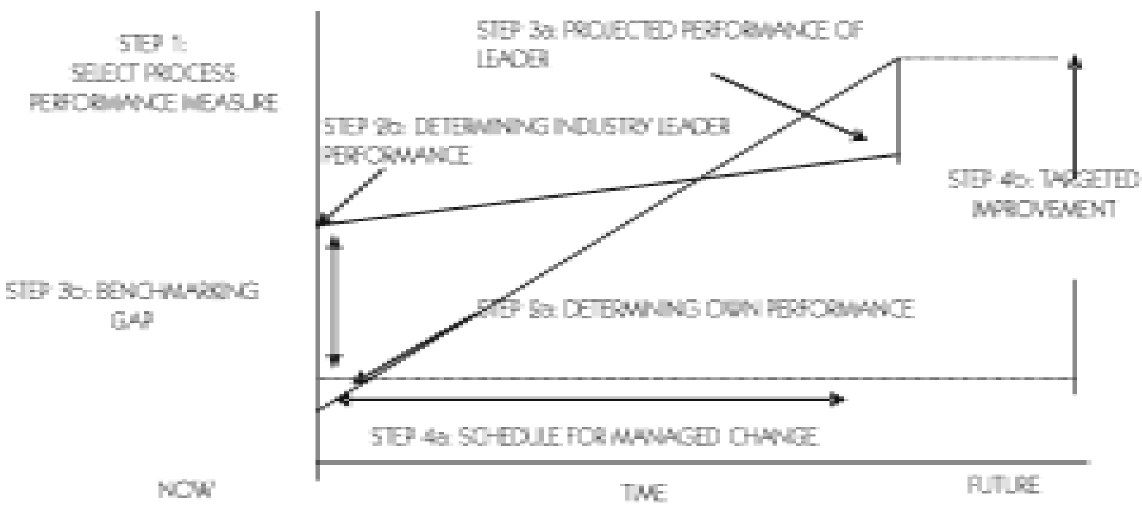
ii) The cost needs to be broken into elements to have the stage wise comparison. This comparison would include the cost per unit of the element and the proportion of these elements in the total cost.

iii) Finally, to establish a balance between cost and quality to arrive at an action oriented plan, may even mean such strategic decisions like hanging the process itself.

Target Benchmark and Performance Gap Analysis

The four steps of benchmarking results in a "gap analysis." This indicates the performance differential between the leading company and the benchmarking company. Gap analysis is key to identifying companies for business practice emulation. FIG. 5 shows, how a gap analysis chart is constructed from the output of each of the four steps in the benchmarking process for a two-company competition.

Action Plan for closing the Gap



The first step in gap analysis identifies the process performance measures. The second step identifies both, own company's performance and the performance of the industry leader. The third step indicates the magnitude of the performance gap between own company and the current time, as well as the performance trend of the leading company as projected to the planning horizon and thus, the magnitude of improvement of the process at the end of the planning horizon and thus, the magnitude of improvement that the company has selected towards becoming the "benchmark" for this process relative to its partner company. As shown in FIG. 5, the three goals are:

a) SHORT TERM GOAL: This is established by the improvements identified during the course of self-inspection of the company's process.

b) PARITY GOAL: This can be established by applying the observations from the benchmarking partner's enablers.

c) LEADERSHIP GOAL: It is stretch goal that requires improvement beyond that observed at other companies. This type of goal becomes possible by integrating lessons from several companies and seeking to apply these lessons synergistically, to create a process that goes beyond the processes observed at other companies.

Cost - Process Parameters and Practices

Enablers

The goal of this step is to identify adaptable activities for achieving higher levels of performance. Process measures are used to identify the relative performance gap between own company and that of the process leader. Some specific activities are determined to raise the performance levels.

Critical Success Factors (CSF)

CSFs are those conditions, or variables that have direct influence on performance levels and are critical to the success of the business process. These factors represent measurable or observable aspects of business processes, which, when performed well, result in the continuing growth and success of business. In short, they are the critical few factors that have the most impact across the entire business system. Examples of critical success factors include: cost management, product quality, product design features and company image. To determine its critical success factors, a company must identify those process parameters that measure performance of core business.

Conclusion

The process of benchmarking combines introspection with retrospection. It is essential for understanding the strengths and weaknesses, with respect to the world leaders, in the field. Simultaneously, it helps the process analysts, designers and operators in identifying process changes and other such steps, which would enable the organisation to attain the most competitive status and remain at peak.

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Transformational Leadership and the Service Probabilistic Orientation of Personality Development Linkage and the Bhagavad-Gita Philosophy

Biswajit Satpathy

The author in his study aims at exploring the contribution of the Bhagavad-Gita on the probabilistic orientation of the personality development. Depending on the results of a survey conducted in order to get an idea about the relationship between the Bhagavad-Gita philosophy and personality development of executives, the study concentrates on the attitude, perceptions, views and ideas of executives upon the success or failure of any event. The finds conclude that the probabilistic orientation of personality development for executives is greatly influenced by the Bhagavad-Gita philosophy.

Personality as the distinctive pattern of behaviour including temperament, emotion, and thought that characterize an individual's adaptations to his or her life has always attracted the attention of researchers (Brody, 1988; Hall and Lindzey, 1970). As a relatively long enduring pattern of behaviour and consciousness personality seems to influence the cognition, conation and affection in an individual. Personality is the embodiment of the physique, the mind, the vital, the level of individual consciousness and the spiritual consciousness one has imbibed into one's style of life (Dalal, 1987; 1992; 2000).

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The elegance of the pattern of personality of an individual is contingent upon the pieces of the mosaic of individual traits that were selected and the organization that has gone into making the pattern. Traits remain the building blocks of personality and the edifice we see is the result of the architecture that has gone into its construction. The choice of the blocks and the organization forced on them succinctly constitute the type of personality manifested in an individual. Allport (1937; 1961) has elucidated the ordinal and cardinal traits that make up the personality. Later psychologists like Guilford (1959), Eysenck (1953; 1985) and Cattell (1946; 1957; 1966; 1990) have elaborated on the factors constituting personality types. Kelly (1955) has elaborated the significance of the constructs adopted by an individual in cognizing his environment which provide the pivot around which the personality of an individual revolves. Adler's original German term Gemeinshafts–gefuhl emphasizes social interest—a striving for perfection in reaching the ideal self in terms of caring and sharing for and with other human beings (Adler, 1929). The Adlerian concept of social interest is akin to the concept of transcendence of Jung (1934) and may be considered a fiat of the concept of self-actualization. Rogers (1980) has built his concept of personality around self-concepts. Maslow (1968; 1970) has shown the role played by security enjoyed by the self in constituting the motivational pyramid of personality. Thus orientation of personality circles around the seminal concepts adopted in the constructs used by the individual in his relationship with the psycho-socio environment. Learning theorists have shown that once a pattern is set in, it is likely that it will be further reinforced through learning principles. This gives rise to the relatively long enduring nature of personality of individuals and thus continues the teleonomy of self.

Classical psychologists identify the nature of personalities in terms of their typical orientations, which revolve around the stages of development (Erikson, 1963; 1968). Furthering the thinking of Freud (1925; 1966), has discovered the existence of personality orientation in terms of mode of reacting to the environment (Stagner and Karwoski, 1952). Jung (1923) has identified personality orientation in terms of thinking-intuition and outgoing-inner directedness. The Jungian classification of personality orientation still finds its use in the applied field (Briggs, 1962). The attempt to identify the orientation of individuals in terms of Internal and External Locus of Control has also gained wide acceptance among psychologists (Rotter, 1966; Lefcourt, 1982). Personality orientations are also interpretable in terms of operant learning (Skinner, 1938; 1953). Tolman (1948), Lewin (1936) and Hebb (1952) have emphasized that there is a selective central inhibitory mechanism, which might operate to filter sensory impulses. Information processing by the organism explains the teleology of personality in terms of self.

The Teleology of the self

The developing human organism tries to establish autonomy from genetically determined instructions by evolving the system of self. The function of the self is to mediate between genetic instructions or instinctual drives and cultural instructions or norms and rules. To achieve this function the organism needs to develop another system of consciousness. Consciousness compasses three functional subsystems: attention, awareness and memory. The content of consciousness is the sum of all the information that enters it, and its interpretation by awareness.

At a certain point in development the organism learns to direct attention, thinking, feeling, willing and remembrance. At that point of time the self evolves within awareness. The self becomes an epicycle of the phenomenon of conscious processes as a result of consciousness becoming aware of itself. Eventually the scope of self extends to cover the entirety of consciousness, and the self ultimately transforms itself into the symbol that stands for the full range of individual conscious processes.

In order to survive, the self-established in consciousness directs attention, awareness and memory towards those states which are congruent with itself and eliminates all those that are incongruent or thwarting. When the self within itself achieves harmony there is the condition of optimal experience or flow (Csikszenthmihalyi and Csikszenthmihalyi, 1993). Such an experience connotes to the subjective conditions of pleasure, happiness, satisfaction, and enjoyment.

The Construct of the Probabilistic Orientation in the Bhagavad-Gita

It is seen that an attempt has been made in ancient Indian literatures to describe personality by invoking an indigenous construct, the Probabilistic Orientation. The Bhagavad-Gita has rendered an account of this description. Let us examine whether the human being alone is responsible for his actions and their consequences. Human beings are in a position to function more independently than the other animals, plants and the inanimate objects. There is no free will for animals and other inanimate objects. But the human beings have free will and intelligence and are uniquely privileged to act independently where as Nature controls the act of others. Actions like eating, sleeping, sex and urge to protect the self are common to all animals including human beings. These are the action governed by the Nature. However the human beings have the inherent capacity to perform the actions without being controlled by the basic urges. His will power and intelligence gives him the ability to understand, analyze, and control the motivations, desire, thoughts, and emotions that are finally translated into action. He has the power to change the course of the whole chain of events from motivation to desire to thought to action. He can be aware of each aspect of the process that leads him to act, and with proper training he can modify any part of it. Even though he uses his inherent capacity to regulate and modify his actions, the human being is not really the actual doer of his actions. All actions are actually performed by the governing nature of the universe, called the Prakriti. The real self the Atma remains unattached and unaffected by the actions performed by the human being. It is the ego or the I ness of men that leads to think and feel that he is the doer or performer of the actions, and that he has the right to the results of his actions. One's false sense of doing and reaping the consequences of his actions leads him to suffer on account of his self-created misery. So one's ego must be purified and trained not to identify oneself as the doer but to remain as a silent observer of the action actually done by the eternal, immortal and splendid Nature that is not in control of the human beings.

The ego is the representative of our real self the Atma. When the person becomes egoistic he forgets that the ego is only the representative of the real self and he suffers from the illusion of doer of an action and reaps the consequences of his false notion. The egoistic man looses control over his mind (Manas) and his perceptions and conceptions become wrong. Control of egoistic behaviour is with in the control of men and can be termed as an internal force but the Nature is outside the control of men so it can be termed as an external force in the theory of probabilistic orientation. All human beings are governed by the three gunas Sattva, Rajas, and Tamas. Prakriti has also these gunas or qualities but when one of them becomes predominant, one's actions takes the quality of that predominant guna. No one can remain without performing action, so one has to train his mind to perform his action in tranquility so that all his action becomes dominant of sattvic guna or quality. Sattvic actions are conducted when some one does a work being devoid of ego, his false identification (Chapter III, Verse 27 and 28).

The chapter XVI gives a full account of the destiny of a sage and of an ignorant. It says that for one's overall development and to reduce the probability of failure in one's endeavour, it is important to cultivate the qualities that, makes one's path easy and smooth. Without certain qualities the stumbling blocks, obstacles, and barriers cannot be removed. For some the path is clear, but for others it is full of obstructions. Those who are endowed with good qualities find their path easy, whereas those who do not cultivate good qualities constantly create difficulties for themselves. The Lord says to Arjuna that," The divine wealth leads to freedom; the demonic way is known to lead to bondage. Grieve not; you are born to divine wealth, O Pandava" (Chapter XVI- 5). The Bhagavad-Gita again says in the chapter XVI verse 21and 22 of that, " This is the three fold gate of hell that destroys one's self: passion, anger and greed. Therefore one should give up these three. One freed from these three gates of darkness, O son of Kunti, one conducts oneself towards benefaction of the self and thereby reaches the highest state." For one's overall development one has to put sincere efforts and such efforts put by the individuals are termed as internal forces in the theory of probabilistic orientation.

The external forces are those forces or factors that are not within the control of the individual such an external force is termed as Nature by the Bhagavad-Gita. In chapter III verse 27, the Bhagavad-Gita refers to this external force that, governs the action of an individual as 'Prakriti'. It says that all actions are being performed by the modes of 'Prakriti'. Verse 6 of chapter IX says that as the mighty wind, moving every where, rests in 'Akash' the sky, even so, know you, all beings rest in Me. The next two verses of the same chapter tell that all the creatures are governed though 'Prakriti' (Nature) and Lord says the forces of Prakriti is under His control, so He has said My 'Prakriti'. The fool, whose mind is deluded by egoism thinks: "I am the doer." From this it can be assumed that the Bhagavad-Gita believes in an external force that governs the fate of an action. Arjuna was taught the philosophy of karma in chapter II. The Lord says, 'Arjuna you are not the doer, the doer is Me you are just a medium. You are performing your action because of your previous actions. The fruit you get here, is because of the impressions you have created for yourself'. Again in chapter XVIII the Lord says, the factors operating towards the accomplishment of actions are five in number. They are the seat of action and the agent, the organs of different kinds, separate movements of divergent types and the fifth one is Daiva or destiny. Notwithstanding this, however, he who, having an impure mind, regards the absolute, taintless Self-alone as the doer, that man of perverse understanding does not view aright (Verse 14 and 16). The Bhagavad-Gita has clearly emancipated the theory of Probabilistic nature of the occurrence of the result for an action performed by an individual. According to the Bhagavad-Gita both the doer and the Daiva or destiny are responsible for the outcome of an action.

The construct used to differentiate people in their personality is labeled as the probabilistic orientation. The term connotes a set of beliefs and convictions regarding the probable nature of events. The probability characteristics of events owe their origin to an ever-evolving Nature, which is set in evolution. The reality one can experience is of a transient fleet of events unfolding them as programmed by the evolutionary nature of Nature. Evolution determines the probability distribution of events through stochastic principles.

An individual has neither absolute freedom nor is bound by a holistic bondage. Forces within (internal) and forces without (external) in every action of men exert a dynamic friction. Individual efforts can motivate one's action. But, the limitation of its effect is determined by the probability of success stemming from the stochastic process governing the forces involved in the action.

For example, the freedom and bondage available to the sailor while sailing down a river at any point of time is dynamically determined by internal and external forces—internal contingent on physical and subjective resources of the sailor and external dependent upon the velocity of the wind, the power of the water currents, etc. Such a balancing of forces within and without occurs constantly due to the ongoing process of evolution and such frictions are never inimical to anyone in particular at any point of time.

The Bhagavad-Gita adds this truth into our basic perspective as a basic stance of our thinking, willing and feeling, we can thus derive the following inferences. And, these inferences reinforce our perspective, installing in us the probabilistic orientation.

1. We regard every one as our kith and kin. Because we are convinced that no one can do good or inflict harm to us since every event is but a derivation from a random phenomenon conceived in the process of evolution.
2. We do believe that natural processes mediate the sources of sickness and the capacity for convalescence from the sickness. These processes are just but natural phenomena and are not inimical to any one in particular.
3. We do not consider death as anything strange or new. There is nothing new in death, which is again a natural event.

Since we are given to the above convictions, we do not rejoice life as sweet nor despise life as sour due to stress and strain. We do not wonder at any one for achieving greatness nor would we look down upon the small who are weak and meek. Since each one rises to his station due to natural processes over which no one has any simple and direct control or mastery.

The Phenomenological Orientation

The oriental thinking on personality outlined above has been developed on an ideographic phenomenological premise. This approach appreciates the phenomena of personality as based on rigorous appreciation of experiential facts structured by the application of logic and dissection through intuition. The module of personality developed seems to have effectively put forth a valid conception of personality orientation.

The probabilistic orientation refers to the typical orientation of personality of an individual. Under this orientation the individual has a unique orientation of his consciousness. The consciousness of the individual is focused on an idiosyncratic perspective. This perspective has its deep roots in an extended awareness. Such awareness transcends ordinary sensory experience. Under the probabilistic orientation an individual has a keen awareness about the character of Nature. He is aware that Nature is given to constant evolution. He understands that Nature acts as a dynamic system at a given point of time. Any event in Nature at a particular point of time is a random occurrence subject to its stochastic framework. Hence every outcome in Nature is unbiased to any individual.

The evolution of Nature adheres to a stochastic process. The occurrence of events and their outcomes assume different probability distributions as a function of time. Each set of probability distribution is derived from the probability distribution of its previous set of events. Hence, a system contingent upon the existence of an earlier system from which it evolved prevails at every point of time. The nature of the probability governing various networks of events defining and governing such a system also adhere to the probabilistic nature of the distribution it has derived from its predecessor. An individual cannot induce any change all of a sudden in a system, since it has already been set within definite probability distributions. But, it is still possible to introduce a subtle change in the course of the system so that when the change thus introduced has gained momentum, the subsequent probability distribution characteristic of the system also may change.

This is exemplified by the metaphor of "sailing through." When a person sails in a boat the freedom available to the man sailing the boat is completely under the control of the ecosystem governing the currents of the river. Yet, a sailor may actuate the boat to go against cross currents by his efforts. The sailor is both under the limitations placed on him by the ecosystem and at the same time he can sail through, oaring with all his might. Thus the bondage and freedom hangs on the hinges of probabilities. There is a dynamic interrelationship between his limitations and assets. This interpretation of the scope and limitation of a sailor has been lucidly discussed by Acharya Vinoba Bhave in his discourse on the Bhagavad-Gita.

The summum bonum of the probabilistic orientation is the appreciation of the fact that the dynamic system of the universe is constantly unfolding itself adhering to stochastic principles and consequently, the individual events and contingencies of "events remain unbiased and are not prejudiced in favour of or against any individual at any point of time. There is unbiasedness of individual events and contingencies. An individual who is given to the probabilistic orientation looks at all outcomes with equanimity. He does not resist or instantly accept anything based on any compulsion or obsession due to his complexes resulting from what he already believes and trusts. He does not attach any value judgment regarding the outcome. The probabilistic orientation may be regarded as the sine qua non in the personality orientation of highly evolved individuals.

Often belief in fate is confused with probabilistic orientation. It should be noted at the outset that a probabilistic orientation does not reflect fatalistic belief. The latter suggests that one's life is sealed by fate and has no scope for personal freedom while the former perceives the constraints placed on an individual as not cast in a sealed rigid frame, but spinning in a dynamic and constantly evolving framework. Perhaps, it is the stochastic principles that are duly taken into account in perceiving the constraints that, distinguishes probabilistic orientation from fatalistic orientation. A single intervention at one point of time might not be adequate enough to bring any visibly impressive effect in the system; but, nonetheless, the system is responding to every attack on it in subtle terms. Every attempt will initiate a stochastic process and tilt the system and thereby ultimately lead to perceptible change in the system itself in the long run.

Probabilistic orientation can also be distinguished from Internal/ External orientation (Lefcourt, 1983). While internal and external locus of control locates one's control inside and outside the person involved, the probabilistic orientation locates the locus of control on the basis of the dynamic balance resulting from both the inner and outer forces at a given point of time. Neither the internal nor the external locus can be valid in deciding the effectiveness of functioning. Sometimes the internal forces may be powerful enough to overcome the external forces standing barrier for a course of action, and vice versa. The probabilities attached to the stakes involved ultimately decide the success or otherwise of a course of action. The proponents of internal and external locus of control argue that the man is either free or bound in bondage. The advocates of the probabilistic orientation contend that man is neither free nor bound; he is free to a certain degree and bound to environmental forces to a certain degree and the exact degree of freedom and bondage depends upon the system characteristics evolved through a dynamic perpetually stochastic process. Probabilistic orientation and Internal and External Locus of control have an interesting and complex relationship as found among adolescent boys and girls (Narayanan and Venkatapathy, 1984).

Probabilistic Orientation, Mental Health and Transformational Leadership

Mental health may be conceived as the quality of adjustment an individual consistently exercises and maintains on the basis of plans of his life space—that is self, others, environment and life—in order to achieve certain outcomes. Acceptance of oneself, self-insight, self-identity, self-responsibility and confidence and trust in one's self connote the self - dimension of mental health. Acceptance of others, warm and genuine relating to others, absence of manipulation of others, ability to give and receive, and the ability to experience affection and love constitute another dimension of mental health as relating to others. Having an objective perception of reality, personal freedom, healthy nonconformity, openness to all experience and autonomous functioning refer to yet another dimension of mental health relating to environment. Spontaneous, free and natural living, living in the here and now, living for meaning with refined values, creativity & revelation of one's potential and life-satisfaction constitutes the last dimension of mental health.

According to Bass (1985),"Transformational leadership augments transactional management to achieve higher levels of subordinate performance with the primary difference residing in the process by which the leader motivates subordinates and in the types of goals set " (Lowe & Kroeck, 1996, p. 386). To maximize the quality of the leader-follower transaction, the follower must feel valued by the leader and must feel that he or she has a sense of ownership in the work being done (Avolio, 1999). Transformational leaders believe that it is important to focus on developing individuals, not simply ensuring that specific performance goals are met. The unique nature of the leader-follower relationship is the basis from which followers are ultimately able to take on leadership roles of their own, and in so doing, transform their organizations (Bass & Avolio, 1994). Idealized Influence as shown by transformational leaders is possible only when one accepts oneself and has self-insight, self-identity, self-responsibility, confidence and trust in one's self. Acceptance of others, warm and genuine feeling towards others, absence of manipulating attitude for others, ability to give and receive, and the ability to experience affection and love is also very much needed for Individual consideration. Objectivity in perception of reality, personal freedom, healthy nonconformity, openness to all experience and autonomous functioning is highly essential for Inspirational motivation. Spontaneous, free and natural living, living in the here and now, living for meaning with refined values, creativity & revelation of one's potential and life-satisfaction constitutes the dimensions for Intellectual stimulation. The dimensions of mental health are closely related with the dimensions of Transformational leadership.

Priya (1997) studied the mental health of a large sample of women college students using the Probabilistic Orientation Questionnaire and the Mental Health Questionnaire (Augustine, 1978) and related it to probabilistic orientation. The findings of her study reveal that subjects with a high degree of probabilistic orientation have a greater degree of mental health and as for our discussion we can infer from this result that high degree of probabilistic orientation have a greater degree of Transformational leadership quality with in an individual.

Factors constituting the Probabilistic Orientation

Narayanan (1977) finding the probabilistic orientation to be a seminal construct orienting personality of individuals in the Indian culture has attempted to empirically verify the existence of the orientation among individuals and to validate the hypotheses that could be derived with regard to the probabilistic orientation among people. Narayanan and his coworkers have been endeavouring to map the features of probabilistic orientation by undertaking research for more than two decades in the past and a considerable literature has thus evolved on the probabilistic orientation.

Appreciating probabilistic orientation as one of the dominant features of Indian Culture, Narayanan developed a questionnaire purporting to obtain a measure of probabilistic orientation. The questionnaire contains thirty items in the form of general statements, which can be endorsed or rejected by the respondent answering the questionnaire as applicable to him or not. A factor analysis of the responses of a large group of elders to the Probabilistic Orientation Questionnaire has yielded seven factors to constitute probabilistic orientation (Narayanan, 1977,1993).

Factor-I is labeled Unbounded Expectancy. This factor stresses that goodness or meanness of thought by itself cannot influence the course of action: predictions are not influenced by stature of a person; status is not a permanent state; stature of a judge need not assure soundness of his judgment; failure and success are not consistent in time; and nature does not have any bias.

Factor-II is recognized as Sensing Unlimited Possibilities. This factor emphasizes that it is not possible to enumerate all the possibilities and predict. Experience of the past like success or failure, or even the behaviour pattern reviewed from research shall not lead to certainty in prediction and solutions may emerge spontaneously themselves.

Factor-III is found to refer Insight into Bias. This emphasizes chance, spontaneity and unbiasedness of nature.

Factor-IV is distinguished as pertaining to Healthy Skepticism and this suggests that an attitude for scientific invention tempered with skepticism is a healthy attitude.

Factor-V is regarded as Unconditional Acceptance, which stresses acceptance of happenings without prejudice and not labeling anything as good or bad.

Factor-VI is Appreciation of Chance and this highlights the role of chance and an appreciation of the fact that chance works more than human effort but chances of achievement can be improved by better efforts.

Factor-VII is identified as Awareness of Predictability, which emphasizes the awareness of the possibility of prediction even in cases where it is difficult to make any.

The pattern of factors identified seems to be connoting a simple parsimonious and elegant structure of the probabilistic orientation. Succinctly, when an individual does not himself restrict his range of expectancy, is given to sensing unlimited possibilities available to him in the world, has insight into his sources of biases and prejudices, shows a tendency for unconditional acceptance of events and happenings, can appreciate chances and serendipity, and is aware of the scope for predictability of events within limits, then he is given to a probabilistic orientation.

Probabilistic orientation being an elegant way of making adjustment might be expected to contribute to fostering mental health positively and also by avoiding negative symptoms it may provide a better ground for transformational leadership practices. The probabilistic orientation is also found to influence attitude and values in applied situations as well.

The Present Study

The present study is aimed at exploring the contribution of the Bhagavad-Gita on the Probabilistic Orientation of the personality development. A survey is conducted in order to get an idea about the relationship between the Bhagavad-Gita philosophy and personality development of executives. The study concentrates on the attitude, perceptions, views and ideas of executives upon the success or failure of any event.

The Sample: 100 respondents, 80 males and 20 females were chosen as sample, working in different walk of life. The respondents were selected by applying purposive sampling procedure. The respondents were of all age groups. The minimum educational qualification was taken to be graduation. Primary data collection was mainly devoted towards the attitudinal survey of the sample. For primary data collection, the concerned executives were supplied with structured questionnaire and were collected after duly filled in by them.

The Tool: Narayanan developed a questionnaire purporting to obtain a measure of probabilistic orientation. A factor analysis of the responses of a large group of elders to the Probabilistic Orientation Questionnaire has yielded seven factors to constitute probabilistic orientation (Narayanan, 1977,1993). The seven factors that the questionnaire has used are Unbounded Expectancy, Sensing Unlimited Possibilities, Insight into Bias, Healthy Skepticism, Unconditional Acceptance, Appreciation of Chance, and Awareness of Predictability.

For data collection, a questionnaire was developed by incorporating all the seven factors as identified by Narayanan along with two additional questions stating whether the respondent has read or listened to the teachings of the Bhagavad-Gita or not and according to him/her the teachings of the Bhagavad-Gita have influenced his/her worldview or not to study the impact of the philosophy of the Bhagavad-Gita on the respondents, the questionnaire contains another twenty eight items in the form of general statements, which can be endorsed or rejected by the respondent answering the questionnaire as applicable to him/her or not. The respondents were briefly introduced to the purpose of the present study. The responses were collected by implementing a questionnaire of YES, NO type (for each endorsement i.e. YES '1' mark is given and for each rejection i.e. NO '0'mark is awarded).

Objectives

1. To know the influence of the Bhagavad-Gita on the personality development of executives.
2. To compare the level of probabilistic orientation between the persons who have read the Bhagavad-Gita and who have not.
3. To measure the difference in probabilistic orientation level between male and female respondents.
4. To study the effect of age and experience on probabilistic orientation.
5. To signify the importance of the Bhagavad-Gita in today's work culture for executive personality development that leads to transformational leadership in the organizations.

The Survey

A survey was conducted to find out the impact of the Bhagavad-Gita on the probabilistic orientation of personality development among Indian managers. The survey was conducted in three companies, which includes two public sector companies and one private sector company. The universe of the survey is comprised of all top/middle managers of the respective companies. It was proposed to follow a purposive sample design. A structured self-administered questionnaire was developed for the survey, which is produced in appendix.

The sample of the survey comprised of 100 managers both male and female and of all age groups.

Profile of managers category	Sample count	Percentage
Sex		
Male	80	80
Female	20	20
Age		
Below 45	36	36
Above 45	64	64
Management level		
Top	62	62
Middle	38	38

In response to the Q.No.1 regarding goodness or meanness of thought by itself cannot change the course of a certain action, 72 per cent of managers responded positively while 28 per cent responded negatively. As higher percentage of managers are in support of the statement it means that the managers don't regard the result of any action to be governed by our thought rather it is independent of it. Q.No.2- 81per cent of managers have agreed that prediction regarding result is very difficult and it depends upon many external factors. So the statement is also taken to be a positive attribute of probabilistic orientation. Q.No.3, 4 & 5 tells that prediction and soundness in work are not influenced by the stature of a person. To the statements an average of 60 per cent executives say yes where as 40 per cent say no. This reveals the fact that, nobody in this world can give guarantee about the success of an event, the external forces plays its role and is independent of the position one occupies in his life. So unbounded expectancy plays an important role in our life.

In response to Q.No.6, 7 & 8 an average of 75 per cent of the managers have the perception that even past experience cannot lead to certainty in predictions. This is true, as the world is ever changing. We face new situations daily, to that we are not aware before hand. So our experiences do not count much in predicting the outcomes. In response to Q.No.9 & 10, 35 per cent managers agree that occurrence of an event is a mere chance where as 65 per cent managers do not agree with the statement. The result can be accepted on the basis, that if we won't work and wait for the result, than it is fruitless. So for an event to occur, we have to make sufficient effort, to make it occur. Every thing cannot be left to the mercy of the external forces since internal forces are also responsible for the occurrence of an event.

Question No.11, 17 and 18 predicts that an attitude for scientific intervention tempered with skepticism is a healthy attitude. In response to these questions an average of 60 per cent managers have said 'yes' whereas 40 per cent managers have said no. So we can accept the validity of the statement. In order to make an event more successful we should investigate primarily the impact of natural forces upon it. We can know about the external stimulus that affects the most and thus we can increase the chance of successful occurrence. In order to be probabilistic oriented managers should have the interest to investigate about the influence of external stimuli and should develop a sense of positive skepticism.

In response to Q.No.12, 92 per cent of managers have said that they wouldn't accept the happenings without any prejudice. In response to Q.No.13, i.e. No outcome of an event can be labeled good or bad, 15 per cent managers said 'yes' where as 85 per cent managers said 'No.' These two questions reveal that the managers view the results as good or bad, this means that they analyze the outcome of an effort and do not want to leave everything to chance factor rather they believe in trying to manipulate the event in their favour by deliberate personal efforts. Leaving everything to its natural course of action may not yield the desired result. So one should have specific interest in his/ her work and must try to influence the happenings through deliberate efforts. So the managers don't show probabilistic attitude towards their work. To our respondents outcomes are to be labeled good or bad. They believe in enquiring upon the factors that gave the result. To them unless the outcomes are labeled, one cannot rectify the mistakes and plan for the future course of action. The Bhagavad-Gita philosophy too teaches to influence the occurrence of a result through positive thinking and action so our respondents are believed to be influenced by the philosophy.

Q.No.14, 15 and 16 tell us about the chance factor and how it is influenced by us. In response to these questions an average of 70 per cent of respondents believe that as every effort is governed by chance factor, we cannot make anyone solely responsible for the happenings. However chance of good occurrence can be improved by better efforts.

Q.No.19, 20 and 21 are about the factors responsible for the occurrence of an event and how far we can regulate the chance of good happenings. In response to these questions 82 per cent respondents, said that we can't label others responsible, as they are only a single factor out of many such external factors. Again 64 per cent respondents told us that as internal structure is also an element of the random phenomenon, so one is able to predict the outcome of an event to a certain extent, if he carefully examines the internal structure of the events and recognizes it. These results predict that managers are investigative and visionary in nature.

Q.No.22, 23 and 24 are about to enquire the capacity of convalescence and the affect of change on the state of an event. In response to these questions, an average of 80 per cent managers responded positively while 20 per cent managers responded negatively. So it is confirmed that as event occur naturally, there may be change in the state of good happenings or bad happenings. It is all governed by the natural laws. Nothing can be labeled as permanently good or bad as these are relative terms and are influenced by many external factors.

In response to Q.No.25 92 per cent of the managers agreed that time is a powerful factor. All the happening of the world is time's play. Every person has good times and bad times in his/her life. So the managers should not be depressed in bad times and overwhelmed in good times. This again is a message of the Bhagavad-Gita, it advises to observe equanimity during both the good time and bad time to excel in life.

In response to Q.No.26 & 27, 69 per cent of the managers agree with the statement that no one can do well or inflict harms to others if nature doesn't allow. So our suffering cannot be attributed to others, we suffer in a course of time and shine in other situations. This is all dependent upon the natural phenomenon. This shows that the managers believe in probabilistic orientation of events.

In response to Q.No.28, 82 per cent of respondents agree that they create their own world. That means we are solely responsible for the state in which we are dwelling. Our behaviour, our efforts and our deliberate labour shape our life.

Q.No.29 and 30 are to know, what percentage of managers are familiar with the Bhagavad-Gita philosophy. To these questions an average of 50 per cent managers told us that the Bhagavad-Gita philosophy influences their behaviour. So 50 per cent are aware about the Bhagavad-Gita where as 50 per cent are unaware. The Bhagavad-Gita philosophy may be imparted to our managers to develop a probabilistic orientation towards work-life, as it is very much essential for personality development and transformational leadership.

Findings

Hypotheses tested with the help of student's 't' test reveals the following results.

Hypothesis 1

Calculated value of 't' = 3.1. Tabulated value of 't' = 1.96. As calculated value > tabulated value so, null hypothesis is rejected. Hence, alternative hypothesis, "Persons who have read the Bhagavad-Gita are more probabilistic oriented than persons who have not" is accepted. From this we may conclude that the Bhagavad-Gita philosophy contributes to foster a positive mental health and helps to avoid negative symptoms and thus promotes transformational leadership.

Hypothesis 2

Calculated value of 't' = 8.05. At five per cent significance level tabulated value of 't' = 1.96. Since calculated value is greater than the tabulated value the null hypothesis is rejected. The alternative hypothesis, "Females are more probabilistic oriented than males" is accepted. It may be due to the cultural impact in the Indian context. Indian women are more accustomed with their religion and culture. They learn it from their childhood as they devote more time in home with their elders. Also they help their parents in household chore and are invariably trained by their mother. So in their personality we find the reflections of Indian culture and religion more than their male counterparts.

Hypothesis 3

Calculated of 't' = 1.80. Tabulated value of 't' = 1.96. As calculated value < tabulated value. So, null hypothesis is accepted. Males who have read the Bhagavad-Gita are more probabilistic oriented than males who haven't. This clearly indicates the effect of the Bhagavad-Gita in building an attitude of probabilistic orientation towards life.

Hypothesis 4

The 't' value calculated = 8.73 and 't' value tabulated = 1.96.

As calculated value > tabulated value. So, Null - Hypothesis is rejected. Hence, alternative hypothesis, i.e. "Females who have read the Bhagavad-Gita are more probabilistic oriented than females who have not" is accepted. Females by their very nature are more probabilistic oriented because of their societal constraints. Females after marriage leave their parents and live with somebody who is totally unknown to them. The choice mostly to whom they are going to marry is decided by parents. So probability plays an important role in their life and they learn to accept it from their very childhood and this might be one of the reasons for becoming probabilistic oriented for the females than the males. At the work place, they work with executives who are mostly male. There is a chance, that the male executives may orient their behavioural pattern. But the females who carry the knowledge of the Bhagavad-Gita philosophy with them nullify the chance of shifting their behavioural pattern and maintain their typical Indian women's personality.

Hypothesis 5

The 't' value calculated = 6.96 and the 't' value tabulated = 1.96. As calculated value > tabulated value. So, Alternative Hypothesis is rejected. Hence, Null hypothesis, i.e. "There is no significant difference in probabilistic orientation level between top level executives who have read the Bhagavad-Gita and top level executives who have not read the Bhagavad-Gita" is accepted. Top-level executives are elderly persons. They have a wide range of experience in handling different types of situations. Their minds are matured. So they can deal with different situations effectively. They become probabilistic oriented by their very experience.

Hypothesis 6

The 't' value calculated = 0.039 and the 't' value tabulated = 1.96. As calculated value < tabulated value. So the alternative Hypothesis is accepted i.e. "Middle level executives who have read the Bhagavad-Gita are more probabilistic oriented than who have not read the Bhagavad-Gita." This again shows the effect of the Bhagavad-Gita's teachings in shaping the personality of a person.

Hypothesis 7

Calculated 't' value = 5.2 and the 't' value tabulated = 1.96. As calculated value > tabulated value. So, Null - Hypothesis is rejected. Hence, alternative hypothesis, i.e. "Persons below 45 years of age and who have read the Bhagavad-Gita are more probabilistic oriented than persons who have not" is accepted.

This is because; young persons are generally not skilled to row through the rough weather for the lack of experience. They mostly believe in themselves and often become nervous during hard situations. Thus their personality fluctuates to a great degree. But the young managers who are aware of the Bhagavad-Gita philosophy acquire a stable personality and develop a probabilistic attitude.

Hypothesis 8

Calculated value of 't' = 10.56 and the 't' value tabulated = 1.96. As calculated value > tabulated value. So, Null - Hypothesis is rejected. Hence, alternative hypothesis, i.e. "Persons above 45 years and who have read the Bhagavad-Gita are more probabilistic oriented than persons who have not" is accepted. Persons above 45 years of age are generally matured persons and the philosophy of the Bhagavad-Gita reinforces their attitude towards life.

Conclusions

Based on the findings we can conclude that, the probabilistic orientation of personality development for executives is greatly influenced by the Bhagavad-Gita philosophy. From the results of the first four hypotheses we derive that females are more probabilistic oriented than males. Middle level executives are to be enlightened with the Bhagavad-Gita philosophy for probabilistic orientation, where as top-level executives become probabilistic in their attitude by virtue of their varied experience of work-life. Top level executives carry a wide range of experience and knowledge with them. They are more confident. They look things differently. They have faced varieties of situations in their life and have learned from them. Their locus of control has changed from internal to external with experience. It is said, "A man learns through experience." On the other hand middle level executives are less matured in terms of age and experience. They become stressful when encountered with an unknown situation. The Bhagavad-Gita philosophy can help them develop a probabilistic orientation to tackle such situations better and can help them to practice transformational leadership.

The Bhagavad-Gita philosophy is essential for the executives of all age groups to be probabilistic oriented and to develop a high degree of mental health. Transformational leadership can take a deep root if the Bhagavad-Gita philosophy is pursued in the work places for its ability to develop a probabilistic attitude that fosters a sound mental health. Today's work environment demands competent personalities. So the need for personality development is in high demand. The Bhagavad-Gita philosophy has the ability to permeate a good management practice in this regard.

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Appendix

Questionnaire to Measure Probabilistic Orientation of the Personality Development

(Please put a tick mark either on YES or NO given for each question)

1.	Goodness or meanness of thought by itself cannot change the course of a certain action.	YES	NO
2.	Prediction regarding the result of an action is very difficult to make since the result depends on many other external factor other than the action performed.	YES	NO
3.	Predictions are not influenced by the stature of a person or the position he holds.	YES	NO
4.	Stature of a person does not assure soundness in his work.	YES	NO
5.	Failure and success are not consistent with time.	YES	NO
6.	Nature does not have a bias.	YES	NO
7.	It is not possible to enumerate all the possibilities of the occurrence of an event and predict the outcome of such an event.	YES	NO
8.	Past experiences like success or failure or even the behavioral pattern of an event cannot lead to certainty in predictions about the outcome of an event.	YES	NO
9.	Occurrence of an event is a mere chance and emerges spontaneously.	YES	NO

10. The occurrence of an event is governed by Natural Laws and is devoid of biasness of any kind.	YES	NO
11. An attitude to investigate into the rules of the Nature is a healthy attitude.	YES	NO
12. Since the happenings are governed by a chance factor, therefore we should accept them with out any prejudice.	YES	NO
13. No outcome of an event can be labeled good or bad as they are governed by a chance factor.	YES	NO
14. Chances work more than the human efforts so one cannot be solely responsible for a happening.	YES	NO
15. Chances of good occurrence can be improved by better efforts.	YES	NO
16. Good thinking can improve the chance of good happening.	YES	NO
17. Interference of external forces on the occurrence of a result can be equalized through deliberate internal efforts.	YES	NO
18. Skepticism towards the role of external forces on occurrence of an event leads to bad results.	YES	NO
19. We cannot label others responsible for our sufferings as because they are only a single factor out of many such external forces that determines the destiny of an event.	YES	NO
20. Occurrence of an event is a derivative of the random phenomenon unknown to us.	YES	NO
21. Even in a random phenomenon an internal structure exists, so one can predict the outcome of an event if one carefully observes the internal structure.	YES	NO
22. Events occur naturally and have the capacity for convalescence.	YES	NO
23. Even the events like birth and death are natural events.	YES	NO
24. State of an event is likely to change, as nothing is permanent in this world.	YES	NO
25. Time is a very powerful factor; it makes someone shine and someone fade.	YES	NO
26. No one can do well or inflict harm to others.	YES	NO
27. Occurrence of an event is a natural phenomenon and is not inimical to any one factor or person.	YES	NO
28. We create our own world.	YES	NO
29. Are you familiar with the Bhagavad-Gita philosophy?	YES	NO
30. Is your worldview influenced by the teachings of the Bhagavad-Gita?	YES	NO

Study of Economic Transition from Communism to Free Trade Capitalism: A Case of Poland

Kate Formeller Kester and Kishore G.Kulkarni

"A democratic election in 1989 ushered in an area of freedom in Poland not seen in its history. Communism was defeated in that election and it was replaced by capitalism and the market-driven forces of competition. The new government put into the place a plan called "shock therapy" meant to make an abrupt change over to free trade and international integration. 16 years later, the question that needs to be answered is, has the introduction of free trade into Poland improved the overall welfare of the people of Poland?" Poland's evolution is not complete, however…. The polish government needs to re-focus their strategies now that free-market ideas have taken room in Polish Society. Ms.Kate Formeller Kester and Kishore G.Kulkarni narrate the story of economic transition in Poland.

The economic transition in Poland began with the political upheaval. "On the morning of August 14, 1980, a strike in the Gdansk shipyard began what eventually caused the demise of Communism in Central and Eastern Europe. The whole world watched as ordinary people like Lech Walesa and Anna Walentynowicz led what the historian Timothy Garton Ash later deemed 'the most infectiously hopeful movement in the history of contemporary Europe'."[1] The actions of a few determined people in 1980s in Poland set the course for what was to become one of Europe's greatest success stories. A democratic election in 1989 ushered in an era of freedom in Poland not seen in its history. Communism was defeated in that election and it was replaced by capitalism and the market-driven forces of competition. The new government put into place a plan called "shock therapy" meant to make an abrupt change over to free trade and international integration. Sixteen years later, the question that needs to be answered is, has the introduction of free trade into Poland improved the overall welfare of the people of Poland?

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Capitalism and the Free Trade Argument

In order to fully understand the great "leap" that Poland made from a communist society to one of capitalism, we must first determine how communism controls an economy, and by extension, its markets. Communist countries employ the mechanism of a "planned economy," or a situation where private citizens are no longer able to own the means of production for any goods (or services) produced within that country. Instead, the state, as a representative of the citizens, takes over ownership of all these means of production. This is where the notion of a "centrally-planned" economy comes into play. The state owns nearly everything within the economy – from industry to agriculture to public transportation.[2] Because private ownership no longer plays a role in the economy of a country employing communist theories, a free market system is pointless. Because the state is now responsible for all economic activities, there is no use for a market to adjust prices due to changes in supply and demand; nor is there a need for international or inter-state trade of any kind because a centrally-planned state takes the place of natural competitive forces that arise within capitalism. "The planning committee of the communist state is much more superior than the market and individual produces in predicting everything – from hundreds of thousands of consumers' preferences to international economic situations."[3]

There is no concept of "free trade" within a communist nation. In most cases, trade of any kind is limited only the negotiations of the government on behalf of its people. The state is responsible for determining if there are any needs that the population has which cannot be satisfied by the industry of the home country. Only then will the central planning agency of a country initiate a search for outside production of goods. Many times, this trade is still limited to countries that are either sympathetic to communist ideals or are simply trying to maintain some semblance of a relationship with the communist country despite its differing politics. Thus, trade is usually very cost-prohibitive to the home country, and these high prices are absorbed by the home country at some level. Ideally, communist countries attempt to build up industries of all kinds within their borders so that international trade is kept to a minimum. Unfortunately, it has proved nearly impossible for one central agency within a government to collectively maintain the general welfare of it population, their industries, and the country's infrastructure while anticipating every need (basic or otherwise) of the people. The situation that occurs within a centrally-planned nation is that workers no longer have incentives to work hard or create more profits for their firm; no matter how hard they work, they will still receive the same amount of food, shelter and clothing as if they did nothing at all. Efficiency is not a goal when competition is absent. Lack of efficiency can lead factories into disrepair and general ruin, and if the state does not have resources to respond immediately to this situation, then the delicate state-run infrastructure can easily crumble.

Proponents of communism will point to its benefits, one of which is low levels of unemployment. The idea is that there is a job for everyone because of the industrial push from the state level. In many cases there is even a circumstance of "over-employment," where there are more jobs than there are workers. However, while everyone is assured a job, they are not assured adequate wages for their work. Instead, they are promised enough resources – the same resources that everyone else will also receive. These resources are usually far below standards of living compared with similar size countries. In several cases, communist policies have forced its citizens into long lines, waiting to receive their rations of bread and meat. The government has no incentive to maintain high expectations for what they give to the people, and corruption and bribery become commonplace.

While there are many facets of communism, the one which this paper centers its research on is their intense aversion to free trade. So the question is: why do countries that employ communist policies feel that free trade is harmful to their economies? One of their main arguments against free trade is called the Infant-Industry Argument. The theory is that the best way to help new, domestic industries grow and develop is to protect them from outside forces, which could destabilize their potential for growth. There are several methods employed to achieve this protection, like extremely high tariff policies or quota restrictions on imports. In the case of communist economies both of these policies are taken to the extreme. In the first policy case, tariffs are set so high that foreign producers are not able to realize profits and are kept out of the market altogether. Secondly, quota levels are set so low that next to no foreign goods are allowed inside the country's borders.

Whatever the method employed, the objective is to insulate the growth of domestic industries from the competitive "dangers" of foreign producers. Conventional infant-industry arguments center on the fact that when protectionist policies are used, short-term welfare may be hindered but long-term maturity of the industry as a whole justifies this lapse. Eventually, the infant-industries evolve into a mature and stable industry so that when a country opens up its borders to trade, they are better prepared to handle the new competition from foreign producers. In the case of communism, the long-term goal of opening up the country to international competition via trade never materializes. Instead, industry is subsidized internally for an indefinite amount of time (or as long as the government is in power). As was stated above, lack of competition in a communist nation usually leads to a decrease in efficiency and a general deficiency in the drive for an industry to succeed. Therefore, the argument that an industry will grow and develop under protectionist policies is a fallacy in practice. The true test of protectionist policies against free trade is to take in the context of a case study. The next section will look at the case of Poland during their years of their transition from communism to a market-driven economy.

Case Study: Poland's "leap" to a Market Economy

May 1, 2004 was a very important date, not only in Polish history, but for many countries in Central and Eastern Europe. This was the date that Poland became a full member of the European Union, "fifteen years after casting off communism and embarking on a process of wrenching change."[4] It is the largest country (38.6 million in population) out of the 10 nations that became members of the EU on that same day in 2004. With a Gross Domestic Product (GDP) of over $230 billion annually, it makes up 41 per cent of the total GDP of all the 10 newest members of the European Union. It seems as if Poland is a country comfortable with its success and is poised to become a major player not only within Europe, but also throughout the world. This was not always the case, however. The road to this recent success has been long and difficult.

Poland has gone through several eras of both independence and invasion throughout the twentieth century. Post-World War I Europe was a very different place than it is today. The German, Austrian and Russian empires had collapsed by the end of the war, allowing Poland to declare her independence in 1918. Soon thereafter, the nation went through several years of border wars with both Lithuania and the Soviet Union. Twenty-one years later in 1939, Western Poland was invaded by Germany while Eastern Poland was conquered soon after by Russia. This separation of Poland was short-lived, and Poland regained her independence in 1945 at the Yalta conference following the end of World War II. It was not to be a true independence, however. Part of the independence agreement was that Poland would become a satellite state within the Soviet Union, and to embrace the communist political and economical policies that they embodied.[5] Ideologically they were forced to break ties with the West and were brought into the Soviet fold.

Over the twenty-five years since the end of WW II, Poland had fully integrated their economy with the Soviet's Stalinist legacy. By 1989:

- Over 90 per cent of the country's total industry was state-owned (most of it heavy industry) ;[6]
- Only 35 per cent of the workforce worked in the service sector (compared with 50 per cent in Western European countries) ;[7]
- The country carried over $40 billion in debt to foreign nations;[8]
- All imports had to be approved by the central planning agency, and strict quota laws were in place to reinforce this policy ;[9]
- The mid-to-late 1970s had experienced several periods of severe food shortages, which were followed up by a collapse of the already unsteady standard of living into severe poverty.[10]

Years of steadily declining living conditions had left the population of Poland with intense anger and frustration with their Communist leaders. Out of this exasperation grew a new worker's union movement called Solidarity, which was founded in 1980 by Lech Walesa, a common workingman. Initially, the movement was successfully silenced by the Communist government via a declaration of martial law in December 1981. By the late 1980s, Solidarity had managed to re-emerge, and stronger than ever.[11] The party had convinced masses of workers to go on strike opposing increased food prices, and the government took serious notice. Solidarity's leaders negotiated the first democratic elections for both the Sejm (the parliamentary lower house) and the Polish Senate. Solidarity would be allowed to compete for all the seats in the Senate and 161 of the seats in the Sejm.[12] Solidarity won all but one of the seats that they contested in the first free elections in Poland in over 50 years. These actions signaled to the Soviet Union that the era of the single-party, communist-controlled was over.

In September 1989, a new Prime Minister and Deputy Prime Minister were voted into office under the ruling Solidarity party. Less than a year later, the Deputy Prime Minister (also acting as the Minister of Finance) Leszek Balcerowicz introduced a plan, which would come to be known under many different names: the Balcerowicz plan, the "great leap forward" and "shock therapy."[13] This plan was intended to bring a swift and abrupt change to macroeconomic policies so that the market would be stabilized quickly and a shift to a market economy immediate. There were five major components to the Balcerowicz plan:

1. Restrictive monetary policy – by reducing the money supply, interest rates were allowed to fluctuate according to market terms;
2. Eliminating the budget deficit – largely accomplished by the elimination of costly industry subsidies and tax exemptions;
3. Price liberalization – price controls were removed completely and were replaced by market determined prices;
4. Foreign trade liberalization – embraced the largely Western ideals of open importing and exporting while encouraging entrepreneurial endeavours as well as a crawling peg convertibility for the Polish currency (the Zloty);
5. Removal of state-supported policies of wage indexing.[14]

While all of these measures were important steps towards a market economy, possibly the most significant was the liberalization of trade inflows and outflows. The new government of Poland was quick to assess that competition would be a key factor in allowing a new private sector to flourish. Unfortunately, this could take several decades to develop if left alone, so more drastic measures were needed. Also, they were anxious to begin privatization of state firms, but an active market structure would need to be in place first. They saw international trade as the most efficient way to achieve this. "At least for goods that can be potentially traded,… a decisive opening of Poland to world markets would immediately create domestic competition as well as a realistic structure of prices that would mimic that of Western Europe."[15] The mechanisms by which Poland was to achieve this was by eliminating (or at least significantly reducing) all trade barriers, which included import quotas and high tariffs, as well as by signing trade treaties with both the United States and the European Community to open up trade with the West.

While it has been only 15 years since the inception of Poland's "shock therapy," it is easy to see how beneficial the policies have been for its population. One of the biggest success stories of the last decade and a half has been the rise of the entrepreneur. Small and large businesses have grown exponentially. As you can see from Table 1 below, total registered private businesses increased over 250 per cent from 1989-1998 (a mere nine-year period). By 1999, private business sales accounted for over 70 per cent of the total GDP.[16] While there have been great successes in the privatization of formerly state-owned enterprises, Poland still has far to go to fully grasp a capitalist view of industry. Many public companies are still monopolizing several industries such as manufacturing, defense, energy, communications, and transportation.[17] This is an area where Poland will need to continue a concerted effort towards privatization.

Table 1. Private business 1989-99[18]

Year	1989	1990	1998	1999
Small Foreign Manufacturing Companies	841	862	549	-
Co-operatives	16,691	18,575	19,638	19,328
Individual Partnerships	813,485	1,135,492	2,014,000	-
Domestic Companies	15,252	33,239	91,903	98,365
Foreign Companies	429	1,645	36,850	40,142
Total	846,698	1,189,813	2,132,756	-

There is much literature surrounding the debate of whether or not Poland has been successful in its move away from communism and towards capitalism. While economists and sociologists may disagree on the methods (i.e. less vs. more privatization) or still existing economic ties to their past (i.e. Russia and Germany), they would be hard pressed to argue against the progress that their economic statistics point to. The measure of Gross Domestic Product (GDP) is widely accepted to demonstrate the general well being of an economy, and is generally looked to as a measure of progress (or deterioration). In the case of Poland, GDP has grown consistently in the last fifteen years, with a large jump occurring between 1990 and 1992 and over five per cent annual growth throughout the 1990s.[19, 20]

In order to conduct a detailed statistical analysis on Poland's progress since the Balcerowicz plan, I examined data taken from the International Monetary Fund's annual publication, International Financial Statistics Yearbook. I examined a wide-range of economic indicators for the 10 years preceding the plan (1980-1989) and the twelve years after its inception (1990-2001). These indicators were:

- Annual GDP (millions of Zlotys)
- Consumer Price Index (1995=100)
- Wages/Average Earnings Index (1995=100)
- Exports (millions of Zlotys)
- Imports (millions of Zlotys)
- Export Price Index (1995=100)
- Import Price Index (1995=100)

The reason that I chose these elements, as opposed to others, was because I felt they would be the statistics most likely to feel the effects of international trade, whether positive or negative. The first set of analysis I did was to simply plot each one of these elements over the twenty-one year period to get a visual depiction of their progress. Below is the graph of Annual GDP by year:

Graph 1. Annual GDP (Millions of Zlotys), 1980-2001

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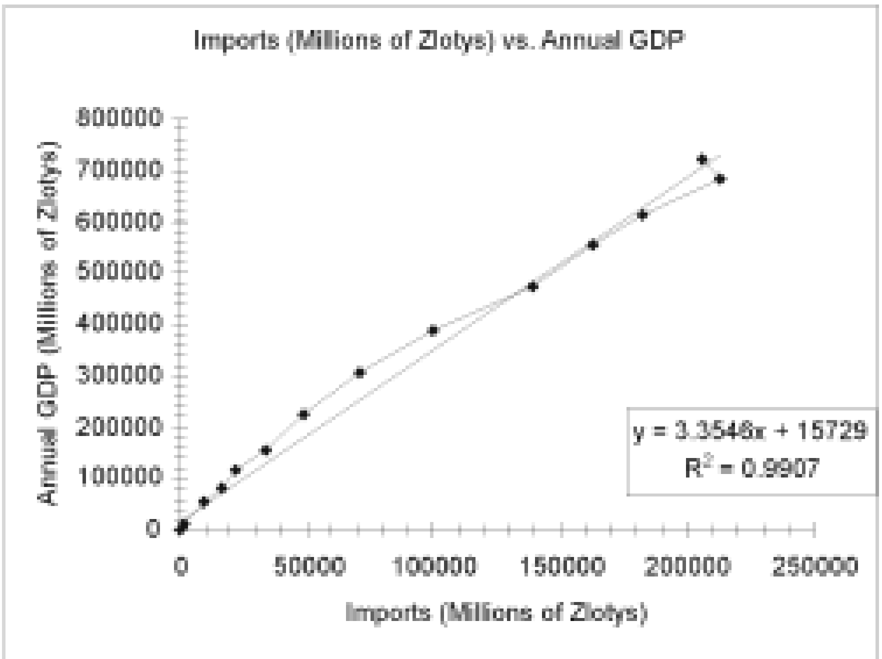
As you can see, there was no significant growth in GDP until 1990 (the year of the implementation of "shock therapy") and steady increases ever since. In fact the explosion of growth is so significant, that there has been a nearly 3000-fold increase from 1980 to 2001. (Please see the Appendix for the table of data used as well as the details of all analysis performed). This same trend of sustained and immediate growth can also be seen (in the Appendix to this paper) for the consumer price index, wage index, exports, and imports.

I also felt it was important to look at the relationship between each of these factors via a linear regression model. In order to achieve this, I took each of the above indicators and conducted separate analyses with them as the independent variable and GDP as the dependent variable. The results were overwhelmingly supportive of Poland's new economic direction. Listed below is an example of one of these:

Graph 2. Imports (Millions of Zlotys) vs. Annual GDP, 1980-2001



22

The dots indicate the year-over-year change in imports (as millions of Zlotys) and the straight line represents the linear regression line of a perfect model, or that with an R^2 value of 1.0. (R^2 is a measure of the strength of a linear regression model). As you can see, the R^2 value is at .9907, which is less than one per cent under a perfect score (P-value is 8.48E-22). This is very indicative of the fact that the growth of annual imports had a very positive impact on the subsequent growth of GDP over this same time period. In fact, every indicator showed strong results of R^2 values over .90 and extremely low p-values. Therefore, the growth of every one of the indicators measured was strongly associated with the corresponding growth of the annual GDP (Please see the Appendix for the complete analysis and graphs).

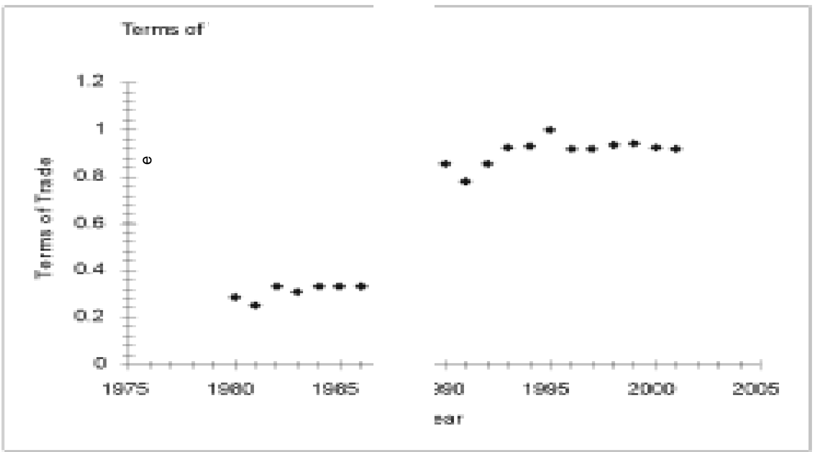
One additional measure which I felt was very important to include was that of Terms of Trade (TOT). This is an argument that many less developed countries (LDC) make against free trade. TOT is a ratio, which measures the average price of exports against the average price of imports. It is believed by many LDC's that free trade deteriorates their TOT because imports of capital-intensive products carry prices, which increase faster than the prices of their labour-intensive exports. Because Poland was considered and LDC throughout the 1980s, I thought that it would be important to investigate the impact that opening their economy had on their TOT ratio. Table 2 shows that Poland's TOT held steady throughout the 1980s at roughly .33. There was a significant jump in 1990, from .40 to .85, and TOT held steady throughout the 1990s and into 2001 at constant rates of over .90. It is safe to assume then, that the complaint that TOT declines after free trade is not true in the case of Poland.

Table 2. Terms of Trade for Poland, 1980-2001.

Year	Export Prices (Index 1995=100)	Export Prices (Index 1995=100)	Terms of Trade
1980	0.2	0.7	0.2857143
1981	0.2	0.8	0.25
1982	0.4	1.2	0.3333333
1983	0.4	1.3	0.3076923
1984	0.5	1.5	0.3333333
1985	0.6	1.8	0.3333333
1986	0.7	2.1	0.3333333
1987	1	3	0.3333333
1988	1.7	4.9	0.3469388
1989	5.5	13.6	0.4044118
1990	33.7	39.4	0.8553299
1991	40	51.2	0.78125
1992	51	59.7	0.8542714
1993	64.1	69.5	0.9223022
1994	82.5	88.5	0.9322034
1995	100	100	1
1996	108	117.2	0.9215017
1997	122	133.1	0.9166041
1998	131.2	140.1	0.9364739
1999	140.4	149.3	0.9403885
2000	142.6	154	0.925974
2001	137.2	149.2	0.919571

[23]

Graph 3. Terms of Trade for and, 1980 -2001.



[24]

Conclusion

Poland has gone through many changes in a short time. They have undergone a radical change, politically, economically, and socially. The communist ideals which dominated their landscape in so many ways for over 50 years have been reduced to only memories. In its place is a new Poland, strong and idealistic. The new Poland is the strongest new member of the European Union, their currency (the Zloty) is finally considered stable, and investors have made the country (via the new Warsaw Stock Exchange) one of hottest new places to put their money.[25] The most significant gains have been in the overall economic welfare of the country. Annual GDP has grown exponentially in the last fifteen years, and the trend indicates that it will continue to do so. Consumer prices have increased as a result of free trade; however, average wages have far outweighed this increase. The standard of living for most Poles has also had a major boost from the opening up of their markets. The days of standing in lines waiting for a single loaf of bread or a gallon of milk have finally disappeared along with Communism. Free trade under the Balcerowicz plan has been an overwhelming success thus far.

Poland's evolution is not complete, however. One of the biggest complaints of the new government is that unemployment has increased to rates much higher than in the days of communist rule (nearly 17 per cent in 2001).[26] The Polish government needs to re-focus their strategies now that free-market ideals have taken root in Polish society. They have spent the last 15 focused on economic stability, but the equation of their success will be unbalanced until they learn to balance their social capital as well.[27] Better distribution of the economic gains they have made would be an important lesson to learn. The European Union now looks to Poland as an example of the success that can occur in those nations of Central and Eastern Europe still plagued by the effects of many years of Soviet rule. Poland has the opportunity to show the rest of the world that they can continue to be this example in the future.

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Quality of Work Life as Determinant of Mental Health: A Study of Print Media Employees

Rishu Roy

The pressures in the *free economy*, breakdown of *trade barriers* and *globalization* make enormous demands on today's Corporation to compete in every domain. Managing people by talents to improve the quality of wok life seems to be the new mantra on the Indian corporate landscape. Every organization QWL (Quality of Work Life) is a multifaceted concept, implying the concern for the members of the organization irrespective of the level they belong to. Efficiency, performance and productivity of the person are affected by mental health, an individual. Mental health is the ability of human beings to adjust to the world and each other with maximum effectiveness and happiness or it is a condition and level of social functioning of an individual, which is socially acceptable and personally satisfying. This paper reports the impact of "*Quality Of Work Life*" on "*Mental health.*" This idea is illustrated by doing a survey of 80 employees was selected from different Press media *(Dainik Bhaskar & Nai Dunia, Hindustan times, Dainik Jagran)* of Indore, Bhopal and Jabalpur on a random sampling basis. The results reveal that good quality of work life have a significant and positive correlation with mental health of the employees.

Achieving heights in the present days of cut-throat competition when business is trying to occupy the prime condition in the marketplace, quality of work life and mental health, has emerged as an elucidation for the performance in the job. In today's era, *Performance* can neither be achieved by external motivation nor by financial and non-financial rewards rather it comes from the *"Workers & their total working environment"* (QWL). The focus is not only how people can do better work, but also how work may cause people to do better. In today's society the picture of the relationship between traditional approach towards work and financial rewards is becoming blurred.

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Now-a-days many people refuse to accept the contrite kind of work life that is prevalent in most of the Industrialized nations. The basic concept underlying the QWL is what has come to known as *"Humanization of Work."* It covers a person's perception or feelings about every dimension of work including economic rewards and benefits, security, working conditions, organizational and interpersonal relationships and intrinsic meaning in a person's life.

Mentally healthy people have high (not unrealistic) opinion about their own capabilities. A high Self-Efficacy belief will also ensure that a person sets herself/himself reasonably difficult goals and work hard to achieve those goals preserving in the face of difficulty. So it is a person's general approach to tasks i.e. positive belief can help a person to achieve goals successfully, which reflects a good mental health. Stress Syndrome is found to be associated with physical & mental problems (Ill Health). According to Dhar and Arora(1996), optimum level of stress can increase both performance and satisfaction.

Review of Literature

1. Quality of Work Life

Quality of work life refers to the favourableness or unfavourable ness of a job environment for people. According to Richard and Loy (1970), quality of work life can be considered as the "degree to which members of work organization are able to satisfy important personnel needs through their experience in the work organization. Walton (1975), proposed various criteria for quality of work life like adequate and fair compensation, safe and healthy working conditions immediate opportunity to use and develop human capacities, opportunity for continuous growth and security, social integration in workforce, constitutionalism in work organization, work and total life space and social relevance of work, According to Rahman (1984), a positive co-relation has been found between quality of work life and private sector than public sector. Davis and Newstorm (1990), contented that blue collar employees at the grassroots level experience a sense of frustration because of low level of wages, poor working conditions, unfavourable terms of employment and inhuman treatment by their superiors, whereas white collar employees feel frustrated because of alienation over their conditions of employment, interpersonal conflicts, role conflicts, job pressures, lack of freedom in work and absence of challenging work. Conversely white-collar employees feel frustrated because of alienation over their conditions of employment, interpersonal conflicts, role conflicts, job pressures, lack of freedom in work, absence of challenging work, which ultimately lead to boredom, tension, conflicts, lower performance, employee turnover, declining job satisfaction and lesser productivity. All these attitudes reflect the negative evaluations that employees hold about various aspects of their work environment and poor mental health symptoms. Khaleque (1990) found that highly educated people and people of high income group are able to perceive quality of work life in the better way in comparison to less educated people and people of lower income group. Haque (1992) found that quality of work life is negatively correlated with absenteeism and accidents.

Findings of Hossain (1995) indicate that besides job satisfaction and morning shift, quality of work life has the positive and highest co-relation with mental health. Wadud (1996) explored that younger and higher experienced group had significantly higher perception of quality of work life than the older and lower experienced groups. Rao (1996) found that increased focus on maintaining a balance between the work and personal life of the employees, is at heart of any effective people management strategy and lack of concern for maintaining these balance results in many problems ranging from ill health of workers, absenteeism, high level of stress, family problems, problems in retaining employees and unmotivated workforce. Researches have revealed that organizations based on participation and good qualities of life have been found to have more positive outlook towards life and their work, in comparison to traditionally based organizations. This symbolizes positive or good mental health. It is a person's general approach to task i.e., positive belief that can help a person to achieve goals successfully, which reflects a good mental health.

2. Mental Health

World Health Organization (WHO) has defined mental health as "a complete physical, mental and social well-being and not the absence of any disease." In general, the mental health is the ability to work well and it gives satisfaction. Poor mental health can cause several types of disorders like anxiety disorders, stigma and discrimination, eating disorders, schizophrenia, mood disorders, concurrent disorders and bipolar disorders. Baundra (1983) contended that a mentally healthy person has high (not unrealistic) opinion about his/her own capabilities. So it is a person's general approach to task i.e. positive belief that can help him to achieve goals successfully, and reflects a good mental health. Stress Syndrome is found to be associated with physical and mental problems (Ill Health). According to Dhar and Arora (1996), optimum level of stress can increase both performance and satisfaction. According to Peter Warr (1987), environmental features of work effect mental health. He developed what he called a vitamin model. He outlines nine environmental features that will be present to a greater or lesser extent in a job. This model represents nine features of work, which are considered to be necessary contributors to mental health just as each vitamin is necessary contributor to the physical health. When the feature is not present, the person will be deprived and mental health will be affected adversely, just as vitamins improve the health to the certain plateau, similarly increasing presence of these environmental features of work will increase the mental health up to a certain level only, just as increase dose of vitamins will improve the health, but after the certain level no improvements are recorded or person is going to rather suffer. Warr suggested that after certain level of increased environmental features, the mental health is going to suffer. Nine environmental features of work are externally generated goals, variety, environment clarity, and opportunity of control, skill use, interpersonal features, availability of money, physical security and valued social position.

These nine Environmental Features are structural factors, which affect mental health at work. However, Warr explored that deficiency in the environmental feature will impair the mental health; an increase in that feature beyond the required level will lead to no further improvement. For some of the features an addition beyond the required level will lead to reduction in mental health, while for others any addition will have no effect. The analogy is that too much of the certain vitamins (A and D) will result in toxic poisoning and so to reduce health, while other for vitamin (C and E) though you can have a deficiency, once the required level is reached, any additional intake will have no adverse or positive effect. Thus Warr considers six out of nine environmental features similar in operation like vitamin A/D and the rest three like C/E vitamin operations.

A/D vitamin operations—externally generated goals, variety, environment clarity, opportunity of control, skill use and interpersonal features are those features if they have a low presence, will be damaging to mental health, but if present in overabundance their effect will be over damaging. For example, if a person is constantly required to develop new skills, this might pose a threat, as she does not feel able to cope.

C/E vitamin operations—availability of money, physical security and valued social position are considered as the environmental features of work where mental health is unlikely to be affected by having too much of them. Only a deprivation of these essential features will impair mental health.

Employees who allowed more participation in decision making, more and have higher job satisfaction. Non-participation at work is a significant predictor of strain and job related stress leading to general poor health, escapist drinking, depression, low self–esteem, absenteeism and plans to leave work. Abramson et al. (1992) found that workers were both physically and mentally healthier than other workers who expressed satisfaction with their work. Susan Newell (1995), had explored that job related attitudes tap positive or negative evaluations that employees hold about various aspects of their work environment Employees with the positive or good mental health is generally associated with being keen, eager, interested and of course high levels of motivation, while people with poor mental health are generally associated with lethargy, boredom, apathy and low levels of motivation. It is not so that a mentally healthy person will not experience tension or gloom but it will not exist for a long time. On the other hand the person with poor mental health is likely to experience the majority of time in the negative states.

But not much has been explored pertaining to their relationship with mental health, which is an important determinant of effective performance and organization effectiveness. So to fill in the gap the present research has been undertaken.

Research Methodology

Design and Sample of the Present Study

The sample of the present study consisted of N=80 employees Press Media i.e. from *Dainik Bhaskar* and *Nai Dunia* from Indore, Bhopal and Jabalpur and random sampling techniques was used for data collection. The research was carried out through survey method with the help of self-developed structured, non-disguised questionnaire. It consisted of statements based on five point Likert Type scale on which the respondents were asked to indicate the degree of agreement or disagreement. The close-ended Questionnaires helped to get a clear idea about respondent's perception.

The Tools

***I. Data Collection**:*

The standardized psychometric tools are used for data collection are—

1.Quality of Work Life Scale: (Dhar Upindher, Dhar Santosh, 2004)

2.Mental Health Scale: (Wig Narendranath, Prasad Dwarka, Verma Santosh, 1985)

II Data Analysis:

Various univariate, bivariate, multivariate and other statistical techniques, have been used to study relationships between the dependent & independent variables. Data analysis has been done using Z-test and correlation.

Variables Included

Independent Variables: -

1.QWL i.e. Quality of Work Life defines the total relation of Employees at their work place.

Dependent Variable:-

1. Mental Health i.e. the measurement of mental status of the individual.

Hypothesis

Based on review of literature and past studies, the following Hypotheses have been formulated for verification of this study through empirical investigation:

§ H01: There is no significant impact of good quality of work life over mental health of the employees of Print Media.

§ Ha1: There is a significant impact of good quality of work life over mental health of the employees of Print Media.

Correlation Values

Quality of work life and mental health = .71

Table - 1 Showing Co-Relation Value between Quality of Work Life (Independent variable) & Mental Health (Dependent Variable)

Variables	Co-Relation Value
Mental Health	0.71
Quality of Work Life	

Z - Values

Quality of work life and mental health = 9.3

Table - 2 Showing Z-Values

Variables	Z_{cal} Value (At 4=5% level of significance)
Mental Health	9.3
Quality of Work Life	

Z_{tab} Value at five per cent level of significance is 1.96

Results and Conclusions

The correlation between Quality of work life and mental health is .71 (Please see table – 1), which showed that they are positively correlated. This shows that positive mental health is due to good quality of work life.

H01: Null Hypothesis Rejected

It is evident that null hypotheses stands rejected as $Z_{cal} > Z_{tab}$ (9.3 > 1.96) at five per cent level of significance.

This concludes that there is significant difference in the mental health of the employees who perceive good quality of work life. Thus, good quality of work life, promotes the mental health of the employees.

(Please see table – 2).

Discussions and Implications

The knowledge generated through this research is merged with the known literature, for the meaningful understanding of the subject in focus. Sims et al; (2004) concluded that as people spent a high proportion of their waking hours on the activities associated with their work. Individuals may learn to cope with both, the known and unknown degrees of success and feel frustrated if the conditions of work are not favourable which includes low level of wages, poor working conditions, role conflicts, job pressures and absence of challenging work. If the person is constantly exposed to uncontrollable outcomes and poor quality of work life this is definitely going to deteriorate his mental health and lead to stressful situations. This affects individuals' performance and outcome, which results in lethargy, boredom, apathy and low levels of motivation and individual, becomes less adaptive in an organization, which leads to the psychological upsets (Higgins, 2005). These factors are in turn are associated with negative mental health.

Poor quality of work life plays an important role in demoting mental health and its factor (physical and emotional) too. It may be because of the stress and strain caused which is percolated also to Indian working psyche (Datta, 2001). The people who perceives good quality of work life also promotes in the health and happiness (Deci and Ryan, 1987). According to him when job environment indulges, encourages or compels individuals to work more and more with disvalues like jealousy, sycophancy, vindictiveness, backbiting, vanity, hypocrisy, the employee feel frustrated and de-motivated with the unfavourableness in the job environment and is unable to satisfy his or her personal needs. It thus shows that quality of work life is deteriorating. This is the erosion of sense of individual, social and moral responsibility and values. This leads to anti-social and other forms of reckless behaviours to others and their management (Durham, 1988). Person who is having a severe disturbance of mood or sustained and repeated irrational behaviour is indicating mental disorder (Applebaum, 1997), which if is consistent will ultimately leads to mental illness.

These findings point out the need for taking steps to improve QWL & bring high perception of contingencies between action & the outcomes so that the mental health as well as performance of the employees may improve.

Undoubtedly the study suffered from some limitations like small sample size and limited area of investigation, which might not be true representative of the whole population of the country. So before generalization there is needed to conduct an in depth study covering larger sample size and broader area of investigation. In spite of all these limitations, the findings may be helpful in improving mental health.

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Entrepreneurial Companies' Choice between Long-term and Short-term Debt and the Role of Venture Capital

Katleen Baeyens and Sophie Manigart

This paper focuses on the choice of entrepreneurial companies between long-term and short-term financial debt and on the role of venture capital (VC) investors in the financing strategies of their portfolio companies. Our results show that VC backed firms match the maturity of new debt to the maturity of their assets. Default risk is also an important determinant of the firms' financing choice: firms with high default risk are unable to attract long-term debt. Contrary to our expectations, young and small VC backed firms tend to rely more on long-term debt. Interestingly, VC has a positive impact on the firm's use of long-term debt. This means that venture capitalists (VCs) may play an important role in reducing myopic behaviour of firms caused by over dependence on short-term financing.

Entrepreneurial companies often develop products and ideas that require substantial capital, exceeding the internally generated cash flows or entrepreneurs own funds (Berger and Udell, 1998). When confronted with a lack of sufficient internal funds, entrepreneurs may appeal to different types of external financing sources. However, this demand for external financing may not always be met: investors may ration capital and positive net present value projects may be denied financing (Guiso, 1998), or may only be able to obtain certain types of funding (Fluck et al., 1998). This paper focuses on entrepreneurial firms' external financing decisions in general, and on the choice between long-term and short-term financial debt in particular. This choice between long-term and short-term debt is important because it involves a consideration of both cost and risk elements and hence, may have impact on the value of entrepreneurial firms (Morris, 1976).

Market imperfections have an effect on the choice between long-term and short-term debt. Theories on the choice of debt maturity stress the advantages of short-term debt in mitigating agency problems of debt and problems caused by asymmetric information. These problems are particularly important in entrepreneurial companies (Berger and

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Udell, 1998). However, the use of short-term financing may promote short-termism and thus restrain long-term economic performance. For example, Webb (1993) argues that myopic behaviour may result from firms' efforts to mitigate problems of adverse selection in financial markets. If the terms on which projects are financed can be renegotiated as additional information becomes available, firms may prefer less productive projects that yield early information. Myopic pressures may force entrepreneurial companies to cut on R&D, training and capital expenditures for example. Hence, the emphasis on the use of short-term debt may hamper firms' overall performance. Schiantarelli and Sembenelli (1997) find a positive relation between debt maturity and a firm's subsequent profitability and growth. It is therefore important that firms have access to long-term financing sources, such as long-term debt.

Short-Term versus Long-Term Financial Debt

In this section, the determinants of the maturity structure of debt are reviewed and hypotheses are developed.

Agency costs associated with debt

Debt contracts may create conflicts of interest between debt holders and equity holders. First, Jensen and Meckling (1976) argue that with existing debt in place, equity holders may prefer projects with a lower expected value and higher risk instead of high expected value and lower risk projects, hence substituting the firm's existing assets for riskier assets. This risk shifting strategy negatively affects the value of the bondholders' claims. Further, equity holders may choose to forego value-creating investment projects when the project increases the value of the firm's debt at the expense of the value of the equity of the existing equity holders (Myers, 1977). Both investment strategies, induced by conflicts of interests between debt and equity holders, are sub optimal, as they do not lead to maximum firm value.

Several strategies have been suggested to reduce these problems of risks shifting and under investment (Barclay and Smith, 1995; Scherr and Hulburt, 2001). For example, firms can use less debt (Myers, 1977) or include debt covenants that protect the interests of the debt holders and limit the decisions of the management. Shortening the maturity of debt (Myers, 1977; Barnea, Haugen and Senbet, 1980; Ericsson, 2000), such that debt matures prior to the "option to invest" may also help to re-establish the appropriate investment incentives. Therefore, it is expected that short-term debt will especially be used in firms that are particularly sensitive to problems of risk shifting and under investment. Firms in which growth opportunities are the major source of value are especially prone to risk shifting and under investment problems. Hence:

Hypothesis 1: There is a negative relationship between growth opportunities and the maturity of debt

Agency costs of debt may also explain why firms match the maturities of their assets and liabilities (Scherr and Hulburt, 2001). Firms' investment decisions do not only involve the acquisition of new assets, but also the replacement of existing assets as they mature. Outstanding debt that matures prior to the "option to re-invest," helps to reduce the agency problems associated with debt (Myers, 1977). It is therefore expected that firms with a higher proportion of short-term assets will have debt with shorter maturity.

Morris (1976) provides an alternative explanation for the maturity matching principle. Companies match the maturities of assets and liabilities in order to match the timing of incoming cash flows generated from the firm's assets to the outgoing cash flows necessary to settle the debt. If the maturity of debt is considerably longer than that of the assets, then there will be uncertainty about the amount and source of cash flows necessary to service the debt. If, on the other hand, the maturity of debt is substantially shorter compared to the maturity of the assets, then the assets may not have generated enough cash flow to settle the debt when it expires. In that event, the company faces a refinancing problem potentially leading to a liquidity problem. Both arguments lead to following hypothesis:

Hypothesis 2: There is a positive relationship between the maturity of assets and the maturity of debt

Asymmetric information and signalling

In the presence of information asymmetries about the quality of the firm, short-term debt can be used as a signalling device (Flannery, 1986). Due to asymmetric information, debt will be mispriced. Because outsiders take into account a higher probability of credit quality deterioration, the mispricing of long-term debt will be larger than the mispricing of short-term debt. Hence, undervalued firms will issue the less under priced short-term debt, while overvalued firms will choose the more overpriced long-term debt. The use of short-term debt therefore signals that the firm is undervalued. In general, firms should thus prefer to use short-term rather than long-term debt.

Diamond (1991) shows, however, that a trade-off exists between the incentive for good firms to issue short-term debt and liquidity risk. Liquidity risk arises when lenders are unwilling to refinance the short-term debt of solvent, but illiquid borrowers. Diamond (1991) therefore hypotheses that a non-monotonic relation between debt maturity and default risk exists. Firms with low default risk - for which liquidity risk is less important -signal their quality by using short-term debt. As default risk and hence liquidity risk increases, firms will be more inclined to borrow long-term. They thereby forego the positive signal that short-term debt conveys, in order to reduce the liquidity risk. However, credit suppliers may be unwilling to provide long-term debt to firms with high default risk. These firms will have no choice but to use short-term debt.

Hypothesis 3: There is a non-monotonic relationship between default risk and debt maturity: firms with low default risk and firms with high default risk issue short-term debt, whereas firms with medium default risk issue long-term debt

Asymmetric Information and Adverse Selection

Asymmetric information between firms and lenders may lead to problems of adverse selection. Firms may not always be able or willing to reveal private information to lenders (Guedes and Opler, 1996). In the presence of asymmetric information, borrowers with favourable private information prefer short-term debt because they expect to be able to borrow under more favourable terms later. Especially firms with large information asymmetries, for example created by uncertain short-term prospects, will use short-term debt, because repaying the principal will either lead to investors supplying replacement financing or lead to an optimal liquidation decision (Mitchell, 1993).

Hypothesis 4: There is a negative relationship between information asymmetries and the maturity of debt

Impact of Venture Capital on the choice between

Short-Term and Long-Term Debt

In this section, we argue that VCs as financial intermediaries are able to reduce myopic pressures by improving the ability of companies to attract long-term debt, compared to short-term debt. VC plays an important role in the financing of entrepreneurial companies. Amit et al. (1998) argue that one of the primary reasons for the existence of VC companies is their information processing capacities which may reduce information asymmetries, and hence adverse selection and moral hazard problems. The role of VCs is essentially to screen, contract, and monitor investments (Berger and Udell, 1998; Manigart and Sapienza, 1999) in order to minimise the costs of delegating decisions to entrepreneurs (agency and moral hazard costs) or to induce them to reveal critical information on their activities (reducing information asymmetries). Beuselinck et al. (2004), for example, show that receiving VC has a positive impact on the quality of financial reporting of entrepreneurial firms.

As screening is an important role of VC companies (Lerner, 1995; Manigart and Sapienza, 1999) and as VCs are extremely selective, the mere fact that a VC company has invested in an unquoted company conveys positive information about that company. Receiving VC sends a strong, positive signal about the future prospects of the firm to other potential investors, which increases the legitimacy of the firm (Megginson and Weiss, 1991). By reducing information asymmetries and sending positive signals about the future prospects of the firm, receiving VC may lower the firm's need to use short-term debt as a mechanism to reduce problems caused by asymmetric information.

***Hypothesis 5*:** Companies that received VC will raise more long-term debt

Data and Methods

Sample and Design

Foregoing hypotheses are tested on a sample of unquoted Belgian VC backed companies and a sample of comparable non-VC backed companies, using yearly accounting data from the National Bank of Belgium. In contrast with the U.S. where most studies on debt maturity structure are done, Belgium has a Continental European financial system. Only a minority of Belgian firms are quoted on a stock exchange, while the most important source of external financing is debt, and more precisely bank loans. The venture capital industry, however, is quite well developed in Belgium compared to other European companies (Reynolds et al., 2000). We restrict our sample to companies that are at least five years old, so as to exclude the very early development stage of a company and focus on somewhat more mature companies.

A sample of VC backed companies is constructed using secondary sources. Yearly accounts of VC firms, press clippings, press releases and websites are used to identify Belgian companies that received VC between 1987 and 1997. The VC backed sample is composed of 243 companies, and excludes companies in the financial sector and holding companies.

In order to test hypothesis 5, a matched sample of companies that did not receive VC is constructed. Following Megginson and Weiss (1991) and Lerner (1999), each VC backed company is matched with a non-VC backed company on following criteria, measured in the year before the VC funding (or the year of VC funding, for the companies that received VC from their inception) : activity (NACE-code), size (with total assets as proxy). The pre-investment situation of the VC backed companies is used, so as not to introduce a size bias caused by the VC funding itself. The total sample used in this study thus consists of 243 VC backed companies which were at least 5 years old at the time of the initial VC investment and 243 comparable non-VC backed companies. Analysing mature companies allows us to study both the period before and after VC participation and hence to examine the effect of VC on firms financing strategies.

The main data for the study are the yearly accounts of the companies, up to 1999, from five years before up to utmost five years after the initial investment. The yearly financial accounts of the companies - collected by the National Bank of Belgium - are the major source of data. For each company year, more than 50 variables from the financial accounts (balance sheet, profit and loss statement, and additional information) are recorded. Moreover, for each company, it is known whether it still exists as an independent entity, whether and when it has gone bankrupt, been involved in a merger or acquisition, been closed or split. This set-up allows us to include surviving (successful) and failing (unsuccessful) companies, in contrast to most studies of this type. Including both surviving and non-surviving companies eliminates a positive survivor bias (Manigart et al., 2002) and increases the validity of the results.

Variables and Method of Analysis

Financial accounts of Belgian companies provide a detailed description of the liability and asset structure of firms. Information is available on the use of financial debt[1] both long-term and short-term. The dependent variables are computed as follows. Long-term financial debt (LONG-TERM) is defined as financial debt with an original maturity of more than one year; short-term financial debt (SHORT-TERM) has an original maturity of 1 year or less.

The maturity of assets (ASSET MATURITY) is measured as the ratio of fixed assets to total assets. Investments in tangible assets and in intangible assets, both scaled by beginning-of-year total assets, (INV TANG/TA and INV INTANG/TA respectively) are included in the analyses as two indicators of growth opportunities. It can be argued that investments in tangible assets indicate the growth potential and future profitability of companies. Kallapur and Trombley (1999) find indeed that investments, deflated by book value of assets, are associated with ex post realised growth.[2] The ratio of intangibles assets to total assets (INTANG/TA) is an alternative proxy for growth opportunities. Van Cayseele (2003) argues that past investment in R&D is a good indicator of future growth opportunities. As a large number of companies in our database do not report investments in research and development, investments in intangible assets are used as a proxy of future growth opportunities.

Default risk is measured as a short-term default risk indicator (DEFAULT RISK). This indicator, the Ooghe – Joos – De Vos score, is a multivariate logit score for short-term failure prediction. The score, developed in a Belgian context, is an alternative risk indicator for the Altman's Z score (Ooghe, Joos and de Bourdeaudhuij, 1995). The risk indicator varies between 0 (financially healthy firm) and 1 (firm in financial distress). The score is computed using 8 of the firm's financial variables: (1) direction of financial leverage, (2) accumulated profits and reserves to total liabilities, (3) cash to total assets, (4) overdue short-term priority debt, (5) operational net working capital to total assets, (6) net operating result to working assets, (7) short-term financial debt to short-term liabilities and (8) amounts payable guaranteed by public authorities and real securities to total amounts payable. Following Scherr and Hulburt (2001), firm age and size are included as proxies of information asymmetries. Smaller firms often produce less information about themselves, making them more opaque to outside parties (Berger and Udell, 1998). Younger firms are also typically characterised by larger information asymmetries, as they have not yet established a reputation. Firm size (SIZE) is measured as the logarithm of total assets, firm age (AGE) as the logarithm of one plus the firm's age in years. To study the impact of receiving VC in the sample of VC backed companies, a dummy variable (AFTER VC) is included in the analyses. AFTER VC is equal to 1 if the companies have already received VC financing, and 0 otherwise. Finally, industry and year dummies are included as control variables in the analyses. Industry dummies are added in order to control for industry specific effects and the inclusion of year dummies allow to control for potential structural changes, such as changes in term structure, over the study period.

The data are first analysed using bivariate analyses. We study the determinants of the choice between short-term and long-term debt. Since our data are not normally distributed, the non-parametric Wilcoxon test is used to compare the characteristics of VC backed companies that borrow long-term to those that borrow short-term. Second, multivariate logit analyses are used to analyse which factors determine the choice between long-term versus short-term debt. Following Guedes and Opler (1996), we do not examine the maturity of all liabilities on the balance sheet. Instead, we study whether new debt is raised in the form of short-term or long-term financial debt. This incremental approach allows us to focus more on state variables that fluctuate over time, such as the impact of having received VC financing. In order to take into account the panel structure of the data, we also apply conditional (fixed effects) logit analyses (Greene, 1998). Conditional logit differs from regular logit regression in that a conditional likelihood is used. This means that the firm data are grouped and the likelihood is calculated relative to each firm. Firms that have no variation over time in the dependent variable - i.e. firms that did not raise either long-term or short-term financial debt - have no effect on conditional likelihood estimation and hence, are not included in the analyses.

Analyses and Results

In this section, the determinants of a firm's choice of debt maturity are analysed. Hence, we focus on company years in which companies either borrows long-term or short-term. Table 1 shows how many VC backed companies and non-VC backed companies did either issue long-term or short-term financial debt in the observation period. Each company is observed for a period between five and ten years, depending on whether it survives until the end of the observation period (ten years), or disappears earlier due to bankruptcy liquidation, merger or acquisition. The sample of 243 VC backed companies is thus expanded to 2052 observation years, indicating that each VC backed company remains in the database for 8.4 years on average. The sample of non-VC backed companies is expanded to 2170 observations, indicating that each non-VC backed company remains in the database for 8.8 years on average. Table 1 shows that 89 per cent of the VC backed companies and 79 per cent of the non-VC backed companies in our sample do receive additional financial debt during the years under study. This confirms that VC backed companies attract more bank debt than non-VC backed companies (Baeyens and Manigart, 2003). More than half of the VC backed companies borrow both on long and on short-term, compared to 35 per cent of the non-VC backed companies. 14 per cent of the VC backed companies issue exclusively long-term debt and 19 per cent issue only short-term debt. Compared to their VC backed counterparts, a larger proportion of non-VC backed companies use exclusively new short-term debt (27 per cent). The VC backed companies raise debt on 728 (= 331 +302 + 95) occasions, whereas the non-VC backed companies raise debt on 521 (= 269 + 217 + 35) occasions during the observation periods. These observations will be used as sample elements in the analysis. Focusing on events in which new debt is raised, allows us to better understand the debt maturity choice of entrepreneurial companies. First, the choice between long-term and short-term debt will be examined using bivariate analyses. Second, two types of logit analyses will be conducted: regular logit analyses and conditional logit analyses.

Table 1

Use of Debt

VARIABLE	VC Backed C[IES]		Non-VC Backed C[IES]	
	#Firms (%)	# Obs. (%)	#Firms (%)	# Obs. (%)
SHORT-TERM, NO LONG-TERM	46 (18.9%)	331 (16.1%)	67 (27.1%)	269 (12.4%)
LONG-TERM, NO SHORT-TERM	35 (14.4%)	302 (14.7%)	41 (16.6%)	217 (10.0%)
LONG-TERM & SHORT-TERM	135 (55.6%)	95 (4.6%)	86 (34.8%)	35 (1.6%)
NO ADDITIONAL DEBT	27 (11.1%)	1324 (64.5%)	53 (21.5%)	1649 (75.0%)
TOTAL	243	2052	247	2170

Obs.: observations

Bivariate Analyses

Table 2 shows whether and how firms that use long-term debt differ from those that get short-term debt. Panel A and panel B indicate that differences in characteristics are similar for VC backed and non-VC backed companies. The results of Wilcoxon tests show that firms that issue long-term debt differ substantially from firms that show short-term debt. First, debt maturity is directly related to asset maturity: firms that issue long-term debt have significantly longer asset maturity, compared to those that borrow short-term.

Second, firms that invest more in tangible assets also borrow more on long-term. However, no difference exists with respect to the amount invested in intangible assets. There is also no significant difference between firms that get short-term debt and those that get long-term debt in terms of intangible assets[3] in place.

Table 2

Determinants of the choice between long-term and short-term financial debt (bivariate analyses):

Panel A: VC backed companies

VARIABLE	LONG-TERM		SHORT-TERM		SIGN.
	Median	St. Dev.	Median	St. Dev.	
INV TANG/BTA	0.18	1.36	0.04	0.18	****
INV INTANG/BTA	0.00	0.59	0.00	0.14	
INTANG/TA	0.00	0.03	0.00	0.02	
ASSET MATURITY	0.43	0.21	0.27	0.22	****
DEFAULT RISK	0.31	0.27	0.50	0.26	****
SIZE	14.52	1.56	15.13	1.54	****
AGE	2.48	0.72	2.71	0.71	****
N	397		331		

Panel B: Non-VC backed companies

VARIABLE	LONG-TERM		SHORT-TERM		SIGN.
	Median	St. Dev.	Median	St. Dev.	
INV TANG/BTA	0.18	0.47	0.04	0.13	****
INV INTANG/BTA	0.00	0.03	0.00	0.01	
INTANG/TA	0.00	0.03	0.00	0.02	
ASSET MATURITY	0.39	0.22	0.24	0.22	****
DEFAULT RISK	0.21	0.23	0.40	0.27	****
SIZE	14.23	1.52	15.07	1.43	****
AGE	2.56	0.70	2.94	0.75	****
N	252		269		

Long-term: companies that issue new long-term financial debt (and possibly also short-term financial debt) / Short-term: companies that only issue new short-term financial debt

BTA: beginning of year total assets

TA: total assets

Sign.: Results of Wilcoxon test: Significance level: **** $p < 0.0001$

Companies that borrow on short term have a significantly higher default risk in comparison to companies that borrow on long term. This suggests that when short-term default risk becomes too high, firms might not be able to get long-term financing. Contrary to our expectations, Table 2 shows that firms that get long-term debt are on average smaller and younger than firms that use short-term debt. This suggests that long-term debt, and not short-term debt, is used more by firms which are typically characterised by large information asymmetries.

Multivariate Analyses

To further examine the determinants of debt maturity choice, we estimate the likelihood that a firm issues long-term financial debt, as opposed to short-term financial debt. In the multivariate analyses, LONG-TERM indicates that a firm uses new long-term financial debt or uses both new long- and short-term financial debt in a particular year. SHORT-TERM means that only short-term financial debt is used. The treatment of observations with simultaneous use of short-term and long-term debt does not impact on the results. Our result is robust when these observations are included in SHORT-TERM or are excluded from the analyses.

Two types of analyses are conducted: regular logit analyses and conditional (fixed effects) analyses. Whereas logit analyses study the maturity choice over all companies, conditional analyses focus on the choice between long-term and short-term debt within each firm. Two models are tested: in the first model investment opportunities are proxied by current investments in tangibles and in intangibles, in the second model they are proxied by intangibles to total assets.

Table 3
Determinants of the choice between long-term and short-term financial debt (multivariate logit analyses):
Panel A: VC backed companies

VARIABLE	Logit analyses[(a)]				Conditional logit analyses[(b)]			
	LONG-TERM		LONG-TERM		LONG-TERM		LONG-TERM	
	Coeff.	Sign	Coeff.	Sign	Coeff.	Sign	Coeff.	Sign
INTERCEPT	5.62	****	7.56	****	-		-	
INV TANG/BTA	4.08	****			3.38	****		
INV INTANG/BTA	-1.28	*			-0.70			
INTANG/TA			-2.27	*			-4.66	*
ASSET MATURITY	2.79	****	4.07	****	3.15	****	4.66	****
DEFAULT RISK	-4.81	****	-4.95	****	-4.82	**	-4.74	**
$(\text{DEFAULT RISK})^2$	2.97	***	2.41	*	2.21		2.02	
SIZE	-0.34	****	-0.44	****	0.16		0.22	
AFTER VC	0.40	*	0.28		0.94	**	1.02	***
Model		****		****		***		***
Pseudo R^2	0.25		0.19					
N	728		728		500[(c)]		500[(c)]	

Panel B: Non-VC backed companies

VARIABLE	Logit analyses(a)				Conditional logit analyses(b)			
	LONG-TERM		LONG-TERM		LONG-TERM		LONG-TERM	
	Coeff.	Sign	Coeff.	Sign	Coeff.	Sign	Coeff.	Sign
INTERCEPT	3.96	***	4.19	***	-		-	
INV TANG/BTA	5.19	***			6.38	****		
INV INTANG/BTA	10.84				-3.92			
INTANG/TA			10.01				-3.36	
ASSET MATURITY	1.74	***	3.01	****	3.02	**	3.87	***
DEFAULT RISK	-3.78	**	-2.96	**	-5.94	*	-4.40	
(DEFAULT RISK) ^{2}	1.53		0.16		3.43		1.44	
SIZE	-0.32	****	-0.34	****	0.051		0.61	
Model		****		****		***		***
Pseudo R^2	0.27		0.20					
N	520		520		295(c)		295(c)	

(a) Year and industry dummies are included in the analyses
(b) Year dummies are included in the analyses
(c) 113 companies (226 observations) dropped due to all positive or all negative outcomes
Long-term: companies that issue new long-term financial debt (and possibly also short-term financial debt) / Short-term: companies that only issue new short-term financial debt
The probability modelled is LONG-TERM = 1
BTA: beginning of year total assets
TA: total assets
Sign.: Results of Wilcoxon test: Significance level (2-sided): * 0.050 £ p < 0.100; ** 0.010 £ p < 0.050; *** 0.0001 £ p <0.010;**** p < 0.0001

Table 3 shows that companies that invest more in tangible assets prefer long-term debt. This may indicate that firms with higher investment opportunities use more long-term debt, contrary to hypothesis 1. However, it may also suggest that firms match the maturity of new debt to that of new assets. Investments in intangible assets are not or marginally negatively related to debt maturity. Our findings clearly support hypothesis 2. Both VC backed and non-VC backed companies match the maturity of existing assets and debt. The coefficient estimate on asset maturity of firms is positive and highly significant in all analyses.

We do not find a non-monotonic relation between the choices of debt maturity and default risk. The first two columns in panel A, Table 3, suggest otherwise as both the coefficients of default risk and default risk squared are significant. However, almost all observations on default risk are situated before the minima (0.81 and 1.02 respectively). This means that for all models a monotonic negative relation is found. This suggests that companies with a high default risk may not be able to get long-term debt.

Because a strong correlation exists between firm size and firm age (0.46), we are not able to disentangle size and age effects. We only include firm size in Table 3. In contrast to Barclay and Smith (1995), we find a negative relation between firm size and debt maturity, which contradicts hypothesis 4. Our results are consistent with the findings of Guedes and Opler (1996) and Scherr and Hulburt

(2001). They are also consistent with the negative relation found for a sample of small Belgian companies (Heyman et al., 2003). A negative relation is also found between firm age and maturity (unreported analyses), indicating that young firms are more likely to borrow long-term.

Panel A, Table 3, further shows that a positive relation is found between debt maturity and having received VC. Our results clearly support hypothesis 5 in that companies use more long-term debt, in comparison to short-term debt after VC participation. This suggests that as VCs lower information asymmetries and provide credibility and legitimacy, VC backed companies are better able to attract long-term debt. Hence, VC participation may reduce myopic behaviour of entrepreneurial companies, by not only focussing on short-term investment projects, ultimately leading to better economic performance.

Discussion and Conclusions

This study focuses on the financing choice of entrepreneurial companies. In particular, the determinants of the choice between short-term and long-term debt are examined. Explaining what determines the financing choices of companies is an important issue for entrepreneurship research. From a theoretical point of view, it is important to understand what determines the choice of financing and hence, what affects the cost and risk of companies. From a practitioner's point of view, it is essential to understand the drivers of financing choices.

This longitudinal study shows that important differences exist between companies that borrow long-term and those that borrow short-term. We do not find a consistent negative relation between our proxies for investment opportunities and debt maturity. The results clearly confirm the matching principle however. This is consistent with the view that firms try to reduce agency problems associated with existing debt by seeing to it that outstanding debt matures at the time replacement investment may be needed. This finding may also suggest that firms try to match the timing of cash inflow and cash outflows associated with assets. Diamond (1991) hypothesises a non-monotonic relation between default risk and debt maturity. However, we do not find support for the signalling hypothesis, which suggests that companies with low default risk signal their quality by using short-term debt. Our results show that as default risk increases firms may find it difficult to get long-term debt. Contrary to expectations, firms that are typically characterised by large information asymmetries, such as young and small firms, use more long-term debt.

Our findings that entrepreneurial companies do not always behave as hypothesised, is important. It shows that theories, developed and tested on large (quoted) companies do not always apply to entrepreneurial companies. Hence, much care should be taken when using large company theories to explain the behaviour of entrepreneurial companies.

Our study also provides insights in the impact of VC investors on the financial strategy of their portfolio companies. A good understanding of the impact of informed investors, such as venture capitalists, on the financing of entrepreneurial companies is important for entrepreneurs. Because VC investment is an expensive financing source (Manigart et al., 1997) associated with considerable loss of control, it is important for entrepreneurs to know whether venture capitalists may also influence their ability to get more long-term financing and hence, "whether VC is worth its money". We show that VC firms do indeed have a positive impact on the availability of long-term debt. Hence, by reducing information asymmetries and providing legitimacy, VC may play an important role in reducing myopic behaviour of companies. This insight is also relevant for policy makers. All over the world, governments have set up programmes to enhance the availability of long-term financing for entrepreneurial firms. The fact that VC firms may increase the access of entrepreneurial firms to long debt financing may be an important reason to further stimulate the development of this industry.

So far, little is known on the determinants of the financing choices of entrepreneurial companies. Our study provides some important insights in the determinants of the choice between short-term and long-term debt. A limitation of the study, however, is that so far we only take into account the maturity choice, given that debt is received. This choice, however, may be influenced by the choice whether or not to use debt (Guedes and Opler, 1996). Further, our sample is limited to Belgian companies. It may well be that not all results apply outside of Belgium.

Notes

(1) Venture capitalists sometimes provide subordinated or convertible loans to the companies in which they invest. Because the focus in this paper is on the impact of VC on the provision of loans by other capital providers, we exclude loans that are potentially provided by VCs.

(2) Current investments in tangible and intangible assets may also proxy for other factors. First, investments in tangible and intangible assets may be a proxy for the firm's financing needs. Moreover,

investments in tangible assets may proxy for the capacity of firms to collateralize: investments in tangible assets increase the collateral value that the firm can dispose of and hence, lead to a higher ability to acquire (long-term) debt (Baeyens and Manigart, 2003).

(3) The resuls on intangible assets should, however, be interpreted with caution because a lot of companies in our database do not report investments in intangible assets.

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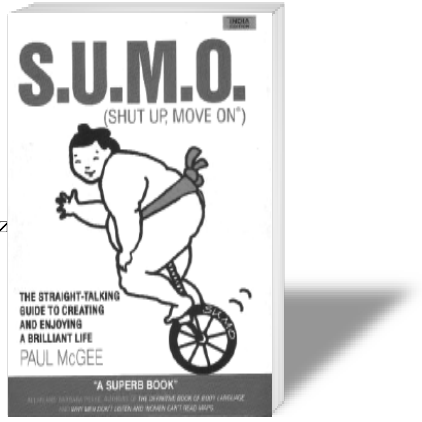
Skimming and Scanning



Book Title : *S.U.M.O. (SHUT UP, MOVE ON):*
The Straight talking guide to creating and enjoying a brilliant life
Author : PAUL McGEE
Edition : 2006
ISBN : 81 - 265 - 0648 - 2
Price : Rs.199/-
Pages : 136
Publisher : Wiley India (P) Ltd.

The worth of a book is to be measured by what you can carry away from it.

- James Bryce

Paul McGee describes his book S.U.M.O. (Shut up, Move on) as "The straight talking guide to creating and enjoying a brilliant life." S.U.M.O. is abundant wisdom and astuteness, a beautiful recipe to triumphant life-both personal and professional. Spanning across six chapters, each elucidating a sumo principle, McGee has taken the ceaselessly existing, omnipresent facts of life head on and has given undemanding suggestions to overcome such tribulations. In the first sumo principle (chapter as well) he treats the problem of self-victimization, in a piece of luminous ideation. He suggests that the 'victims' as each one of us believe we are, when chances are not in our favour, are generally so because of the T Shirt that we wear. 'Throw away the victim T Shirt,' asserts McGee as the first sumo principle.

'Develop fruity thinking' says the second sumo principle. Here the author has set an enlightening model for fruitful thinking named the TEAR model (Thinking à Emotions à Actions à Results). Faulty thinking, according to McGee leads to pitiable attitudes and pessimism, which is the disaster recipe for professional failures. The third sumo principle is for the 'still not convinced how to implement it in life' reader where McGee tells 'Hippo time is ok.' Hippo time is the time the reader may need to 'wallow' in before the actual adaptation. However it comes with a caution- "it should not be a place of permanent residence, wallowing is temporary, SUMO is forever." If the first three sumo principles focused on increasing our personal awareness, the fourth one emphasizes on steering us from our own world to the 'others' world.' Here the author classifies people as cheerleaders, carers, commanders, and thinkers and investigate how each type sees the world and behaves. He also gives guidelines as to how to use their traits better and how to get along fruitfully with the other types.

Paul McGee is stunningly simple and yet piercingly poking. In the fifth sumo principle, he puts it simple and unadorned. The four sumo principles are easy to grasp and easy to retain but it *may* make little or no change at all in the readers' life. Why? It is so because we procrastinate and offer excuses for not moving on to action. The author as the fifth principle asserts on the 'need to progress from intention to action.' The fifth and the last sumo principle starts with a note of warning to the readers not to get carried away by the Doris Day song which says "the future is not ours to see." McGee accuses it of being cynical and as transferring the 'Laissez faire' attitude to the general community.

The fifth sumo principle is but the crown jewel, so unswerving- 'Your destiny has not been decided, neither the moon, the star nor the fate decide it-YOU do.'

To sum up the sumo principles-

1) Take responsibilities in your life (Change your T Shirt)
2) Take charge of your thinking (Develop fruity thinking)
3) Understand how setbacks affect you and how to recover from it (Hippo time is OK)
4) Increase your understanding and awareness of other peoples world (Remember the beach ball)
5) Change comes through action, not intention (Learn Latin)
6) You decide your destiny (Ditch Doris Day)

S.U.M.O. is a fantastic idea, on plain essentials of life, which makes or mars personalities, all the obvious trivia's, it may seem but the ones which shapes our lives and the ones we all have a propensity to ignore.

S.U.M.O. is sparkling execution, in lucid and logical speech with some 'personal stuff' and 'points to ponder,' with a few sumo exercises and a summary in every chapter. Imaginative, insightful and inspiring S.U.M.O. is a must read and must follow for every trainer, teacher and pupil, in fact for every one who believes that success is the destination. A good book has no ending, it continues in the reader. Happy reading.

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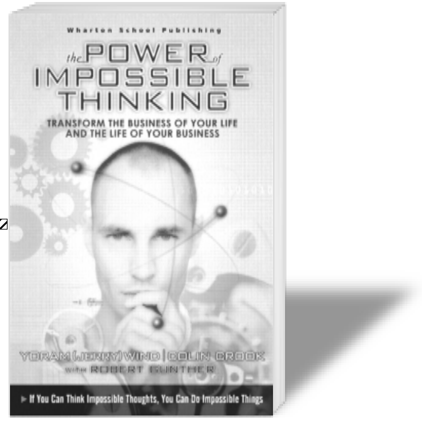

Title : *THE POWER OF IMPOSSIBLE THINKING*
Author : Yoram Wind/ Colin Crook
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Edition : First
Pages : 274

"If you keep doing what you have been doing, you will keep getting what you have been getting" seems to be the message that Yoram Wind and Colin Crook trying to be saying through this book. Besides the authors try to explain why we are doing what we have been doing now and how we can possibly change for the better.

Mental models are the brain processes that we use to make sense of our world. Drawing on the latest neuro-scientific research, the authors try to explain how the mental models stand between the person and the realty. As the old saying goes "My story, Your story and The Story." In the first section of the book the authors point out how mental models affect our perception of the world. It is essential that we understand how these mental models limit or expand the scope of our actions.

Hence the first task towards harnessing the power of impossible thinking is to recognize the power and limits of mental models. The author uses the example of Roger Bannister who shattered the barrier of running a mile within four minutes and within three years time 16 runners also completed running a mile within four minutes. The authors argue that the runners in the past had been held back by a mindset that said they could not surpass the four-minute mile.

The next step towards change to impossible thinking is to test the relevance of the mental models against the changing environment, generate new models and develop an integrated portfolio of models. The authors suggest to the readers to make informed judgment about changing their existing models else they will fall prey to the common mistakes of continuing with the wrong model or changing to a wrong model. The book gives certain signposts that enable the readers to understand when to change the mental models.

The authors also warn the readers about the resistance to change. One section of the book deals with the techniques to overcome the inhibitors to change by reshaping infrastructure and the thinking of others.

Final step towards impossible thinking is to transform the world by acting quickly upon new models, continuously experimenting and applying a process for assessing and strengthening your models. In this section, the authors stress the importance of developing intuitive thinking and the guts to experiment. The example of Howard Shultz is used to demonstrate the power of impossible thinking.

The book is interesting to read and it throws many insights that will provoke us to take a self-critical look at our own mental models.

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Yoram Wind is The Lauder Professor of Marketing, and Founder Director of Wharton Fellows Program and the SEI Center for Advanced Studies in Management at The Wharton School.

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