

# Prominence of Higher Order Needs: An Indian IT Sector Experience\*

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## Abstract

*Studies on motivation have provided directions to the managers in order to help them frame strategies to motivate professionals in their respective fields. Among different theories, Maslow's hierarchical needs have been discussed among the academia over a period of time. Though there is a wide acceptance to this theory among practising managers, in the context of changing environment, managers need to be vigilant to identify the impact on their changing needs. This study has been conducted in the IT sector as the professionals in the sector are highly goal oriented. Based on empirical findings, the researchers identified that the physiological and belonging needs are not very prominent, as the respondents prefer high order needs in the hierarchy. The study has been conducted with a standard questionnaire developed by Humanweb Technologies Private Limited with a sample of 80 IT professionals in India.*

*Two major hypotheses are developed in this study. The first hypothesis is that the need for 'Physiological and Belongingness' is low among the respondents in the IT field. The second hypothesis posits that the need for 'safety, self-esteem and self actualisation' is high. The results support the hypotheses and contradict the Maslow's principles that need for higher order comes only after the satisfaction of the lower level needs.*

**Key Words:** Motivation, Hierarchy of needs, Indian IT sector, Cluster analysis

## 1.0 INTRODUCTION

In a rapidly changing environment, success of any organisation depends on motivated employees. To be effective, an organisation needs to understand what motivates its employees within the context of the roles they perform which have now

become very complex. This is due to the difficulty in identifying the motivational factors as these are constantly changing (Bowen et.al,1991):

Motivational theories are very effective in helping the managers to understand their employees better (Buhler, 2003). To deal with the complexities of

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workforce and develop reinforcing strategies to motivate them is always a challenge. This is mainly because of the diverse character of workforce in the organization and the extent of differences among them.

Motivation has been defined as the psychological process that gives purpose and direction to behaviour (Kreitner, 1995). It is a predisposition to behave in a purposive manner to achieve specific, unmet needs (Buford et.al, 1995) and an internal drive to satisfy an unsatisfied need (Higgins, 1994) and the will to achieve (Bedeian, 1993). Hawthorne studies showed the direction to many researchers to study the factors that motivated employees and how they were motivated (Terpstra, 1979). The major motivation theories that followed were the Maslow's Need-Hierarchy theory, Herzberg's Two-Factor theory, Vroom's Expectancy theory, Adam's Equity theory, and Skinner's Reinforcement theory.

## 2.0 MASLOW'S NEED HIERCHY AND OPERATIONAL DEFINITIONS

Historically, the emphasis on higher order needs began with the birth of Maslow's need-hierarchy. Maslow (1954) himself emphasised the importance of such needs by postulating that in many instances the satisfaction of self-actualization can take

precedence over the satisfaction of even the most basic, survival-related, physiological needs. According to Maslow, employees have five levels of needs (Maslow, 1943): physiological, safety, belongingness, ego and self-actualisation

Maslow worked on humanistic counselling methods and coined the term 'transpersonal psychology' which is believed to develop a person's basic potential that could take precedence over other motivators. This striving to achieve one's highest potential, or self-actualisation, is the ultimate goal. Maslow argued that lower level needs had to be satisfied before the next higher level need would motivate employees. While Maslow presented his theory of Hierarchy of needs, it was not intended to apply to workplace motivation. However, it is important in this context to understand the meaning of hierarchical needs in accordance with the work setting. Table 1 presents the essential aspects of such operational definition.

An important aspect of the need hierarchy model is the classification of order of needs into two broad categories namely, lower order needs and higher order needs. Physiological, safety and social class of needs and some of the needs belonging to ego need category are grouped under lower order needs (also called deficiency

needs) and self-actualisation category of needs and some of the needs of the self-esteem category are grouped under higher order needs (also called Growth

needs). The lower order needs are potent only when they are in the state of deficiency or when they are deprived and hence called "Deficiency

**Table 1: Operational Definition of Hierarchy of Needs in Work Setting**

Hierarchy of Needs	Operational Definition
Self-actualization	Opportunity for creativity, achievement etc.
Self-esteem	Respect, Prestige etc
Belongingness	Teamwork, Group Cohesiveness etc
Safety	Job Security, Pension etc
Physiological	Good Salary, Incentives etc.

needs". The satisfying experience of higher order needs continuously energises motivation (or drive) of the people and keeps them in action. Hence, they are called "Growth needs" (Menon, 2004). According to Porter (1977), Maslow's hierarchy of needs sheds much light on what motivates people to seek out certain positions and therefore helps human resource professionals to determine how best to use these basic building blocks which encompass human nature. The importance of such studies are also highlighted by Fatehi-Sedeh et.al (1987).

### 3.0 PRESENT STUDY

The present study was conducted in the IT sector. Generally, the employees in this sector are found to be highly goal oriented and highly ambitious in professional growth. As a result, they

have different set of needs, aspirations and expectations than employees in other sectors (Singh, 2006). As the sector reflects the features of both the lower and higher needs of Maslow's model, the selection of the same is more valid. This paper is not intended to critically examine the Maslow's theory, but to apply the concepts to the IT sector. The objective of the study is to analyse the dimensional aspects of 'need hierarchy' of Maslow and gather empirical evidence to define it's role in the context of work setting in the IT sector.

### 4.0 METHODOLOGY

#### 4.1 Sample Size and Data collection

The selected companies for the study are listed in the National Stock Exchange (NSE). The context of the study has been well explained to the

respondents before the collection of data. Total sample consisted of 80 middle level executives\* of the selected companies. From each company, two middle level executives were selected. The selection was purely based on judgment of the researcher. The list of respondents was prepared on the basis of company records. Regular interactions with these selected persons helped to build a good rapport with them before the data collection. All the queries of the respondents were addressed immediately before the data collection.

The study has been conducted with a standard questionnaire published in [humanlinks.com](http://humanlinks.com), which assesses individual needs under each level of hierarchy. *(The site is managed by Human-web Technologies Private Limited and it was started in 1998).*

The promoters of the website comprise a group of professionals from premier institutes in India like IIM, XLRI and IISc. The proposed questionnaire comprised 20 statements related to five need categories. Statement number 1,4,16 and 20 represented basic needs; 2,3,8,19 represented safety needs; 5,7,12 and 15 represented belonging needs; 6,9,14,17 represented esteem needs; and statements 10,11,13 and 18 represented self-actualisation needs. Each statement

could have seven possible responses and scores ranged from -3 to +3. The response and score are strongly agree (+3), agree (+2), slightly agree (+1), don't know (0), slightly disagree (-1), disagree (-2), strongly disagree (-3). Responses were converted into a score sheet automatically on a scale ranging from -12 (low) to +12 (high) under each hierarchy of needs. Based on the intensity of the score, each level in the hierarchy of needs was predicted and interpreted for all the respondents. Finally, the overall levels of hierarchy of needs were predicted.

A pilot study was initiated for a small group consisting of 20 executives and confirmed the possibilities for a wide survey. Internal consistency of data was tested through Guttman's split half reliability method. The value of reliability co-efficient for five items together ( $\lambda$ ) is .7290. The test shows high reliability of data collected.

## 5.0 FINDINGS

The average age of the respondents was 35 years and has an average experience of six years. Gender-wise distribution showed that 55% of the total respondents were male and all were married. The average annual salary estimated was Rs.10 lakhs. As seen from Table 2, the 't' test shows

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\*Middle level executives are already getting good salary, incentives, scope for team-work and group cohesiveness. Now they look for safety, self esteem and self-actualization.

**Table 2: One-sample 't' test**

	Test					
	T	d	Size	Mean Difference	95% interval of the	
					Lower	Upper
Physiological needs	59.4	7	.00	6.20	5.99	6.40
Belongingness	63.3	7	.00	6.47	6.27	6.67
Self-esteem	32.9	7	.00	9.25	8.69	9.80
Safety	37.4	7	.00	9.32	8.82	9.82
Self-actualization	34.3	7	.00	9.20	8.66	9.73

that all the hierarchical needs (physiological needs, belongingness, self-esteem, safety, self-actualisation) are significant (the 'p' value is less than the .05 significant level).

The overall score (ranging from 1-12) of the respondents is placed in the Table 3. The number of respondents under each score is given separately. Majority of the respondents (81.25% and 73.75%) of both 'physiological and belongings needs' are having the score 'six'. However in the case of needs such as 'self-esteem, safety and self-actualisation', the respondents' score is more than 'seven'. For example, more than 35 % of the total respondents are placed under the score of '10' and in the case of self-actualisation, it is 33.75%.

The significance of this can be easily understood from mean and standard deviation. The mean value for the need

'physiological and belongingness' are low (6.20 and 6.48 respectively) when compared with other hierarchical needs (self-esteem (9.25), safety (9.33), self-actualisation (9.20)). Table 4 shows the mean value for the various needs.

The ANOVA test confirms that the need for motivation for all categories is same among both male and female. There is no gender-wise difference in this respect. The 'p' value is greater than the significant value at .05 at all the levels of hierarchical needs (the values are physiological needs (.444), belongingness (.789), self-esteem (.790), safety (.150) and self-actualisation (.166)). This indicates that further analysis on gender basis has no relevance. Table 5 represents the analysis of variance performed on each need category.

**Table 3: Score of Respondents on Hierarchical Needs**

Hierarchical Needs	Respondent's Score											
	1	2	3	4	5	6	7	8	9	10	11	12
Physiological Needs	-	1 (1.25)	-	2 (2.5)	-	65 (81.25)	-	12 (15.00)	-	-	-	-
Belongingness	-	-	-	1 (1.25)	-	59 (73.75)	-	20 (25.00)	-	-	-	-
Self-esteem	-	1 (1.25)	-	6 (7.50)	-	7 (8.75)	-	16 (20.00)	-	28 (35.00)	-	22 (27.50)
Safety	-	-	-	3 (3.75)	-	7 (8.75)	-	28 (35.00)	-	18 (22.50)	-	24 (30.00)
Self-actualization	-	2 (2.25)	-	2 (2.25)	-	9 (11.25)	-	20 (25.00)	-	27 (33.75)	-	20 (25.00)

Note: 1. Figures in columns represent number of respondents. 2. Figures in the parentheses represent the percentage of the total i.e. 80.

**Table 4 : Descriptive Statistics across Needs**

Hierarchical Needs	Mean	Std. Deviation
Physiological needs	6.2000	.9332
Belongingness	6.4750	.9137
Self-esteem	9.2500	2.5133
Safety	9.3250	2.2263
Self actualization	9.2000	2.3941



The graphical representation as shown in Figures 1 and 2 of this result clearly plots the distinction.

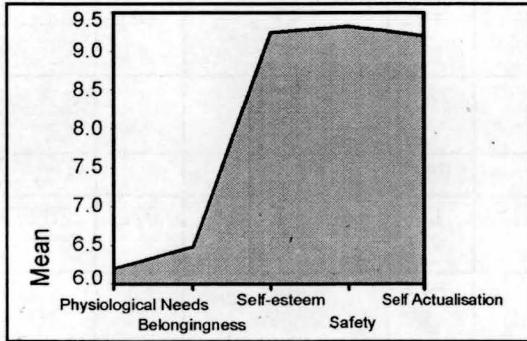


Figure 1: Area-wise Graph representing Hierarchical Needs

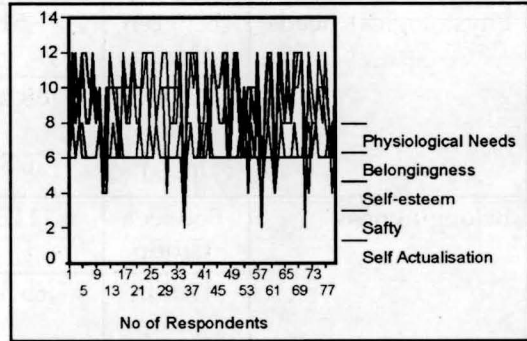


Figure 2: Plot Diagram for individual respondents

## 6.0 DISCUSSION

Based on the above findings, three propositions are made for further study.

### 6.1 Proposition 1

The need for 'Physiological and Belongingness' are low among the respondents in the IT field. This reflects that the need for basic supportive system is low. Such an opinion on the intrinsic needs generates out of self-fulfillment. This confirms their satisfaction in this respect. The present pay package in the IT sector is fair enough to meet the physiological needs of the respondents. The average pay package is Rs.10 lakhs per year excluding perks for the employees in the industry, this is sufficient enough to fulfill their needs. This gives them

a feeling of security and safety to meet their primary needs. As a result there is no dearth for further fulfilling this need. This means that the respondents are trying to reach the next stage.

The third stage of Maslow's hierarchical need is the need for belonging and love, which pay attention to the acceptance of belongingness needs in the workplace. The respondents are mostly falling in the low score (6), which gives some indication that in today's organisation, interpersonal relations play only a limited role. Investigations based on these findings reveal that the respondents are not much bothered about interpersonal relations in the work environment. Rather, it reflects the diluting nature of relationship. This

**Table 5: Analysis of Variance Performed on Each Need Category**

Hierarchical Needs		Sum Square	Df	Mean Square	F	Sig.
Physiological needs	Between Group	.517	1	.517	.591	.444
	Within group	68.283	78	.875		
	Total	68.800	79			
Belongingness	Between Group	6.111E -02	1	6.111E- 02	.072	.789
	Within group	65.889	78	.845		
	Total	65.950	79			
Self-esteem	Between Group	.455	1	.455	.071	.790
	Within Group	498.545	78	6.392		
	Total	499.000	79			
Safety	Between Group	10.328	1	10.328	2.113	.150
	Within Group	381.222	78	4.887		
	Total	391.550	79			
Self -actualization	Between Group	11.063	1	11.063	1.953	.166
	Within Group	441.737	78	5.663		
	Total	452.800	79			

naturally questions the conventional notion of the importance of 'belongingness' in the 'new organisations'. Does this mean that the social needs are losing while one move up to the other hierarchical needs? Does the internalisation of

social networking wither away from today's employees? Does it mean that group belonging is declaiming and individual thinking is increasing? One must consider these aspects for future research.



## 6.2 Proposition 2

The need for 'safety, self-esteem and self actualisation' is high among the respondents in the IT field. The second argument is based on the high score of the need for safety, self-esteem and self-actualisation. Here, it is important to note that the need for safety/security/stability is a major concern for the respondents. This naturally raises concern about the present set up of IT organisations in providing job security or guarantee for an employee to serve long period in the parent organisation. The score reflects a high need for security.

On the top of the pyramid of motivation, two high order needs have high score. The theoretical context of such needs highlights the satisfaction of lower order needs and then the high order needs. However, the findings of the study reflects that even the lower order needs such as belongingness are not a necessary condition for fulfilling high order one. The expectations/ambition of the employees are very high in IT organisations and the tendency is to reach self-actualisation stage within the minimum time period. The desire to move for better prospects/career is high among employees in the IT sector. So, the need for a sense of

self-worth among the employees must be mentioned in this context. According to Singh (2006), IT professionals truly represent the highest stage of Maslow's hierarchy of needs, namely 'need for self-actualisation'. The factors like high opportunities to self-expression, creativity, and individual values had a great influence on them.

## 6.3 Proposition 3

A noticeable feature in the IT sector is that, contradictory to Maslow's principles that need for higher order comes only after the satisfaction of the lower level needs, may not be applicable. This is evident from their low priority for social needs and physiological needs. The low priority for social needs is due to long hours of work to meet deadlines for project completion, thereby reducing time for social networking. In fact, it is a straight bypass from the need of safety to the need of self-esteem by avoiding belongingness. This confirms that in the IT sector, the higher order needs are very significant.

## 7.0 IMPLICATIONS

The implication of this study is discussed with cluster analysis. The arguments developed in the previous paragraphs do not match with the conventional thinking of satisfying

hierarchical order of needs one after another, especially in the IT organisations. One could notice that there is a dearth for high order of needs fulfillment among the respondents. There is a lukewarm attitude towards the social belongingness within the organisation. This reflects a gradual transformation of outlook from social to self-centredness. Here, we are not examining the merit and demerits of such transformation and its implications for the society. However, the issues within the IT sector need to be strategically addressed and suitable intervention strategies need to be framed.

In this context, to verify the similarity of responses on various needs, a hierarchical cluster analysis is done. This analysis helps to separate the similar respondents into the same cluster. The Dendrogram (Figure 3) projects how each respondent is related to other respondents on the need hierarchy in a scale of 0 to 25. The final cluster divides the respondents into two categories. The first category consists of only 15 respondents and remaining (65) are in the second cluster. The mean value of self-esteem and self-actualisation of the respondents in the first cluster

**Table 6: Final Cluster**

	Cluster	
	1	2
Physiological Needs	6.13	6.22
Belongingness	6.27	6.52
Self-esteem	5.60	10.09
Safety	6.80	9.91
Self-actualization	5.73	10.00

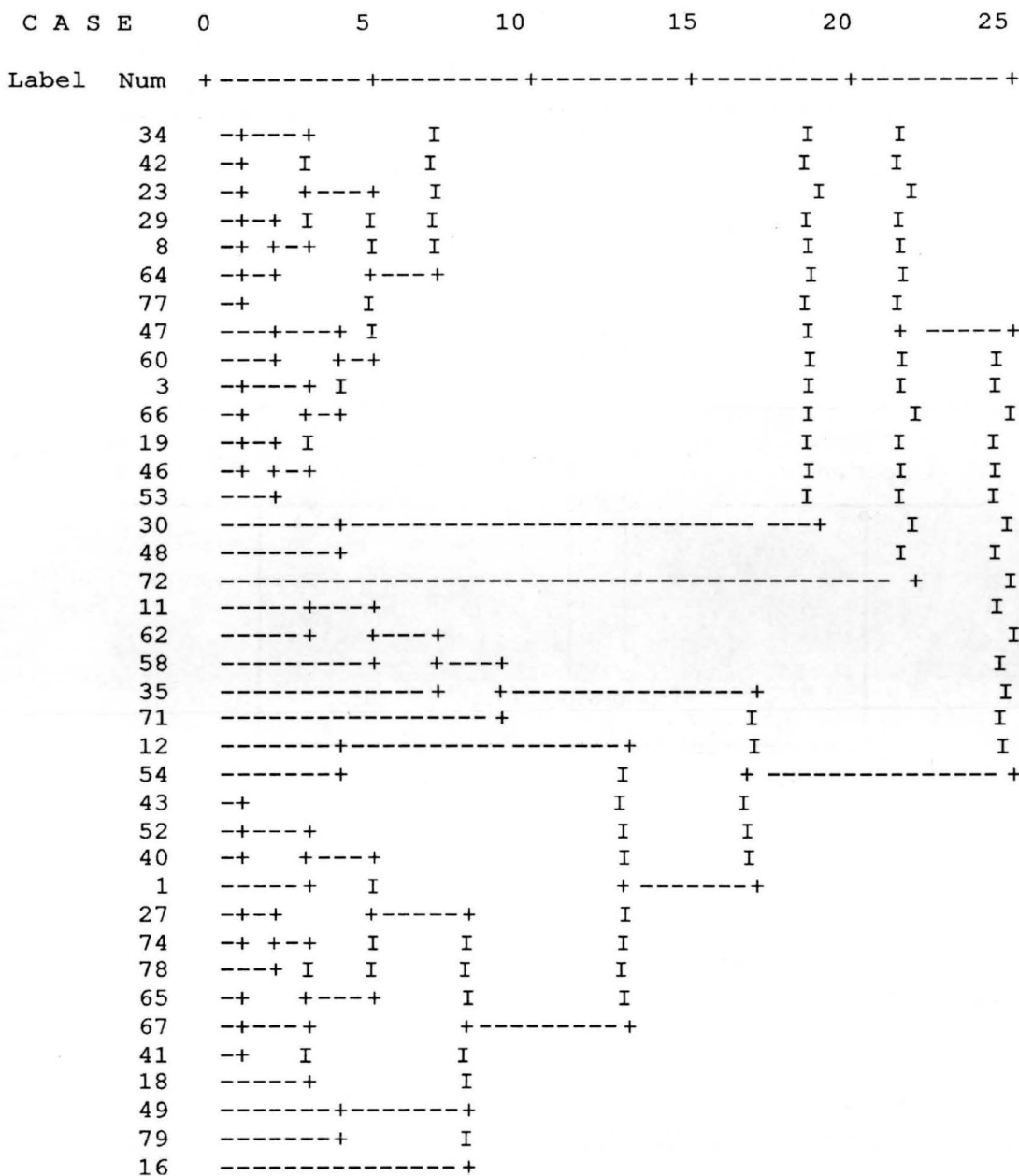
**Table 6. a Number of Cases in each Cluster**

Cluster	1	15.000
	2	65.000
Valid		80.000
Missing		.000

are comparatively lower (5.60 and 5.73) when compared with other hierarchical needs. At the same time in the cluster two, the mean value for the need for self-esteem and self-actualisation and safety are high (10.09, 10.00 and 9.91 respectively). This implies that in the IT sector three important hierarchical needs (such as self-esteem, self-actualisation and safety) are very high.

If one consider the age of the respondents, it is surprising to note that even at a relatively younger age (average age is 35 years) the thirst for higher order needs are found to be very high. An important

**FIGURE 3: Dendrogram**  
**HIERARCHICAL CLUSTER ANALYSIS**



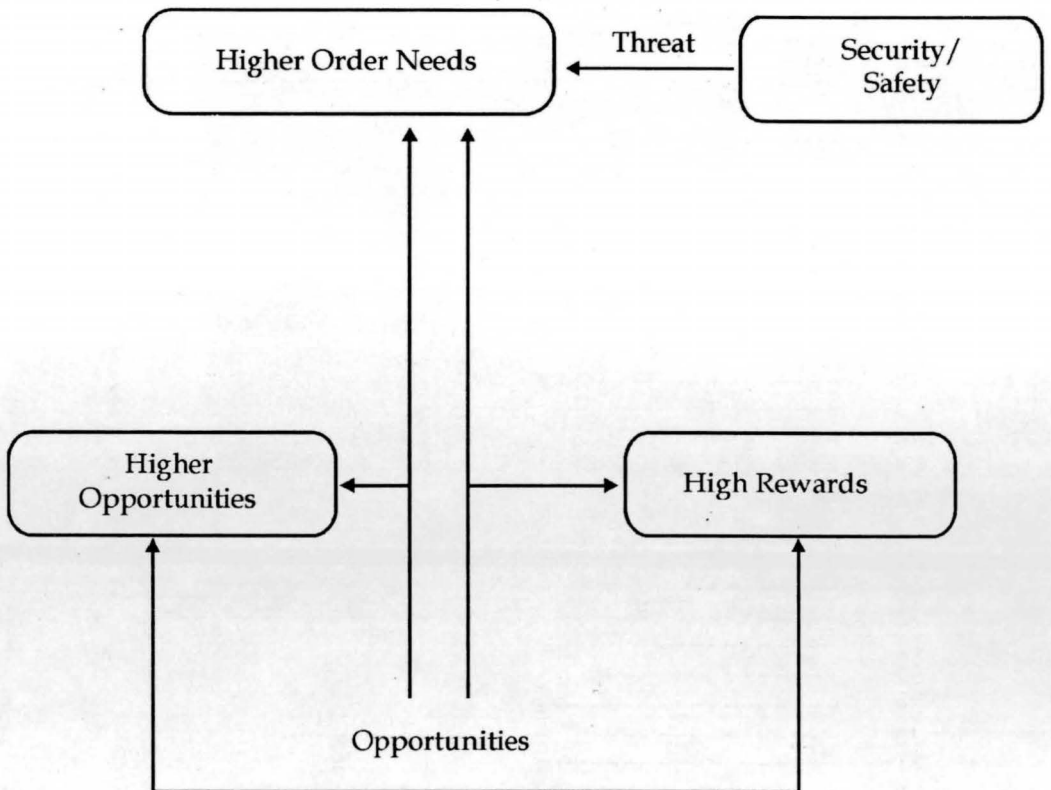


Figure 4: Needs-Opportunities-Rewards Model in IT

area of concern is the safety and security of the employees in terms of provident fund, gratuity, pension etc. Overall there is a feeling of insecurity among the employees. By applying Maslow's model in the IT sector, the study suggests that the model must be redefined based on the intensity of

each need. The proposed model clearly differentiates itself from the original hierarchical model in that the physiological and belongingness needs have shrunk according to the extent of the unfulfilled needs.

Analysis on the various reasons for the emergence of such high order

needs in the IT employees divides into two major components such as: - high rewards in the industry and increasing opportunities (thanks to liberalisation). However, the major area of concern is the security/safety in such sectors. A Needs-Opportunities-Rewards Model in IT sector is framed to establish these relations. The model can change according to new conditions emerging as shown in Figure-4.

## 8.0 CONCLUSIONS

In this study, the authors have tried to apply the 'need hierarchy' of Maslow in the IT sector. They found that in this sector, physiological and belongingness needs are low. At the same time, the need for safety, self-esteem and self-actualisation are on the higher side. This contradicts with the original theory of Maslow. Further, there is a direct movement from safety to self-esteem needs. The rationale behind this finding is explained with the 'Needs-Opportunities-Rewards Model.

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# Towards Evaluating the Risks of Software Services Outsourcing Industry\*

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## Abstract

*Modern knowledge based economy is fuelled by Information and Communication Technologies (ICT). One of the principal constituents of ICT is software. Software industry can be classified into software products and software services industries. Software services industry provides outsourced software services to clients, and has grown rapidly in the last few decades. In order to maintain sustainable global competitiveness, software services outsourcing industry must successfully counter and mitigate myriad risks in conducting business and sustaining competition. Existing risk assessment methods rely on measuring probability of risk events, which is difficult to measure in real life. This paper presents a more practical method of risk assessment through articulation of risk factors involved at every stage of the software project management, from bid to completion of the project. Use of this method has been demonstrated through a real life case study.*

**Keywords:** *Software services outsourcing, Software projects risk management, Software project life cycle, Risk incident, Risk factors, Software project risk index*

## 1.0 GLOBAL SOFTWARE SERVICES OUTSOURCING INDUSTRY: CURRENT STATUS AND FUTURE POTENTIAL

Software industry can be divided into software products industry, and software services industry. Software product vendors (Microsoft or Oracle for example) develop and market software products and may offer services around their own products such as implementation or

customization. Software services vendors do not develop their own products for marketing (although they may develop products of their own to augment their service capabilities) and only provide software related services to other organizations.

From the software user or client point of view, software services can be obtained from in-house departments, or from a vendor. Procuring software

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