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CONTENTS

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   NEED/IMPORTANCE OF THE STUDY

   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

   SCOPE FOR FURTHER RESEARCH

   ACKNOWLEDGMENTS

   REFERENCES

   APPENDIX/ANNEXURE

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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
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- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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WEBSITE

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

ACCELERATED LEARNING SOLUTIONS (ALS) – A MODEL FOR LEARNING ON THE JOB & PRODUCTIVITY ENHANCEMENT OF FRESH ENGINEERING GRADUATES THROUGH TITP (TELECOM INDUSTRY TRAINING AND PLACEMENT)

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ABSTRACT

Two decades of economic liberalization has helped in creating a large number of employment opportunities in the Indian industry. The number of engineers graduating each year in India is almost twice that of the US and a little less than twice the number of individuals graduating as engineers across Europe. It is heartening to note that India has one of the world's largest and most qualified pools of technical manpower. The proliferation of professional colleges is the catalyst for this trend. This has resulted in a quantum jump in the number of engineers being churned out of our academic institutions. However the lack of 'Job ready' skills in the university curriculum coupled with the assessment system of majority of the colleges, with high weightages on theoretical competencies, instead of practical know-how is definitely causing a major concern for the industry. The gap between eligibility and employability is almost 75% in the long run the gap will create a major bottleneck in India's economic growth. The Network Learning Center of a leading telecom player has bridged this knowledge gap and accelerated the learning curve of fresh engineering graduates by deploying a blended learning solution. The Telecom Industry Training & Placement program for fresh engineering graduate spread over 12 months guides, moulds and prepares them for challenging opportunities in the telecom services domain. This paper presents the Accelerated Learning Solutions (ALS) framework developed by NLC and empirically validates the model through primary research data garnered over a period of three years.

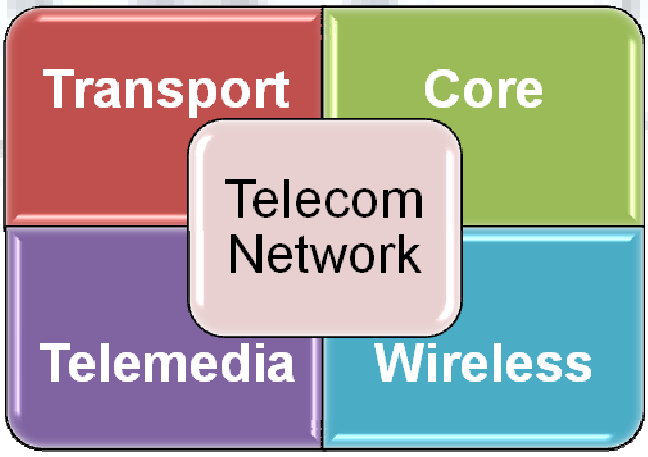
KEYWORDS

Accelerated Learning Solution, Learning & Development, Mentoring, On-the-job training, Self Learning.

1.0 INTRODUCTION

The Indian Telecommunication network is the third largest in the world and the second largest among the emerging economies of Asia.. The Indian telecom industry has witnessed tremendous growth in the last 10 years due to the liberal policies of the government and the extensive need for communication. With over 865 million mobile phone users & 100 million Internet users, Indian Telecom Industry is the fastest growing market in the world. The rapid strides in the telecom sector have been facilitated by policies (NTP 94, 99 & 2011) of the Government that provide easy market access for telecom equipment and a fair regulatory framework for offering telecom services to the Indian consumers at affordable prices. The modern day telecom network is a convergence ready broadband network, spread over large geographical area through terrestrial, submarine and satellite links, with a scalable and restorable global NGN footprint, MPLS enabled CORE data network, certified MEN network (e.g. MEF forum), integrated BSS-OSS to support complex suite of services with end-to-end connectivity provided over fiber. The network is generally organized around four major domains as highlighted in the figure 1 below.

FIGURE 1 – TELECOM NETWORK – PRIMARY DOMAINS



The technologies deployed include Plesiochronous Digital Hierarchy (PDH), Synchronous Digital Hierarchy (SDH), Dense Wavelength Division Multiplexing (DWDM), Optical Transport Network (OTN), Microwave, VSAT and Optical Burst Switching (OBS) on the transport domain, 2G to 3G, GSM to UMTS, CDMA to HSD in the Wireless domain, Switching to Routing, IP to MPLS, TDM to NGN Soft Switch, Utilities, OSS and many more. The services provided includes POTS, PRI, Leased line, VoIP, HSD, Video Calling, Ethernet Leased Lines, L3-VPN, Mobile TV, Mobile broadband on 3G, etc. In order to manage these network elements Network Management Systems (NMS) as well as Element Management Systems (EMS) are deployed.

Network Learning & Development function is generally tasked with the responsibility of ensuring the readiness of the organizational manpower to quickly adapt to the technological advancements, in consonance with the business requirements while maintaining high learning standards. The Network Learning Center (NLC), an ISO 9001:2008 certified entity of a leading integrated telecom player, was established in the year 2002 with an expectation to build a world class learning facility that could take care of the technology training demands of the present and the future. Over the past nine years NLC has trained & certified more than 32,000 employees through instructor led trainings through contact as well as distance learning programs. In addition over 61,000 employees were certified using proprietary self learning methodologies. The NLC portfolio comprises of over 220 Instructor Led Training (ILT) courses and 92 Self Learning Modules (SLM) on cutting edge telecom equipment, technologies and services in the domains and functions listed in the previous section. The NLC lead trainers (Subject Matter Experts – SME) are functionally aligned to the domain experts. This liaison ensures the learning function is aligned to the business and reflects the ground realities. Courses are designed & developed based on identified needs by the lead trainers and the functional experts. The NLC takes care of the technology and product requirements of the network group.

2.0 RESEARCH PROBLEM

The Shortage of talent in the telecom domain is one of the main impediments for further growth and development in this sector. The Indian economy grew more than 8% on average over the past 5 years, including the year of the unprecedented financial crisis in 2009. The higher education system has responded to the increased demand for technical manpower by massively expanding the output of engineers graduating annually. The number of students enrolled in engineering colleges has increased 800 percent during the span 1998 to 2008. (MHRD 2009). This quantitative expansion is widely perceived to have led to an average decline in the quality of the students entering the engineering colleges, the quality of teaching staff and consequently, the quality of the graduating engineers (Jha et al. 2009). The challenge is to create a knowledge pool and secure the future of the budding engineers by imparting skills that are required by the industry. With more and more players entering the industry, the competition in terms of attracting and retaining the talent is also increasing. The key problems that form the basis of this research study can be summarized as under:

1. The telecom sector has a huge demand for trained and qualified engineers.
2. With Attrition rates of 25 to 30 percent, the role of HR in this sector is to accelerate the learning curve of fresh engineering graduates and bridge the skill gap thereby meeting the industry & organizations demand for skilled, trained and experienced manpower.

3.0 LITERATURE SURVEY

The literature survey focused on works relevant to organizational learning. The major works listed in this section are the ones that have influenced the NLC training model.

RESEARCH PAPER [1]

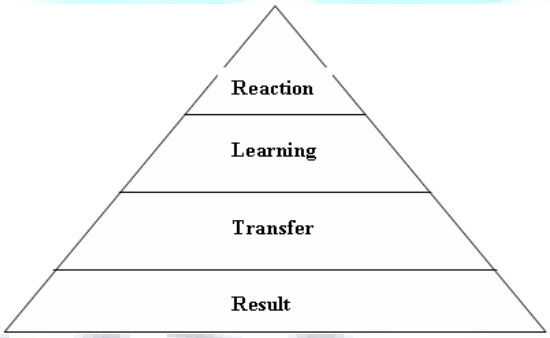
Combs et al (2006), "How Much Do High-Performance Work Practices Matter? A Meta-Analysis of their Effects on Organizational Performance"

The above research includes data from a survey of more than 19,000 organizations and establishes the linkage between organizational learning and organizational performance. The impact of vertical alignment of HR practices and their support to strategic business objectives and work context were enumerated as a part of the study. The employee (especially fresh recruits) engagement activities, like mentoring, initiated by the NLC are in consonance with the above studies.

MODEL [2] - KIRKPATRICK MODEL (1994)

Kirkpatrick Model is the most widely used model for organizational learning and evaluation. Kirkpatrick's four levels are designed as a sequence of steps to evaluate training programs. As one proceeds through each of the levels, the evaluation becomes more difficult, requires more time and provides more information. The model is depicted in the figure 2 below:

FIGURE 2 - KIRKPATRICK MODEL



The four levels of Kirkpatrick's evaluation model essentially measure:

1. REACTION

It indicates the feedback of the participants with regard to the coverage, deliverability, content, presentation and duration of the program.

2. LEARNING

The purpose of this stage is to obtain information on the quantam of learning by the trainees. Getting feedback in an organized manner helps in correct and valuable evaluation.

3. TRANSFER

Transfer measures changes in on-the-job behavior. It is very important to give time to learners to reflect on their learning at their work place.

4. RESULTS

Evaluation at this level consists of an attempt to measure trainees on the job productivity and effectiveness.

JOURNAL [3]

Mark Huselid, The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance, April 5, 1995, Academy of Management Journal, Vol. 38, No. 3, pp. 635-672, 1995

This study comprehensively examined the linkages between systems of High Performance Work Practices and organizational performance. The results based on a national sample of nearly one thousand firms indicate that these practices have an economically and statistically significant impact on both intermediate outcomes (turnover and productivity) and short- and long-term measures of corporate financial performance. The support for the predictions that the impact of High Performance Work Practices is in part contingent on their interrelationships and links with competitive strategy was limited. The major conclusions of the study were:

1. Systems of High Performance Work Practices (HPWPs) will decrease turnover and increase productivity and performance
2. Turnover and productivity will mediate the relationship between HPWPs and performance
3. Complementarities or synergies among HPWPs
4. Alignment between HPWPs and competitive strategy will reduce turnover and improve productivity and performance.

SURVEY [4]

Skill shortage remains one of the major constraints to continued growth of the Indian economy. This employer survey seeks to address this knowledge-gap by answering three questions:

(i) Which skills do employers consider important when hiring new engineering graduates?
(ii) How satisfied are employers with the skills of engineering graduates?
(iii) In which important skills are the engineers falling short?

The results confirm the widespread dissatisfaction with the current engineering graduates—64 percent of employers not satisfied with the quality of the new hires. The factor analysis of the data collected reveals that employers perceive Soft Skills (Core Employability Skills and Communication Skills) to be very important. Skill gaps are particularly severe in the higher-order thinking skills ranked according to Bloom's taxonomy. In contrast, communication in english has the smallest skill gap, but remains one of the most sought after skills by the employers. Although employers across India require the same set of soft skills, the demand for professional skills differ greatly based on economic sectors, geographic regions and organizational size. The key recommendations of the survey for engineering education institutions are as listed below:

1. Improve technology skill sets of graduate engineers
2. Provide soft skill training to students
3. Refocus the assessments, teaching-learning process, and curricula away from lower-order thinking skills, such as remembering and understanding, toward higher-order skills, such as analyzing and solving engineering problems, as well as creativity
4. Interact more with employers to understand the particular demand for skills in that region and sector.

4.0 ALS - TELECOM INDUSTRY TRAINING AND PLACEMENT

The Telecom industry training and placement program based on the ALS framework (figure 3), emphasizes on getting fresh engineering graduates quickly on-boarded and productive in a live telecom network, so as to ensure Operations, Maintenance, & Provisioning of network functionalities meet business Key performance Indices (KPI) and customer expectations. The ALS program accelerates the learning curve of fresh engineering graduates by engaging them to learn, develop and enhance their on-the-job productivity and performance by a combination of:

- Instructor led Classroom & Distance Learning – Induction Training Program
- On-line Interactive Self Learning Modules (i.SLM) – Blended Self Learning
- On-the-job Mentoring - Effective Decision Making & Problem Solving Skills
- Cross Functional training & Job rotation - Job Enrichment
- Project Presentation, Certifications, Quizzes, Workshops, Seminars & Conclaves – Talent Development & Competency Building

FIGURE 3 – ALS TRAINING MODEL

4.1 INDUCTION PROGRAM

The eight week induction program initiates the fresh engineering graduates to the organization and prepares them for their new role by providing required training, tools and. The program presents an opportunity for fresh recruits to understand the organization's expectations from their job function. The program is conducted by NLC trainers who are functionally aligned and provide the recruits with insights to design, development and functioning of modern telecom networks. The induction program helps in developing:

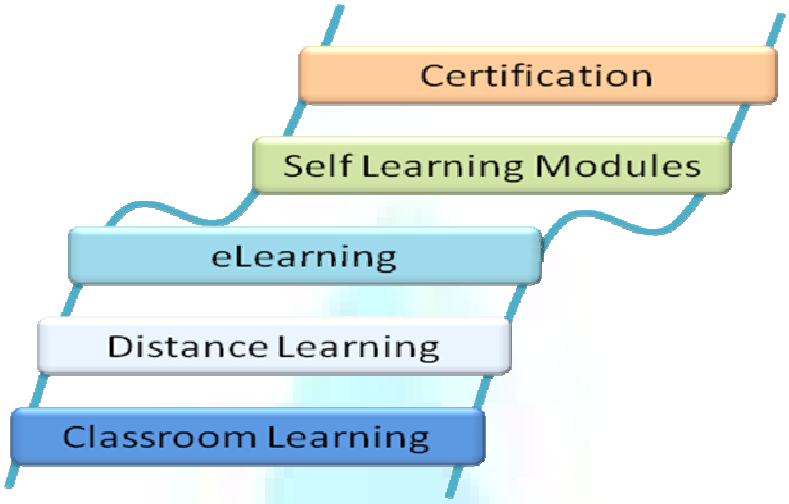
- Technology, Concepts & its practical application within the Network
- Understanding of the modern day telecom network architecture, products and their functionalities
- Trainings on soft skills to enhance communication skills, time management skills, team building & interpersonal skills
- Exposure to integrated technology labs for equipment and management systems hands-on practice
- Troubleshooting & problem solving skills on live network
- Network Provisioning and operation & maintenance skills for Fault surveillance and performance management of live telecom networks
- Understanding ground realities through field visits
- Training on occupational safety and preventive measures while working on the network.

The NLC trainers take responsibility of the new recruits and educate them on the organizational mission, vision, culture and policies besides developing key skills and competencies that are required to work on the functional domains of modern telecom networks. On successful completion they are certified to be placed on the Network roles with clear-cut KRA's and deliverables. They are periodically brought back to the classroom for advanced functional trainings and SLM certifications.

4.2 BLENDED SELF LEARNING [5]

NLC has trained & certified employees through instructor led trainings (ILT) as well as distance learning (DL) programs. Using the experiences as well as the feedback gained during these years, NLC has developed a Blended Learning Model that meets the training requirements as well as the challenges posed to the telecom industry. The model is depicted in the figure 4 below:

FIGURE 4 –BLENDED LEARNING MODEL



The model uses a mix of conventional instructor led training (ILT), direct as well as over audio/video conference, for theory as well as product and services hands-on, supplemented by Self Learning Modules (SLM's). All the modules include an evaluation mechanism to validate employee learning. Depending upon the role and function every employee has to undergo certain mandatory trainings as well as optional voluntary self learning. A competency chart lists down the desired skill sets corresponding to role, function and domain. It is mandatory for the employee to get certified in all the listed skill sets. This is in tune with the organizational mantra "Voluntary Self Learning & Mandatory Certification".

SELF LEARNING MODULES

SLM's are learning solutions designed for participants to facilitate anywhere, anytime and on demand learning. SLMs are animated audio-video presentations that offer a flexible learning option to employees. SLM duration is typically between 30 minutes to 60 minutes and is based on generic topics ranging from technology or product overview to specialized topics including Operation & Maintenance of telecom equipments, demonstration of maintenance activities etc. An advanced version of an SLM, Interactive SLM (i.SLM) simulates live scenarios thereby offering real time experience to the learners. These modules help an employee optimize their time spent in learning and contribute to improved productivity and operating efficiency.

INTERACTIVE SLM (*i*SLM)

Online integrated interactive self learning activities are designed to simulate classroom ILT experience. *i*SLM (Interactive Self Learning Module) are a series of interactive, self-paced learning modules delivered completely online. They are a convenient, flexible and cost-effective way to train new employees, or to increase the skill levels of existing staff. It is intended for engineers working at Network Operation Center (NOC), system operators, network administrators, field staff, installation and commissioning to manage, maintain and monitor telecom network. The blended learning method ensures that organizational employees learn, maintain, and upgrade skills required for better on-the-job performance & provide them with the competitive edge needed to meet business goals.

4.3 Mentoring – Driving Employee Talent Development

Mentoring fosters a work culture that is marked by positive energy, team work, performance ethics that translates into enhanced productivity of graduate engineering trainees. The mentor is a trusted and experienced advisor who achieves a one-to-one developmental relationship as "friend, philosopher, guide" and moulds the fresh engineering recruits into dynamic telecom professionals.. The key benefits of the mentoring program are:

- Ongoing support and on-the-job encouragement
- Enhanced Productivity & Quality of Service
- Knowledge, Performance & Skills Improvement
- Effective Decision-making & Problem-solving skills
- Encouragement & Motivation to face organizational challenges
- Career Opportunities & Advancement
- Greater Confidence & Well being

4.4 JOB ENRICHMENT

Job enrichment is primarily through on-the-job training and job rotation of fresh recruits across the four primary network domains.

ON –THE- JOB- TRAINING

This process involves assignment of specific tasks to the fresh engineering recruits that is evaluated by a 4-tier hierarchy comprising of the immediate supervisor, department head, mentor and HR. The tasks are assigned in such a manner that it facilitates hands-on learning, in line with the job function and organizational requirements. Effective monitoring is done based on the hierarchical model; the key parameters evaluated include technical knowledge, communication skills, analytical skills, team work, psycho-motor skills and achievement of KRAs. The trainings are in the areas of fault management, surveillance and trouble ticket management, service order management, network planning & engineering and operations & maintenance of

- Optical Fiber Cable and Utilities
- MSC, BSC and BTS of CDMA, GSM & 3G Network
- Routers and Switches of Data Networks
- PDH and SDH Transport Network equipment
- Microwave, Satellite & Wi-Max equipment

JOB ROTATION & ENRICHMENT – MULTI SKILLING

ALS contributes to the multi-skilled development of engineering graduates through a job rotation policy. This ensures that the employees are rotated in the four major network technology domains during their training, thereby, enabling them to acquire cross functional skills and end-to-end problem solving and troubleshooting skills which are required to place them in their area of interest.

4.5 TALENT DEVELOPMENT & COMPETENCY BUILDING

Each trainee will be assigned a project in their area of work by the department head in consultation with the mentors. The project would encompass the study of existing/future technologies and their application in the telecom or a study of existing network issues and their solutions. NLC evaluates the project report in consultation with reporting manager, functional head and HR head. There are two projects assigned to the recruits during their training period.

ONLINE QUIZZES (QUIZ@THON)

In addition to the regular training and self learning activities, NLC in conjunction with SMEs conducts quizzes in general areas of interest and work-job areas to ascertain the general awareness levels of the fresh recruits.

5.0 RESEARCH METHODOLOGY

This section outlines the methodology adopted for this research.

5.1 RESEARCH OBJECTIVES

1. The primary objective of this research is to validate the efficacy of the ALS model in the telecom service industry.
2. The secondary objective is to establish the knowledge gap between fresh college recruits and private sector telecom industries.
3. Generate a talent pool of highly skilled and domain specific manpower to cater to the telecom industry demands.

5.2 HYPOTHESIS

H1: ALS Model is effective in inducting fresh graduates into the highly competitive telecom industry environment.

H2: There exists a significant gap in the skill levels of engineering college pass outs and the telecom industry demands.

5.3 SAMPLING DESIGN

A stratified random sampling technique was adopted for the purpose of this study. The study included the analysis of the recruitment of graduate engineers during the period 2009-2011. The performance of the recruits during the period 2009-2011 was also collected to analyze the efficacy of the ALS model. The sample size of 280 was used for this study.

5.4 DATA COLLECTION

This paper is based on primary research data collected by the NLC. The paper analyzes the performance of 240 fresh engineering recruits during the period 2009 to 2011. This period corresponds to period of active involvement of NLC in the recruitment process. For assessing the employee recruitment data a sample of 40 candidates from the total number of 280 was chosen. The employee performance was captured from the online Employee Performance Management System (PMS).

5.5 DATA ANALYSIS, INTERPRETATION AND HYPOTHESIS TESTING

The data collected was subjected to standard statistical analysis to ensure their validity. A single tail ANOVA-test was used to verify the hypothesis.

The table 2 below lists the performance analysis of the fresh graduates recruited during the period 2008 – 2009. The performance analysis is based on data corresponding to the same period.

TABLE 1 – PERFORMANCE ANALYSIS OF FRESH RECRUITS

Performance Analysis - Fresh recruits						
	PMS 08-09		PMS 09-10		PMS 10-11	
PMS Rating (1=Poor,5= Excellent)	Percentage	Count	Percentage	Count	Percentage	Count
5	4%	3	16%	13	39%	31
4	11%	9	48%	38	34%	27
3	85%	68	31%	25	27%	22
2	0%	0	5%	4	0%	0
1	0%	0	0%	0	0%	0

The above table conclusively establishes the efficacy of the induction program and its positive influence on the performance of fresh engineering graduates. The Anova of the summary data results in a 'p' value of nearly zero, validating hypothesis H1. It can be thus inferred that the ALS model provided in accelerating the learning curve resulting in fresh engineering graduates being assigned predictive roles in a very short span of time

The table 3 below presents the recruitment statistics of a sample of 40 fresh engineers out of totoal population of 280, corresponding to the period 2009 – 2011:

TABLE 2 – RECRUITMENT STATISTICS – FRESH ENGINEERING GRADUATES

Fresh Recruitment Stats - Sample - 2009 to 2011		
Scores	Percentage	Count
70-80	5%	2
80-90	32%	13
90-100	52%	21
100-110	7.50%	3
>110	2.50%	1

From the above table it is evident that only 4 candidates out of 40 samples (10%) have obtained a consolidated score of over 100 out of 150, in the multiple staged recruitment process. A score of 100 and above is indicative of skills that can be readily used by organizations. Only 25 out of 40 candidate obtained 60% and above in the recruitment process – the minimum cutoff for recruitment. This indicated a wide disparity in university curriculum and telecom industry requirements. The Anova of the summary recruitment table returned a 'p' value of zero validating the hypothesis H2.

5.6 RESEARCH LIMITATIONS

This research was based on the recruitment and performance data of fresh engineering graduates placed in fault management, performance management and provisioning functions. The model needs to be tested with similar data of lateral hires as well as employees with an experience ranging from 3 to 5 years in network planning & engineering and O&M functions.

6.0 KEY FINDINGS & CONCLUSION

1. Accelerated learning solution has succeeded in bridging the industry-academic skill gap and improved the performance of the fresh graduates. This has been possible by developing curriculum tailor made to industry requirements.
2. The TITP program based on the ALS model has been able to enhance the skill sets as well as the productivity levels of fresh engineering graduates bringing them at par with experienced employees of 3-5 years in similar roles.
3. The TITP program assures a stream of trained manpower to meet the ever growing demand of organizations in the telecom industry.
4. Universities/Engineering Colleges need to radically alter their curriculum structure, delivery and assessment mechanism models to meet industry demands. The present curriculum focuses on developing lower-order thinking skills, such as remembering and understanding. The focus of the colleges/universities should be on developing higher-order skills, such as analyzing and solving engineering problems while creating an environment that fosters creativity in field operations.
5. The result of this research confirms the industry assessment that the individuals graduating from engineering colleges do not possess the skills relevant to their operational requirements.

6. There is a need for a common industry-academia forum to work out interventions that create a win-win situation for all the concerned stakeholders – Universities, Colleges, Organizations, Faculties as well as students.

7.0 SCOPE FOR FURTHER STUDY

1. The ALS model needs to be validated using data from organizations across the telecom industry.
2. The model should be tested based on the skill and performance assessments of lateral hires as well as employees with 5-8 years experience.
3. This research was based on the recruitment and performance data of fresh engineering graduates placed in fault management, performance management and provisioning functions. The model needs to be tested with similar data of lateral hires as well as experienced employees in network planning & engineering and O&M functions.

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APPENDIX

TABLE 4 – DESCRIPTIVE STATISTICS – PERFORMANCE DATA

	PMS 08-09	*PMS 09-10*	*PMS 10-11*
Mean	3.1875	3.75	4.1125
Standard Error	0.053644841	0.088052056	0.090696583
Median	3	4	4
Mode	3	4	5
Standard Deviation	0.479814046	0.787561531	0.811214904
Sample Variance	0.230221519	0.620253165	0.65806962
Kurtosis	6.257588516	-0.372812527	-1.447937958
Skewness	2.614128416	-0.159465251	-0.210602125
Range	2	3	2
Minimum	3	2	3
Maximum	5	5	5
Sum	255	300	329
Count	80	80	80
Largest(1)	5	5	5
Smallest(1)	3	2	3
Confidence Level(95.0%)	0.106777384	0.17526323	0.180527031

TABLE 5 – ANOVA – PERFORMANCE DATA

Anova: Single Factor						
SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
PMS 08-09	80	255	3.1875	0.230222		
PMS 09-10	80	300	3.75	0.620253		
PMS 10-11	80	329	4.1125	0.65807		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	34.75833	2	17.37917	34.56146	6.75E-14	3.03392
Within Groups	119.175	237	0.502848			
Total	153.9333	239				

TABLE 6 – DESCRIPTIVE STATISTICS – RECRUITMENT DATA

	MAT Score	TAT Score	GD Score	Total	PI Score	G.Total
Mean	33.475	29	15.075	77.55	13.625	91.175
Standard Error	0.714311126	0.535891302	0.149303941	1.009537848	0.491840473	1.192867424
Median	33	29	15	77	14	91
Mode	33	28	15	78	15	91
Standard Deviation	4.517700232	3.389274183	0.944281032	6.384877968	3.110672283	7.544356016
Sample Variance	20.40961538	11.48717949	0.891666667	40.76666667	9.676282051	56.91730769
Kurtosis	-0.80198368	0.952291065	1.286672444	1.795581704	1.077571452	0.729281924
Skewness	0.076239815	1.048198342	0.99882181	1.10019528	0.519779961	0.664096761
Range	16	13	4	30	15	33
Minimum	26	25	14	66	8	78
Maximum	42	38	18	96	23	111
Sum	1339	1160	603	3102	545	3647
Count	40	40	40	40	40	40
Largest(1)	42	38	18	96	23	111
Smallest(1)	26	25	14	66	8	78
Confidence Level(95.0%)	1.444830615	1.08394246	0.301995722	2.04198302	0.99484125	2.412802086

TABLE 7 – ANOVA – RECRUITMENT DATA

Anova: Single Factor						
SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Total (125)	40	3102	77.55	40.76667		
PI Score (25)	40	545	13.625	9.676282		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	81728.11	1	81728.11	3240.418	2.72E-65	3.963472
Within Groups	1967.275	78	25.22147			
Total	83695.39	79				

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