e-learning Scope and Trend in India

Preprint · January 2020

DOI: 10.13140/RG.2.2.23177.19042

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1.1 Chapter Introduction

Indian companies started developing educational products based on electronic media in early nineties. This was time when e-learning started gaining attention in India. Then very few companies started developing e-learning products on experimental basis. As it was a new business area, majorly the startups took the challenges of e-learning development and marketing. In the early days, Indian e-learning Industry was majorly dependent on the export of the developed products. They were mainly working on educational content development for students of different foreign institutions, employee training programme of different corporates, banks and also for some professional institutes. At the same time, they were trying to make entry in the Indian market. In the initial stage, prior to 2000, Indian e-learning market was not very responsive. In spite of the non-encouraging result, Indian players continued their attempts to make e-learning popular and acceptable in India. As a result of their continuous effort, Indian e-learning market started improving at the beginning of 2000. ICICI Bank, Tata Steel, Symbiosis are the pioneers in the implementation of e-learning in India. Tata Interactive Systems (TIS) was the first Indian organization which started the e-learning development initiative in India in a structured way.

1.2 Chapter Objectives

The objectives of the present chapter are:

- Identification of e-learning scope in different business segments in India
- Study the e-learning trend in India

1.3 Approach

The approach for this study is represented in the Figure 4-1.

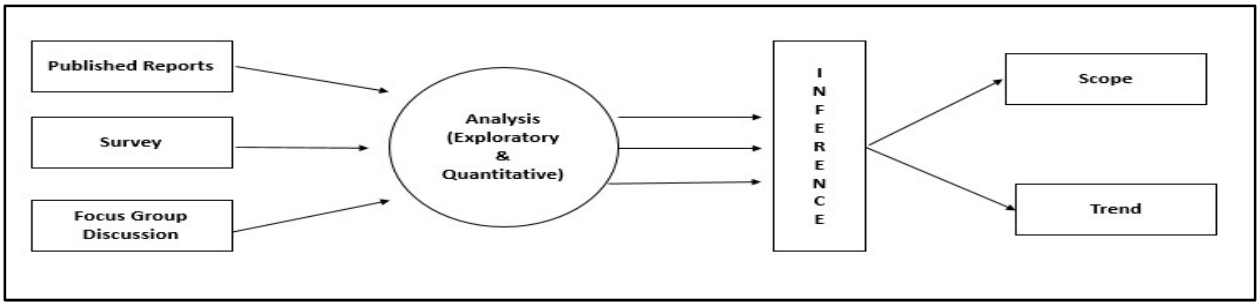

Figure 0-1: Approach for the scope and trend analysis

In this present context extraction from the published reports, pieces of literature and summary of focus group discussion will be used to identify the scope of e-learning in the Indian context. Results of surveys conducted time to time to understand the awareness, usability, acceptance and perceived future of e-learning will be used.

1.4 Analysis and Result

This study has been conducted in two phases:

- Phase-I: Scope of e-learning in India
- Phase-II: Trend of e-learning in India

1.5 Scope of e-learning in India

In India, internet usage is currently showing an increasing trend. According to research report [5], Indian internet usage will be around 550 million by 2020. Indian e-learning market is showing increasing trend with the increase of internet usage. In India, the estimated e-learning market size is $22 Billons and expected to reach $ 32 B in 2020 and education sector is contributing the most. The internet usage trend is represented in Figure-4-2.

There are three major e-learning market segments in India. These are described in the subsequent sections.

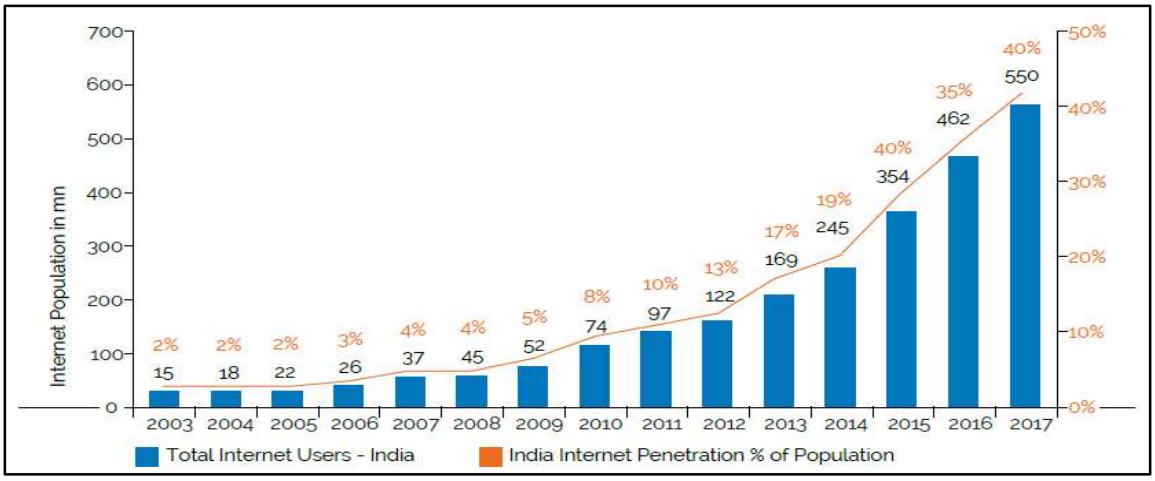

Figure 0-2: Indian Internet usage trend (Source: IAMAI, World Bank, CNNIC, Technopak Analysis)

1.5.1 K-12 Learning

"The K-12 segment is the largest and most attractive segment for digital learning providers in India. The total enrollment is around 260 million. The digital learning in the K-12 space comprises of three major sectors. These are Smart Class, Online Tutoring, and Online Exam Preparation. There are other specific segments including Simulation and Virtual Reality, STEM Learning, AI, and Robotics. The segments like Simulation, STEM, Tablet Learning, and Online Tutoring are at an initial stage of adoption. However, these sections have a massive potential. The Key players in these segments are doing research to improve the market penetration in this sector" [5].

Smart Class:

"The Smart Class is an innovative approach to new edge learning. It uses digital technology for supporting learning in a different way. The Smart Class solution market is dominated by private sector education service providers. This market comprises of traditional education companies (e.g. Everonn, Navneet) to IT heritage companies (e.g. NIIT, HCL, Tata Interactive Systems, Tata Class Edge, Educomp) and start-ups (e.g. TeachNext). The competition in this segment has recently increased due to increase in the internet usage. These companies provide multimedia tools (hardware and software) that help in effective teaching using innovative learning techniques. The multimedia and online formats of learning are innovative, effective; however, it is not a substitute for traditional learning" [5].

“The current market size for digital classrooms in India is estimated at US$ 1bn, out of which the ICT market for private schools is estimated at US$ 266mn and that of government schools is approximately US$ 740mn.The market is expected to grow at a CAGR of 13% over the period 2016-2020. “ [5]

Online Tutoring:

“Online tutoring is another segment in K-12 education. It has emerged in the last 5-6 years. In India, there are two different business models for online tutoring. In model one, the firm recruits’ teachers to provide online classes on firm's online platform. On the other hand, the firm collects information about the teachers and student gets in touch with the teachers via the company. Then the teacher provides online tuition with their own arrangements.

The Online Tutoring is currently a US $3.5 million market growing with a CAGR of 30% over the period 2016-20.Some of the key players in the segment are Vedantu, My Private Tutor, and Eduwizard” [5].

Assessment:

“Assessment for K-12 involves testing modules for skills learned in different subjects. It gives emphasis on the application of knowledge rather than plain knowledge. These tests focus on reasoning, thinking, and interpretation of data. Currently, some competitive examinations are happening through the online examinations. These assessments are helpful in the preparation of the competitive examinations and mock tests. This segment is estimated at US$ 28 Million with a growth rate of 20% “[5].

The summary of findings in this area is presented in Table-4-1.

Parameter(s)	Analysis findings
Market	e-learning market in India is at nascent stage and highly under-penetrated with more than 90% of the schools still untapped. e-learning market comprises of • Multimedia in private schools- Digital content and solutions at schools • Online Education- Online certifications/ courses and online tutoring

Parameter(s)	Analysis findings
Driver and Challenges	**Drivers:** Low penetration in schools, an increase of broadband penetration, government initiatives and demand for online courses **Challenges:** Long receivable cycle and recognition issues
Trend	• The education sector has many deals in e-learning on the back of growing demand for online content in the schools • Government is increasing the computer literacy in the public schools by public private partnership • Private schools are moving to hybrid teaching models involving traditional and digital content to make the teaching quality better • Online certification by foreign universities are gaining importance in the Indian market
Competition	Educomp is the biggest player in this field followed by NIIT. Other players include Edurite, Gurukul Online Learning Solutions, Hurix systems. The Corporate Social Responsibility (CSR) of Tata group, Tata Class-edge is now capturing the most of the Indian market for the K-12 sector
Current Scenario	The multimedia companies are providing content, necessary infrastructure and maintenance help to the schools. They are charging the students a fee for digital classes and share revenue with the schools. In this model from the year 2007 it has been observed there is a steady 8-10% growth of the business till August 2017.

Table 0-1: Summary of Indian K-12 learning (Source- Online Education on India 2021, Report by KPMG)

1.5.2 Higher Education and Working Professionals

As per industry reports [5] the online professional education market globally is expected to exceed US$ 9 B by 2020, growing at compound annual growth (CAGR) of 14% from 2016 – 2020.In India, a couple of business schools like Symbiosis, later on, Sikkim Manipal University (SMU), shown interest in developing e-learning course for their students. Prototyping was done, sample courses developed, approved and released for the students. These courses are basically for the students enrolled in the distance learning mode. In recent past, Punjab Technical University (PTU) started operating all over the India for providing distance education through different franchises. Since inception, the university was keeping a focus on e-learning as mode of distance learning.

Initially audio led page turner courses were developed for as a part of curriculum and successfully deployed for the students. In recent times, IITs (especially IIT Delhi and Kharagpur) and IIMs are added to the list of successful e-learning implementers. These initiatives are at very basic levels and needed some time to be matured.

"Employability is a major factor that is considered by learners seeking online professional education. Market leaders like Simplilearn, AnalytixLabs, Jigsaw Academy, NIIT, Cisco Systems, and Eureka have been providing world-class education in over 150 countries and have redefined the concept of professional education by helping out millions of students, professionals, and educators. They are also providing career opportunities to their students" [5].

The main areas considered for online learning are:

- Analytics
- Project Management
- Learning software and application development
- Cloud computing and defining sales-force development
- Digital Marketing

In general, technology-enabled learning is gaining importance and popularity in the Indian educational sector [5].

1.5.3 Corporate

Indian majors like Tatas, ITC, HUL, P&G (though corporates) started showing interest in e-learning as a part of their employee training in the initial days of e-learning implementation in the India. Their objective was very simple, keeping the workforce updated, informed about the new technologies across the globe. Also they wanted to train their employees in the organizational policies, safety etc. in a cost effective manner.

The major areas covered through organizational e-learning initiative are:

- Product Training
- HR, Regulatory and Compliance Training

- Workplace Safety
- New Hire Onboarding
- Software and Systems Training
- Sales and Service Training
- Quality and Processes
- Soft Skill and Leadership

Also, e-learning is used as a means of product training material for the clients. Sometimes, instead of the product manual, companies are providing e-learning courses to the clients for better understanding. The use of e-learning for employee training by sectors in the Indian context is summarized in Table-4-2.

Sector	**The organization initiated e-learning for employee training**
Telecom, Media, and Technology	• Tata Communications Limited • Vodafone India • Tata Sky • Idea Cellular • Aircel • MTS India • Tata Teleservices • HCL Technologies • NRIFinTech India
Manufacturing, Energy, and Construction	• Hindustan Unilever • Indian Tabaco Company (ITC) • Tata Steel • Tata Chemicals • ABB • BOSCH • GMR Group • Liliput- Mfg
Service	• The Taj Hotel Group • Volvo India • Tata Consultancy Services • Cognizant Technology Solutions India • Erricson India • IBM India • Wipro India • Genpact • Amazon India
Healthcare and Life Science	• Apollo Hospitals Group • Strides-Phar

Sector	The organization initiated e-learning for employee training
	• Piramal Group • Dr. Reddy's Lab
Banking Finance Service and Insurance	• Magma Financial Corporation • Punjab National Bank • ICICI Bank • HSBC

Table 0-2: e-learning deployment summary of Indian organizations by Segments

1.5.4 Summary – Scope of e-learning in India

The scope of e-learning in different segments of India has been discussed in the sections 4.5.1.1 to 4.5.3.1. The overall summary is as follows:

- There are three major segments in the Indian e-learning market. The sectors are K-12, higher education & professional studies and corporates
- K-12 sector is the major consumer of Indian e-learning
- The scope of e-learning in different segments is showing increasing trend

1.6 Trend of e-learning in India

An empirical study was conducted to understand the familiarity, perceived prospect and effectiveness of e-learning in the Indian context. As a part of the activity, couple of surveys were conducted at different intervals to capture the voice of the learners from the following educational segments;

- Schools
- Colleges
- Universities
- Professional certification bodies and
- Corporate

The study detail is summarized in the subsequent sections.

1.6.1 Objective

The objectives of the study were:

- To study the awareness level, understanding of Indians learners (from different segments) regarding e-learning based on following 7 parameters;

- Familiarity with e-learning
- Comfort level with e-learning
- Perception on e-learning effectiveness
- Perception on e-learning acceptance
- Cost-effectiveness
- Availability of Infrastructure
- Perception on future of e-learning

- To capture the requirements or expectations of Indian learners to make e-learning more successful and effective

1.6.2 Sample

This study was conducted twice during the research period. It was conducted first time in Nov 2013 and the same study was repeated in March-2017. The responses are summarized in Table 4-3 and 4-4 respectively. The number without parenthesis indicates the count of total responses and the number within the parenthesis represents the percentage of positive responses for a particular parameter by the respondents from a particular category.

Survey Parameters	**School**	**College**	**Universities**	**Industry**	**Professional Bodies**
Familiarity	396 (68.5)	426 (76.6)	560 (89.2)	706 (77.4)	380 (83.7)
Comfort Level	358 (61.9)	418 (75.2)	552 (87.9)	698 (76.5)	334 (73.6)
Effectiveness	344 (59.5)	402 (72.3)	536 (85.4)	614 (67.3)	344 (75.8)
Acceptance	356 (61.6)	414 (74.5)	556 (88.5)	642 (70.4)	312 (68.7)
Cost Effectiveness	312 (54)	374 (67.3)	490 (78)	602 (66)	290 (63.9)
Infrastructure	286	380	462	644	276

Survey Parameters	School	College	Universities	Industry	Professional Bodies
	(49.5)	(68.3)	(73.6)	(70.6)	(60.8)
Future	348 (60.2)	420 (75.5)	550 (87.6)	668 (73.2)	344 (75.8)

Table 0-3 : Sample Summary 2013

Parameters	School	College	Universities	Industry	Professional Bodies
Familiarity	542 (72.5)*	580 (92.4)	844 (95.5)	706 (85.7)	418 (87.1)
Comfort Level	532 (71.1)	570 (90.8)	836 (94.6)	698 (84.7)	392 (81.7)
Perception about effectiveness	534 (71.4)	576 (91.7)	838 (94.8)	614 (74.5)	412 (85.8)
Acceptance	540 (72.2)	580 (92.4)	834 (94.3)	642 (77.9)	396 (82.5)
Cost Effectiveness	512 (68.4)	570 (90.8)	828 (93.7)	602 (73.1)	410 (85.4)
Infrastructure	504 (67.4)	574 (91.4)	814 (92.1)	644 (78.2)	402 (83.8)
Future	536 (71.7)	570 (90.8)	840 (95)	668 (81.1)	412 (85.8)

Table 0-4 : Sample Summary 2017

1.6.3 Methodology

To capture the voice of learners, one questionnaire [ANNEXURE-1] was designed with 14 questions in Likert Scale ranging from 1 to 5 (where 1 = strongly disagree and 5 = strongly agree). Also, an open-end question at the end of the questionnaire was provided to collect the feedback of the respondents. Answering all the questions was mandatory. The readability of the questionnaire was tested with 25 participants and no readability issue was observed. Validity and reliability testing of the questionnaire was

done to check whether it can be used to capture the voice of the learners effectively. The validation was done using following steps:

1. Establish Face Validity: Validity by an expert to understand if the questions effectively capture the topic under investigation.
2. Pilot test: Pilot testing the of collected data with 65 selected respondents
3. Clean Dataset: Removal of outliers from the data set checking the ratings for same positive and negative questions
4. Principal Components Analysis: Identification of the underlying component. It was observed that factor loadings are greater than 0.6
5. Cronbach's Alpha: The overall value was 0.7

These results confirm validity and reliability of the instrument.

1.6.4 Analysis and Discussion

The survey outcomes (i.e. the positive response percentages) are summarized in Table 4-5

Parameters	School		College		Universities		Industry		Professional Bodies	
	2013	**2017**	**2013**	**2017**	**2013**	**2017**	**2013**	**2017**	**2013**	**2017**
Familiarity	68.5	72.5	76.6	92.4	89.2	95.5	77.4	85.7	83.7	87.1
Comfort Level	61.9	71.1	75.2	90.8	87.9	94.6	76.5	84.7	73.6	81.7
Effectiveness	59.5	71.4	72.3	91.7	85.4	94.8	67.3	74.5	75.8	85.8
Acceptance	61.6	72.2	74.5	92.4	88.5	94.3	70.4	77.9	68.7	82.5
Cost Effectiveness	***54.0***	***68.4***	***67.3***	***90.8***	***78***	***93.7***	***66***	***73.1***	***63.9***	***85.4***
Infrastructure	***49.5***	***67.4***	***68.3***	***91.4***	***73.6***	***92.1***	***70.6***	***78.2***	***60.8***	***83.8***
Future	60.2	71.7	75.5	90.8	87.6	95	73.2	81.1	75.8	85.8

Table 0-5 : Comparative analysis of the research data

The trend of positive response is summarized in Figure 4-3 to 4-7

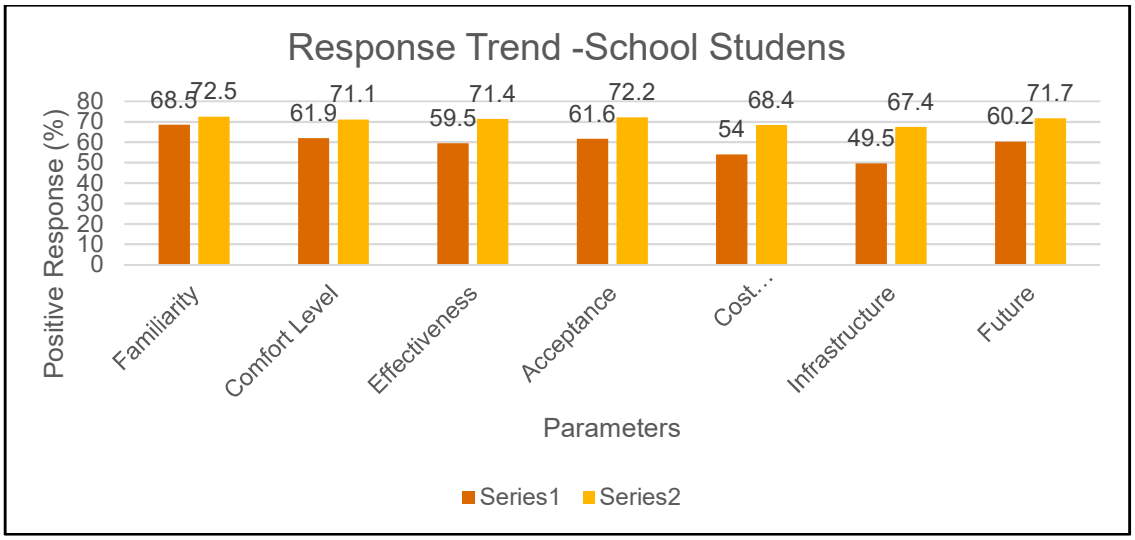

Figure 0-3 : Response trend school students

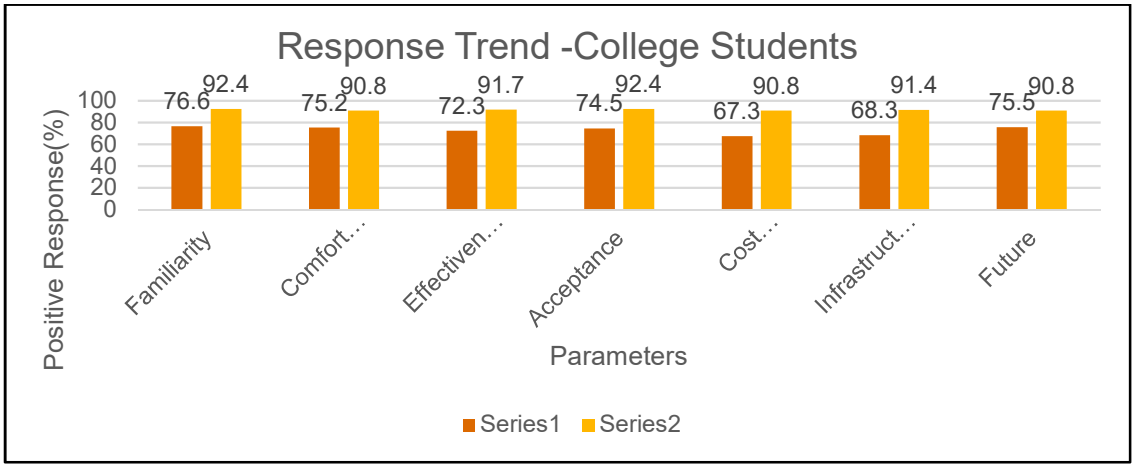

Figure 0-4 : Response trend of college students

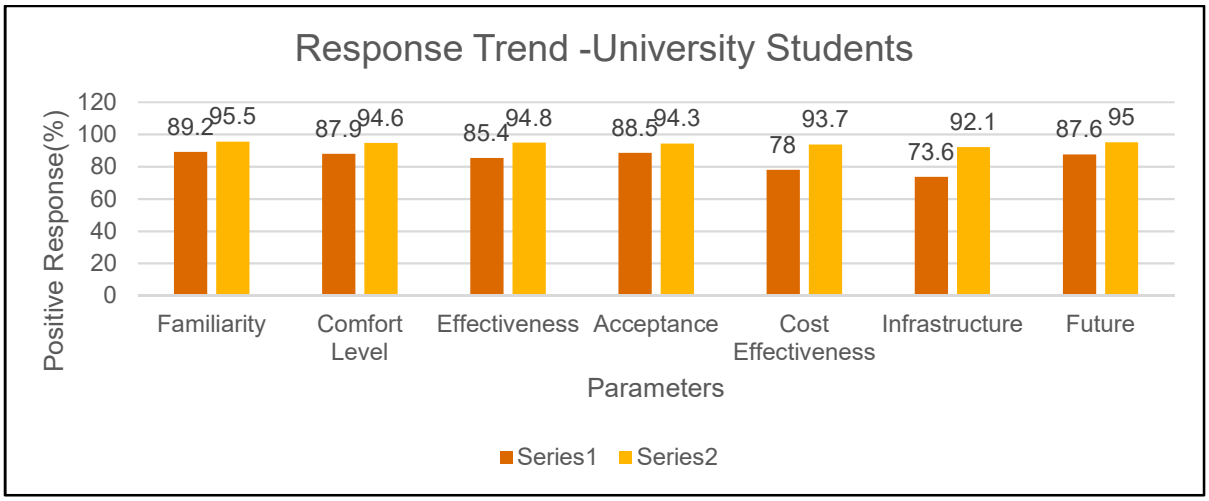

Figure 0-5 : Response trend of University Students

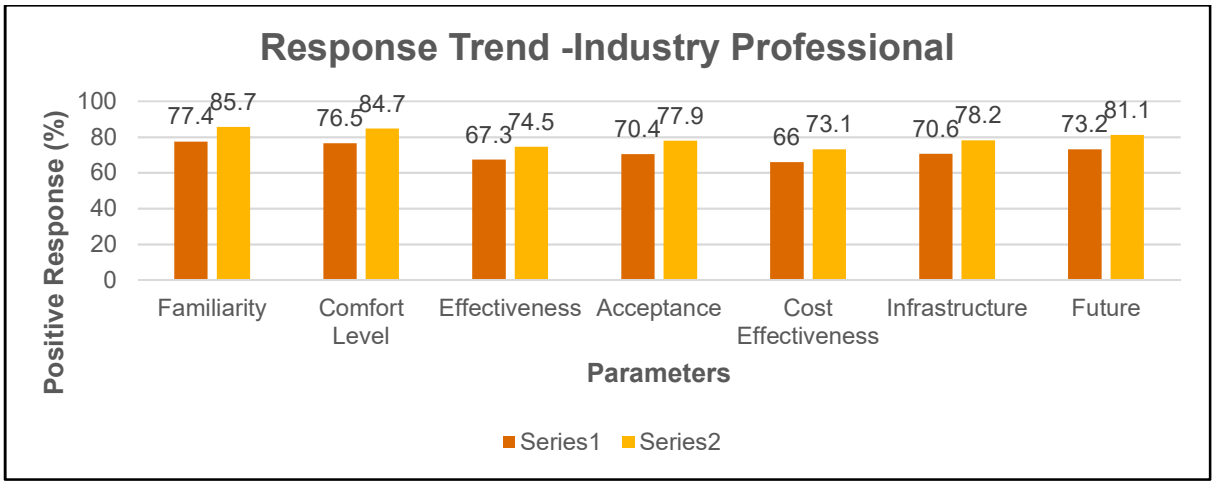

Figure 0-6: Response trend of Industry professionals

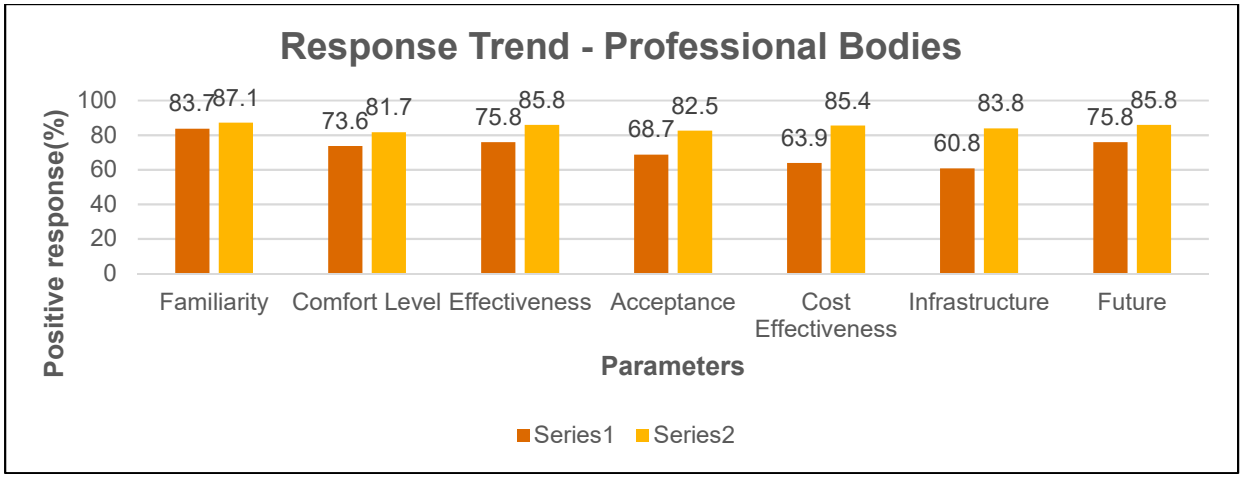

Figure 0-7 : Response trend of professional bodies

The above exploratory data analysis (column diagrams) indicates that there is a positive trend for all the survey parameters across the sectors considered in the study.

The trend of Internet usage reported continuous increasing trend. It is majorly due to slash down of mobile internet tariff and use of wireless internet through mobile. These are represented in Figure 4-8 to 4-10.

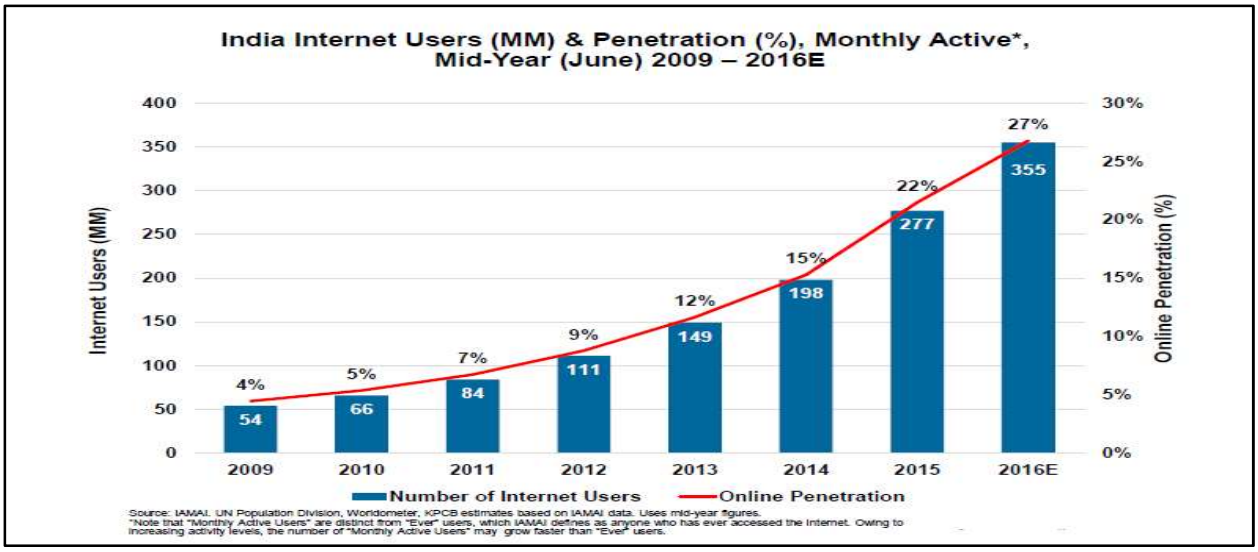

Figure 0-8: Indian Internet users & penetration (Source IAMAI)

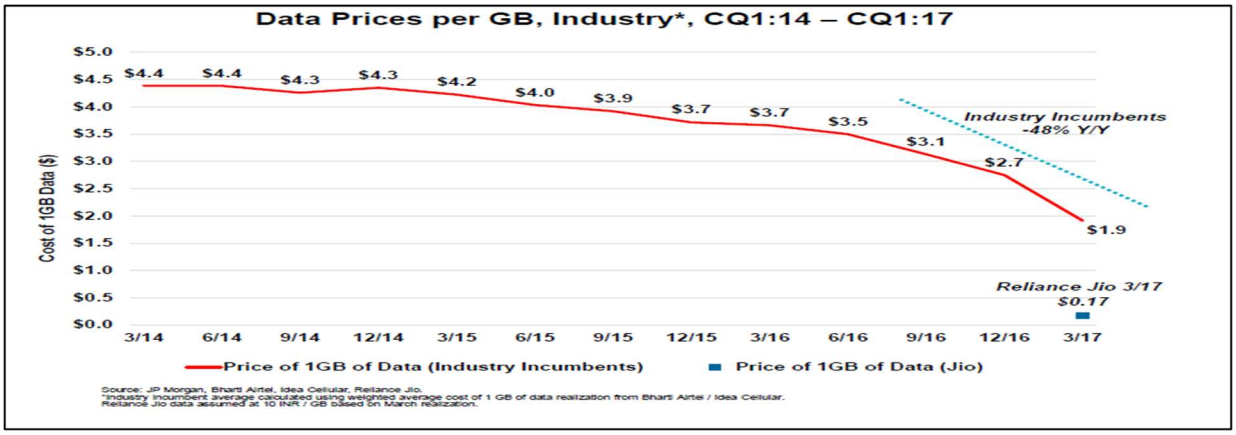

Figure 0-9 : Mobile Data price trend (Source IAMAI)

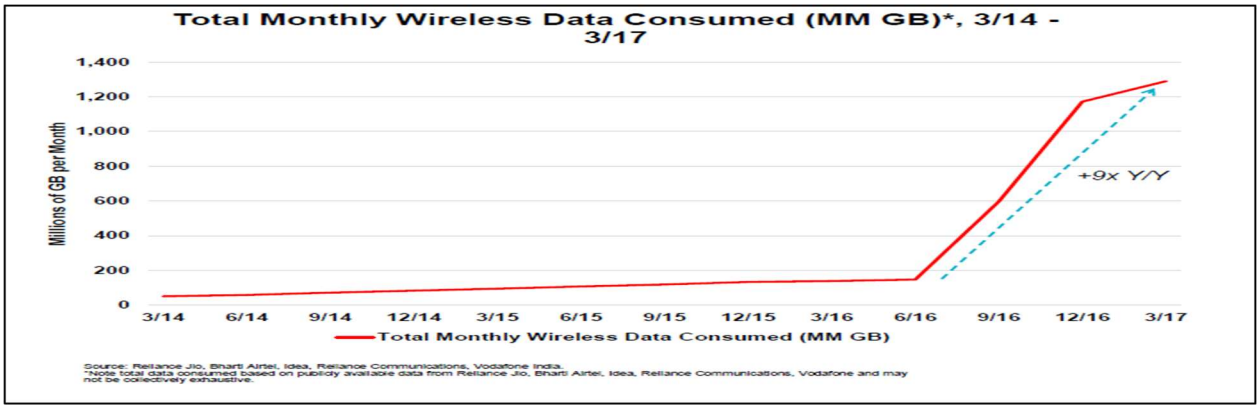

Figure 0-10 : Trend of monthly wireless data consumption (Source: JIO, Airtel, Idea etc.)

The internet usage highlighted an important trend, browsing internet for regional content (Fig 4-11). This reveals that there is a requirement of regional content which is aligned with one of the survey outcome.

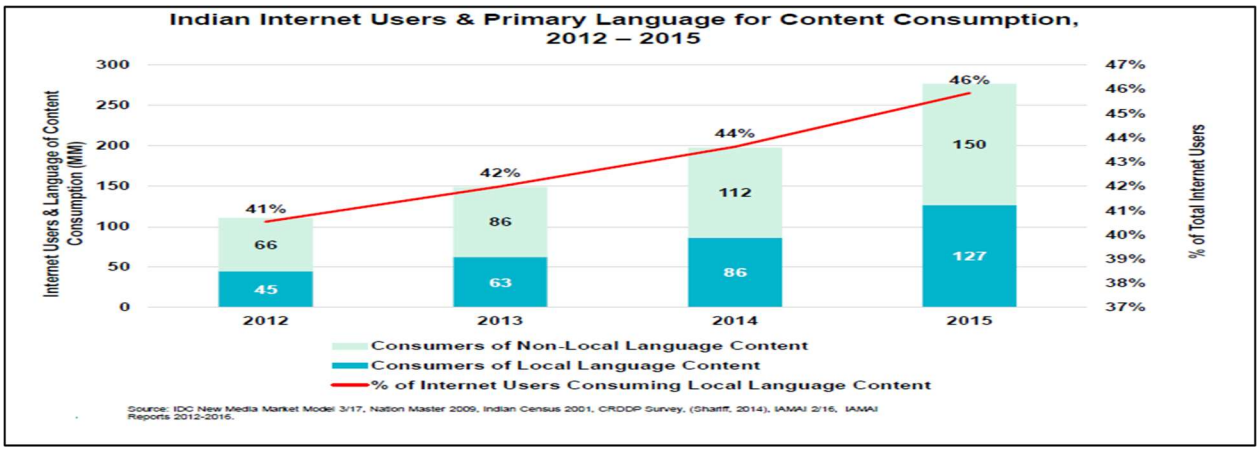

Figure 0-11 : internet usage trend in regional language (Source: IDC New media)

1.7 Chapter Conclusion

In this chapter, two different studies have been mentioned with respect to the Indian context. The findings are summarized as follows:

- There is a growth of internet usage in India. Consequently, the e-learning adaptation is also showing a positive trend over the years.
- Education sector, mainly K-12 and higher education sectors are promising area of e-learning growth in India.
- In India, simulations, mobile learning and micro learning (small videos) will be in demand in the next five years.
- K-12 sector showing rapid growth towards e-learning adaptation in the last 12 years (2007-2016). Also, prediction indicates that growth rate will be continued in this sector. Government initiative, availability of cost-effective smartphones and data package is making Indian e-learning market promising.
- Indians are aware of e-learning and its benefits. They are also very optimistic about the future of e-learning in India. The awareness, usability, and acceptance of e-learning are showing positive trend during 2012-2017, as indicated by the empirical studies conducted as a part of this research.

- Cost effective bulk availability, availability in major regional languages and near perfect quality are important requirements in Indian scenario.

1.8 Chapter Contribution

The chapter contribution is summarized as follows:

1. Summarization of information available for e-learning usage and its forecast in the Indian context
2. An empirical study was conducted to:
    - understand Indian e-learning readiness in 2013 and 2017
    - compare the analysis results to understand the trend and
    - analyze the available data to find justification for the observed trend