

MIRROR PRISONER EFFECT (NARCISSUS EFFECT) ON INDIAN IT SERVICES SECTOR: STRATEGIC THINKING & DIRECTION

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ABSTRACT

India's IT sector today dominates global sourcing of IT Services with significant market share, Indian IT service providers compete today with Insourcing within the customer organization across various markets. With global outsourcing growing 2X (twice) faster than global IT spend in-terms of percentage, India remains to be leading destination for global sourcing however emerging economic countries such as east European countries, Russia, China, emerging IT hubs in East Asia are increasingly turning out to be challengers. Some of the question which arises in anybody's mind is how will India take on competition. India's value proposition to the world market is its economies of scale to produce engineers. With the advent of automation and connected world, one can question what will happen to the IT services demand itself. India had cost arbitrage till early 21st century and it is fast eroding. This paper brings in new dimension of complacency which has cropped up among the Indian IT services providers. This paper is an attempt to assess whether Indian IT Industry is caught in dilemma of self projected image. However, the global IT industry is evolving fast and expecting value added, innovative services & products in competitive market. Authors findings was that Indian IT Industry is fast losing its arbitrage advantage, needs to escape out of the mirror prisoner effect.

Keywords: IT Services, Arbitrage, Complacency, Outsourcing, Disruption, Differentiator.

INTRODUCTION

India IT Industry was able to build quality arbitrage Bhattacharjee & Chakrabarti (2015) barrier of English knowledge & economies of scale Kadam & Sudarsan (2016) and Bhattacharjee & Chakrabarti (2015) but will these factors be able to provide sustainable competitive advantage while global markets move beyond these factors. Indian Government and NASSCOM (2016) have been working on various initiatives like Skill Development, Smart Cities, Digital India, Make in India, Digital economy, 2016 10K Startup system but would these events lead India to become the Innovation hub, will these drive World digital economy?. Indian IT Services providers are also focusing on India as a destination to offer new age services but Is India truly an origin for Innovation in IT? What Should India IT Industry and Indian Services providers do? What can take India from current \$100 Billion Bhattacharjee & Chakrabarti (2015) and NASSCOM, (2016) to \$500 Billion by 2025, according to Gartner 2016 report global IT spend grew by 1.4% from 2016 to reach US\$3.5trillion mark in 2017.

LITERATURE REVIEW AND IDENTIFICATION OF RESEARCH GAPS

Rollercoaster ride of global economic markets have started taking toll in global spends thus impacting global IT spends with a contrasting growth of single digit as per Gartner October 2016 report. Global IT Spends have not seen any remarkable recoveries even though stronger

growth rate of US economy, US fed hiking rates and US Dollar gaining strength. However, compared to global IT spends and global sourcing growth, there is some silver lining in store for Indian IT services providers. Han et al. (2011), while using Cobb-Douglas production function are able to estimate that US\$104 billion of IT outsourcing happened from US markets in 2000 which increased to US\$125 Billion in 2006 with an average growth rate of 5.4%. Global sourcing is growing at much faster growth rate compared to global IT spends according to NASSCOM 2016. Indian IT Services market size being around US\$150 billion in 2016 as per NASSCOM 2016 Annual report. As per Gartner October 2016 report Global IT Spends touched US\$3.5 Trillion in 2017 with year on year growth rate under 3% which is not significantly different than last few years of data compared to 2017. India is still a leading destination Asher & Nandy (2007) for the global IT services outsourcing Bhattacharjee & Chakrabarti (2015) with 55% of the market share (NASSCOM, 2016). This will bring forth an important question of what the global IT world needs to do to boost global IT Services demand. Will it depend heavily on US and EU markets as China is still a closed market for global IT service providers? IT spends are meagre in India even though India is one of the major global economies. Automation being the order of the day, will global IT services sector growth takes further hit? However, Han et al. (2011) and research gaps are cropping up in major researchers (IT services) for the reason that they have not fully considered the impact of global economic turmoil, possibility of global depression, advent of disruptive technologies, geo political scenarios, underestimation of domestic market size. Indian IT services providers have to focus on local presence in major global markets even more during the US VISA & Policy Regime uncertainties, UK-Euro BREXIT related uncertainties era wherein global economies are slowly shutting their doors for IT services outsourcing. Global IT sector is eagerly waiting for the UK negotiations with various economies like US, Germany, France, China, India and other large economies which constitutes more than 80% of global IT Spends (as per Gartner October 2016 report) with US being largest at almost 40% and EU with more than 30% share of global IT spend as shown in the Table 1.

Region	2015
North America	39.33 %
Western Europe	31.74 %
Asia Pacific	19.14 %
Latin America	4.45 %
Middle East & Africa	2.84 %
Central & Eastern Europe	2.5 %

Source: Gartner, 2016

Ang & Straub (1998), talks about cost arbitrage and strategic intent with respect to outsourcing in 1998 itself while stressing the need for considering both production cost as well transaction cost while outsourcing strategic functions like IT. The study bases itself on the transaction economic theory and model building; however, various other attributes of organization and key elements highlighted in Porter's five forces model are the missing pieces of the puzzle. The global IT Services growth may take further hit with relocation of various delivery centers, service centers, and sales offices due to anti-globalization moves and from protectionist instincts of current US administration. Further to this Rising costs of wages, Automation, inflation and standard of living in some of the high growth emerging economies are

pressurizing the profitability of the entire IT Services sector. Ang & Straub (1998) argued in 1998 itself that outsourcing poses various challenges, need for balancing opportunities in open boundaries, One can see that study conducted by these researchers were limited to set of industries which was tough to extrapolate, however one can see that research has evolved from 1998 till 2015 wherein NASSCOM, Gartner, IDC and various research teams are able to accurately map the IT spending as shown in Table 2. Gordon et al. (2006), paper focuses towards market opportunity, industry arbitrage, merits and demerits of outsourcing however a major gap is that it lacks holistic approach towards arbitrage Shleifer & Vishny (1997) while the many paper focuses mainly on cost. Authors of this research paper broaden the focus of the paper to various aspects of arbitrage like cost, quality, scale, innovation, expertise, place and many other factors. Cheng & Nault, (2007) talks about IT outsourcing value proposition focused towards downstream output however Cheng & Nault (2007) study had considered few variables which may impact IT productivity and as well data they had considered did not represent the entire economy pertaining to IT outsourcing thus one can say this is an opportunity area to further study the impact.

Worldwide IT Spending	2016 Spending	2016 Growth (%)	2017 Spending	2017 Growth (%)
Data Center Systems	173	1.3	177	2.0
Software	333	6.0	357	7.2
Devices	597	-7.5	600	0.4
IT Services	900	3.9	943	4.8
Communications Services	1,384	-1.1	1,410	1.9
Overall IT	3,387	-0.3	3,486	2.9

Source: Gartner, 2016

One of the major research gap in Guodong et al. (2010), is data skew towards large service providers, this paper missed out on the quality arbitrage, correlation between certification and arbitrage. As per NASSCOM 2014 Annual report the Big four global industry verticals have been lending helping hands with Banking & Securities and Manufacturing & Natural resources (Oil & Gas, Hi Tech, Heavy Manufacturing, Mining, etc.) both contributing US\$500 Billion each, Government & allied divisions and Communication & Media Services have not been far behind with nearly US\$500 Billion IT spends, Insurance, Retail, Utilities, Transportation, Healthcare IT, Wholesale Trade, Education constitute remaining US\$800 Billion opportunity space. In Li (2014), stops at relationship focusing on share of wallet (Singh, 2014). Authors of this paper try to identify the importance of erosion of existing levers for service providers leading to loss of market opportunities. Bhattacharjee & Lin (2014) proposed a unified model of IT; their study advances IT continuance research by theorizing and validating a unifying model that extends prior perspectives. Figure 3 & Figure 4 provides holistic picture of the LR (Literature Review) work done by authors of this paper (Davis et al., 2006).

Various researchers as shown in Figure 3 & Figure 4 talks about Indian IT Services exponential growth after the unchaining of Indian economy in 1992 (by the then Indian Government). After the global turmoil, the Industry thrived on dotcom opportunity during the period 1998-2000, then came the outsourcing wave primarily due to the Language Arbitrage Sharma (2014), because vast majority of the Indian engineers spoke professional English language. It helped to tap into the Wild West opportunity. It was a race for the larger pie wherein

Indian IT Industry was successful in gaining majority market share. Indian IT Industry was able to create new business model in-terms of Global Delivery Bhattacharjee & Chakrabarti (2015) driven by scalable talent McKinsey Global Institute (2005), processes, locations but by 2009-10, Language Arbitrage was eroding, as Sharma (2014), says

"The advantage of India having a large English-knowing engineering workforce has already eroded".

Authors proposition is that IT landscape has changed dramatically, shifting away from low cost location, automation leading to vanishing bottom of the delivery pyramid, reduced quality arbitrage Bhattacharjee & Chakrabarti (2015) over other competing nations. Market is seeing trend that software spending is growing at 6% in 2016, Software Services growing at around 7% in 2016-2017 to total US\$350+ billion which will provide more legroom to Indian IT Service providers.

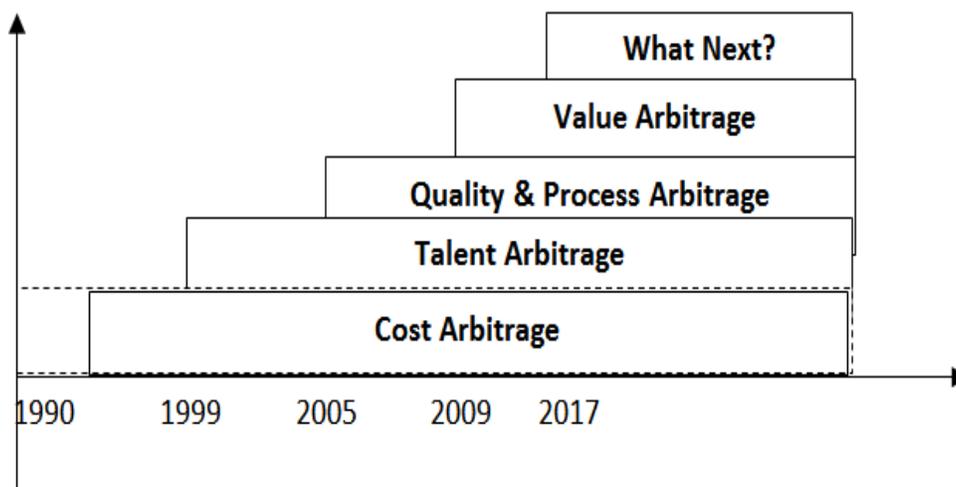
Though Value creation was talked about from late 2000s, not many Indian IT Services Industry service providers have focused on creating next wave of arbitrage. Authors through this research work set out to identify would Value Arbitrage or Innovation Arbitrage Sharma (2014), Bhattacharjee & Chakrabarti (2015) and Clemons, (2006) be the next wave for Indian IT Services Industry? As Sharma (2014) raised few questions saying will Indian IT industry (including Indian IT Services sector) move up the value chain. OECD (Organization for Economic Co-operation & Development) G20 Innovation report 2016 OECD highlights facts that despite huge amount of Indian public R&D spending still it is unable to create many world class universities and journal publications and the report also brings in issues of economies of scale, fate of informal sector and regulatory & administrative frameworks. Indian IT Industry is pushing itself towards becoming Intellectual Capital of World. Indian IT Service providers have this unique advantage wherein innovative solutions can be built by targeting to solve local issues of large Indian population yet build it such a way that it is scalable to rest of the world. However, what is lacking is the creation of new technologies/ Innovation from India, virtual absence of leadership in the creation of new technologies and lack of disruptive innovations from India (OECD G20 Innovation report, 2016).

India Value Proposition in Global IT Sourcing Market

Given the significant presence of Indian marketers (Indian IT Services providers) in the global IT services industry, the authors of this study felt that a related discussion on Global Sourcing market and India value proposition Sharma (2014) and Bhattacharjee & Chakrabarti (2015) might be beneficial in this context. India's population with over 1.2 Billion people turned out to be its biggest advantage while taking on the world, being in the top 5 economies challenging US & China, India has been growing consistently over 7% according to World Bank estimates. Han et al. (2011) found that USA industries earned higher GMP (gross marginal product) from IT outsourcing. Global sourcing market has been growing at around 9% to 10% which is faster than the growth in global IT spends. According to IDC, Gartner, Tier-II city share of business growing at 45% which is giving the required competition to the rest of Asia as destination. India is the top outsourcing destination or the world's largest sourcing destination for the IT Services which accounts for approximately 67% of the US\$130 billion market size (NASSCOM, 2016).

India's cost arbitrage Ang & Straub (1998), Mithas & Whitaker (2007), Cheng & Nault, (2007), McKinsey Global Institute (2005), Li (2014) and Bhattacharjee & Chakrabarti (2015)

and cost competitiveness in providing IT services has been approximately many times cheaper than the US and continues to be the mainstay of its Unique Selling Proposition (USP) in the global sourcing market (NASSCOM, 2016). Indian IT Services is also expected increase three times (triple) its current annual revenue to reach around US\$300 billion+ or US\$400 billion+ by FY2025. One can see that Indian IT Services sector with a backing from Indian Government is contributing to Market Growth by incubating various 'start up' programs; In fact, India ranks 3rd among global start up ecosystems with 10K startup programs from Government of India and as well from NASSCOM. India's talent base of over 6-7 million skilled workforce create the Talent Arbitrage (McKinsey Global Institute, 2005). India's focus towards English based education created Language Arbitrage, helping India achieve its mark in global market place. NASSCOM 2016 report projects NASSCOM, (2016) that Internet users are over 300 million in India, powered by above factors Indian IT Service providers soon assumed Economies of Scale in Delivery, Process, Talent, Knowledge resulting in gaining 2/3rd of market share in world-wide IT services outsourcing industry (Bhattacharjee & Chakrabarti, 2015; NASSCOM, 2016). According to NASSCOM, Indian IT services Industry is gearing itself towards Digital Economy and transforming itself as Digital & Innovation Hub with over 65% of the current workforce Digitally Skilled. Currently, economies of scale have started kicking in with over 15% of current revenue, significant number of start-ups and its ecosystem have been created to cater to the world-wide need. Global economic turbulences coupled with Indian IT Services industries process innovations & advancements Clemons (2006) focusing on quality resulted in the Process and Quality arbitrage which gave Indian IT Services companies the edge till date. As one can derive fact from extensive Literature Review in this paper, that Indian IT Services industry is working towards creating Value to the customers OECD G20 Innovation report, 2016, NASSCOM (2016) resulting in Value Arbitrage which is giving the edge to Indian IT Services providers. As the detailed LR has shown, the authors have summarized the arbitrages Indian IT Industry created in the below Figure 1. The following section describes the model proposed by authors which focuses on factors leading to market opportunities.



Source: Created by Authors

FIGURE 1
ARBITRAGE MAP - UNDERSTANDING THE INDIAN IT SERVICES SECTOR

Conceptualization for the Proposed Scope of Research

The authors of this paper have proposed the conceptual model as shown in Figure 2, the model is proposed after interviewing various industry experts & stake holders of the industry coupled with detailed Melville & Ramirez (2003) proposed a conceptual framework to explore the processes of inter-firm IT-value generation, Mitzi et al. (2010), proposed Service-profit chain as a conceptual framework to put forth their research ideas. Similarly Authors of this paper while considering the market opportunity as a construct (dependent variable) have proposed the following model. Authors have discussed extensively about the market opportunity in this article. Authors here try to find out the link between some of the key constructs and market opportunity. This study has proposed the following research model which shows that any disruption (independent variable) in market either by a company or by its competitor resulting in '*value proposition*' being created for market. This may also bring in complacency Rogers (1995) in spite of competition among market players, Rogers (1995) says

"One reason why there is so much interest in the diffusion of innovations is because getting a new idea adopted, even when it has obvious advantages, is often very difficult".

One can see that another key construct which emerged was complacency among the existing large and mid-sized IT Services industry players. Also one can note that general market equilibrium leads to complacency (Luftman et al., 2015).

Another key construct Authors considered was '*Differentiator*' (independent variable) which also may bring in complacency or differentiated '*value proposition*' in-turn may result in reduced or loss of '*Strategic intent*' in-effect may impact severely '*Strategic focus*'. Any loss of strategic intent and strategic focus may result into market erosion, loss of market opportunities. Hence to summarize the authors have proposed and highlighted the importance of the constructs of market opportunity, value proposition, differentiator, disruption, complacency in competing, strategic intent, strategic focus wherein disruption of any nature such as technology, business model, innovation will lead to creation of value proposition and complacency, Rogers (1995) also highlights a similar aspect. Market differentiators may also have effect on value proposition and complacency which in-turn may have impact on strategic intent & focus either positively or negatively based on dominant market forces. In the following section, Authors propose the scope of the research and conceptual framework for the same (Mehta & Rao, 2015).

Scope of Proposed Research and Conceptual Framework

The scope of this research is to develop a conceptual framework for Market Opportunity Dynamics pertaining to IT Services industry. In-depth literature survey as shown in Figure 3 & Figure 4 shows that various constructs play key role in defining the market opportunity. As highlighted in Figure 3 & Figure 4, various researchers have come out different constructs which could drive the market forces. Additionally, authors of this research have validated the constructs using field work and accordingly have adopted those constructs which were found important by industry experts. The proposed conceptual model (Fig 2) has been developed based on LR, field work, understanding of authors and various industry reports (like Gartner, IDC, Zinnov, OECD & NASSCOM).

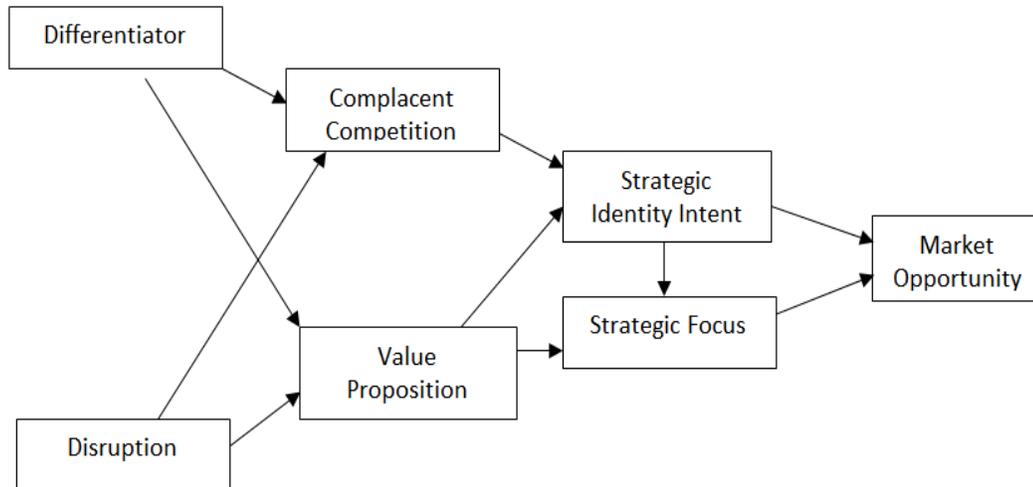


FIGURE 2
PROPOSED CONCEPTUAL RESEARCH MODEL

The proposed conceptual research model shown in Figure 2 shows that disruption such as technology, policy, economic, political may impact either positively or negatively leading to increased or decreased value proposition, similarly disruption also may lead to complacency among the large companies or sector leading to reduced intensity while competing as market stabilizes in sometime after the disruption, Rogers (1995) also highlights a similar fact that technology innovation brings in uncertainties leading to disruption. Service providers or monopoly players creating differentiator may lead to similar effect however would have different weight-age. Authors here try to understand the relation between complacency and value proposition, whether one can impact other. Value proposition can lead to distinct strategic identity demonstrable as strategic intent. Unique value proposition also leads to strategic focus towards market. Strategic Intent & Strategic Focus will directly impact market opportunity wherein any disruption leading to complacency in the sector may lead to loss of strategic intent strategic thus identity in the market place which may negatively impact the market opportunity.

Research Objectives

Industry arbitrage such as Cost, Language, Talent & Quality arbitrage Figure 1, which gave the Indian IT services industry sector the edge over other IT service providers from competing countries by creating entry barriers however Authors in this paper are attempting to find out whether different dimensions of arbitrages are fast eroding, the research objectives are as shown as below:

1. Determining existence of specific arbitrages at present and potential presence/ discontinuation of different types of arbitrages for Indian IT Services sector in the near future (post 2018).
2. To find out whether complacency has crept in Indian IT Services providers & industry sector as a whole during mentioned period of study.
3. Impact of different dimensions like disruption, differentiator, value proposition, strategic intent, strategic focus upon market opportunities.
4. To determine the impact of Factors which can help identify next wave for the Indian IT Services Industry for the next 3 years (early 2018 to 2021 period).

Research Questions

Anti-globalization moves & political rhetorical environment of most western countries are leading to challenging times for the emerging economies. EU's policy towards immigration and refugees has resulted in BREXIT. Loss of jobs is a serious issue in most western countries. Slower growth in Western Countries as well as in China is leading to global slump which may also result in anti-global trade moves. Passive policies of WTO and UN are further resulting in stronger voices against global trade and increased protectionism, some of the key research questions are as listed below:

1. Which of the arbitrages (among the list of cost, quality, process, value arbitrages and global delivery model) will remain relevant and which ones will starting fading away in the near future pertaining to Indian IT Services sector?
2. What is the impact of complacency on competitive intensity, strategic focus and strategic intent?
3. What is the impact of disruption, differentiator on complacency, competitive intensity, strategic focus and strategic intent?
4. What levers Indian IT industry service providers have so that it can react to market disruptions like technology, policy, business model, erosion of arbitrage among others?

METHODOLOGY

The context of this study is to understand the preparedness of Indian IT service providers while tackling impact of macro-economic conditions, global politico economic policies and technology disruption. Authors picked up cross sectional data of market growth, market size, IT industry service provider's revenue and various other relevant data. Authors detailed literature review (LR) resulted in identifying various constructs coupled with author's expertise and expert interviews resulted in 21 variables as shown in Figure 3 & Figure 4. Authors used purposive sampling where there is only limited number who are experts in this field to answer as well quota sampling method is used to make sure all stake holders like end customer, services providers, policy makers, industry players, market disruptors, innovators, entrepreneurs, researchers, industry lobbyists, industry consultants are well represented. Authors chose the Research design to be mixed method approach along with descriptive studies, beginning with structured questionnaire based Interview with six of the top IT services companies CEOs/CXOs, Interviews had broad guidelines however authors added/modified questions based on the context. Authors Research Approach was Pragmatism (Both Deductive and Inductive) and as well interpretivism. Research methodology adopted was Quantitative Data Collection Methods through survey (Survey monkey/ other online Methods), on the phone Questionnaire based Interviews and along with sending Questionnaire through Emails and 'WhatsApp' to large number of Industry leaders to answer. The Data collection section will show the result of such research methods.

Instrument Development & Validation

Authors developed the survey instrument based on Figure 3 & Figure 4 constructs and variables, each variable has theoretical base as highlighted in previous sections. The Scales adopted has inspirations from the works of (Umamaheswari & Momaya, 2008; Rajan & Madras, 2008; Bhattacharjee & Chakrabarti, 2015). Authors were able to operationalize constructs where in questions were formulated based on the intent of each of the construct; some of the questions

was kept open ended to capture the qualitative feedback from the experts who are part of the purposive sampling.

Literature Review																					
	<i>Market Growth</i> <i>Value Proposition</i> <i>Industry Arbitrage</i> <i>Global Competition</i> <i>Competition Intensity</i> <i>Industry Complacency</i> <i>Strategic Intent</i> <i>Strategic Focus</i> <i>Brand Identity</i> <i>Differentiator</i> <i>Commoditization</i> <i>Erosion of Value</i> <i>Erosion of Differentiator</i> <i>Business Model</i> <i>Business Model Differentiator</i> <i>Market Environment</i> <i>Technology Disruption</i> <i>Policy Disruption</i> <i>Market Opportunity</i> <i>Technology Strategic Path</i>																				
Author, Year, Journal	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21
Sankalpa Bhattacharjee, Debkumar Chakrabarti, 2015, Futures																					
Prashant V Kadam, PK Sudarsan, 2016, Journal of International Economics																					
Digital Economy OECD Observer Roundtable, 2016																					
Dinesh C. Sharma, 2014, Futures																					
Kunsoo Han, Robert J. Kauffman, Barrie R. Nault, 2011, Information Systems Research																					
R Umamaheswari, K Momaya, 2008 IIMB Management Review																					
ANDREI SHLEIFER and ROBERT W. VISHNY, 1997, THE JOURNAL OF FINANCE																					
Reina Y. Arakji and Karl R. Lang, 2010, International Journal of Electronic Commerce																					
Ralf C Schlaepfer, Markus Koch, 2015, Deloitte Industry Research Report																					
Gordon B. Davis, Phillip Ein-Dor, William R. King, Reza Torkzadeh, 2006, Journal of the Association for Information Systems																					
Mukul G Asher, Amarendu Nandy, 2007, IIMB Management Review																					
Deependu Jain, Hemant Daga, Nitin Kakkar, 2003, IIMB Management Review																					
Srinivas Ainavolu, 2007, IIMB Management Review																					
Jerry Luftman, Barry Derksen, Rajeev Dwivedi, Martin Santana, Hossein S Zadeh, Eduardo Rigoni, 2015, Journal of Information Technology																					
Brian Leavy, 2017, Strategy & Leadership																					
Guodong (Gordon) Gao, Anandasivam Gopal, Ritu Agarwal, 2010, MANAGEMENT SCIENCE																					

FIGURE 3
LR & VARIABLE MAPPING

Literature Review																					
	Market Growth	Value Proposition	Industry Arbitrage	Global Competition	Competition Intensity	Industry Complacency	Strategic Intent	Strategic Focus	Brand Identity	Differentiator	Commoditization	Erosion of value	Erosion of Differentiator	Business Model	Business Model Differentiator	Market Environment	Market Disruption	Technology Disruption	Policy Disruption	Market Opportunity	Technology Strategic Path
Author, Year, Journal	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21
Xiao tong Li, 2014, Journal of Management Information Systems																					
Rafiq Dossani, Martin Kenney, 2006, Academy of Management Perspectives																					
Leslie Willcocks, Peter Reynolds, David Feeny, 2007, MIS Quarterly																					
Soon Ang and Detmar W. Straub, 1998, MIS Quarterly																					
Melville, N., & Ramirez, R., 2003, American Conference on Information Systems																					
Thillai Rajan A, IIT Madras, 2008, IIMB Management Review																					
Zhuo (June) Cheng, Barrie R. Nault, 2007, MANAGEMENTSCIENCE																					
Sunil Mithas, Jonathan Whitaker, 2007, Information Systems Research																					
Mitzi M. Montoya, Anne P. Massey, Vijay Khatri, 2010, Journal of Management Information Systems																					
Anol Bhattacharjee, Chieh-Peng Lin, 2014, European Journal of Information Systems																					
Yagnil Mehta, US Rao, 2015, The IUP Journal of Business Strategy																					
Jeremy St. John, Carl Stephen Guynes, Richard Vedder, 2014, Information Systems Management																					
Ratbek Dzhumashev, Vinod Mishra, Russell Smyth, 2016, Exporting, R&D investment and firm survival in the Indian IT sector, Journal of Asian Economics, 42, 2016, pp1-19																					
Robert Stringer, 2000, CALIFORNIA MANAGEMENT REVIEW																					
Deeparghya Mukherjee, 2016, Journal of South Asian Development																					
Keun Lee, Tae Young Park and Rishiksha T. Krishnan, 2014, Development Policy Review																					

**FIGURE 4
LR & VARIABLE MAPPING, CONTINUED**

Data Collection

Survey was conducted with structured closed ended and open ended questionnaire which collected both qualitative and quantitative data, the survey had 20 questions which collected brief information on demographics wherein the survey questionnaire was sent to named experts, CEOs, CMOs, CFOs, Directors, VPs, Technology Leaders, Domain Experts, Mid-level managers who deal with strategy were asked to take the survey, the invitation was sent to around large number of experts through various methods paper survey, email invitation, mobile app based invitations and as well technology messenger based invitations, survey participants whose response anonymous was treated separately to analyze whether those should be included in the final consideration set, 82 C-level executives (CEO, CXO, CSO, Directors, GMs) participants from various Indian IT Services sector, GICs, Consulting organizations, research organizations, such as CISCO, Accenture, TCS, WIPRO, Tech Mahindra, E&Y, MACH, Starhome, Zinnov, etc., have responded with rich data, the respondents constitute wide functional domains with respective leaders responding to the survey. It was observed that no expert had exited taking survey in-between and as well most of the questions were answered by the respondents. Authors

tries to find out from the industry experts about size of the market and their mood on the Market Opportunity, Authors here also tries to validate each every construct which came from LR so that a robust model can be presented to the research enthusiasts. Authors tries to understand the impact of differentiators & disruption on the market opportunity, how one can link strategy, intent, focus, value proposition to market opportunity, this study brings out an in-depth analysis of how each one be linked so that accurate modelling can be achieved (Stringer, 2000).

Hypothesis Development

Indian IT Services sector created differentiators in last two decades which resulted in business model innovation and market disruption powered by industry arbitrage coupled with developing eco system, opening up of economy. All these resulted in creation of value proposition with a focus towards building strategic arbitrage. Strategic focus & intent of the Indian IT Services providers resulted in exponential market opportunity till recently. The following sections look at various constructs & corresponding proposed hypothesis of Authors.

Value Proposition & Differentiator

Demand for offshore talent in IT services, economies of scale in-terms of talent, global presence, India's Global Delivery Model, robust processes, Clemons (2006) Quality of work, value creation, business model innovations, Bhattacharjee & Chakrabarti (2015), Are these differentiators no more considered value proposition?, has it become basic necessity of the industry, can one say global delivery model sustainable, Is Indian share of customer geography concentration too skewed towards USA and Europe, Is India having its share of innovation amidst current market scenario as explained in previous sections. Can Indian IT services providers keep following the leaders to be laggards by imitate business model or does Indian services providers feel it is important to build innovation led organizations, creation of global product enabled services companies (Solutions) like SAP. The following hypothesis for value proposition is developed based on inputs from various industry expert interviews & LR conducted by authors.

H₀: The India Value proposition is still quite strong and can last for many more years.

H_{a1}: The India Value proposition in IT Services is fast eroding.

Disruption

One can see global economic conditions are becoming much more dynamic through Technology Disruption, Business Model Disruption and Policy Disruption (Gordon et al., 2006). In Internet based connected era one can see that any major changes in-terms of economy, policy, technology, governments and such factors result in whether positive or negative disruption impacting world economy thus budgets. Using this alternate hypothesis authors planned to validate the impact of technology disruption on IT market, how disruption negatively affect the job market like Automation in Banking sector jobs affecting process outsourcing jobs, similarly L0 & L1 (lower end IT Infrastructure management tasks) jobs in IT outsourcing world, one can see that various CXO/ Industry leaders speak about such impact, Authors wanted to validate such fear.

H_{a2}: User perception towards Automation will negatively affect the job market.

H_{a3}: IT Industry will see dip in revenue or negative growth due to Automation.

Complacency while Competing

India's IT sector today dominates global sourcing of IT Services with 67% market share out of 140 Billion IT Services market. Some of the major IT services providers like TCS, Cognizant (US headquartered), Infosys, Wipro reaches double digit in USD billion are very close to touching the same in FY16-17, as well Indian IT Sector has many notable IT services providers such as HCL, Tech Mahindra, iGATE, L&T InfoTech, MindTree, Mphasis, Genpact, Infinite, KPIT, NIIT are either close to USD billion or have crossed resulting in a strong contenders for the top 5 slot which is resulting in significant growth for the sector. Authors try to validate whether such domination of India as outsourcing destination for world-wide IT Services sector resulting in complacency leading to reduced competitive intensity. The following hypothesis was also developed to test whether Industry leaders/ CXOs are failing to identify the next wave for the Indian IT Services sector.

H_{a4}: Competition poses threat to survival of existing Indian IT services providers maintaining status quo of way of doing business.

Strategic Intent & Strategic Focus

This study tries to validate whether intent & focus has any impact on market opportunity. Companies while competing in market place try to create differentiators & economies of scale however strategic planning and execution plays key role in market share and wallet share (Singh, 2014). This study focuses on intent, level of intensity and focus in-terms long term planning among Indian IT industry players. The below alternate hypothesis tries to validate whether Exponential technologies Schlaepfer & Koch, (2015) such as 3D printing, sensor technologies, robotics, drones, nanotechnologies, Digital Technologies, Automation, AI (Artificial Intelligence and various such technology interventions) create any serious disruption in market, are the industry services providers giving due attention, do Indian IT Services providers consider this as just another phase in their journey?. This study focuses on whether significant disruption through exponential technologies is happening in market or not. The following hypothesis also tests whether complacency plays any major role in strategic intent & strategic focus.

H_{a5}: Disruptive technologies or Exponential Technologies will be contributing major share of Industries revenue.

Market Opportunity

As argued earlier in this article tremendous success of Indian IT service providers earlier in the paper with more than 60% market share NASSCOM (2016) in IT services sector, is it creating any complacency Bhattacharjee & Chakrabarti (2015)? The below proposed alternate hypothesis Ha6 tests, whether Indian IT Service providers are complacent while competing in the global arena. Are they competing hard enough to create constant entry barriers for non-Indian marketers to compete, this also tests whether industry marketers or industry service providers are aware such factors which are affecting market opportunity and addressable market growth (Seshadri, 2011; Bhattacharjee & Chakrabarti, 2015). Authors argue here that Indian IT industry

players are aware that complacency has crept in Indian IT service providers however many Indian IT services providers have realized that ground is shaking Bhattacharjee & Chakrabarti, 2015 thus want to work on expanding market and offering. This study tries to debate this point and validate such propositions.

H_{a6}: Complacency leads to reduced Market opportunity in the IT Services sector.

Analysis and Results of Hypothesis Testing

Authors conducted SEM analysis and by plotting histogram, one can see that data is normally distributed so can assume safely that data is good to proceed with, As first Components Method of Extraction was done to decide to reduce number variables, one of the key decision was to select the number of components to be retained for further analysis, Scree Test Criteria known as Scree Plot was used to decide how many number of components to be retained, one can come to a conclusion by looking at scree plot that 7 factors can represent a good model for this research question.

By conducting Exploratory Factor Analysis, Factor loadings in either the unrotated or rotated represent the degrees of association which is correlation of each variable with each factor. The loadings take on a key role in interpretation of the factors. But one can also see in the Component matrix (Unrotated) that it is not clean set of matrix which has substantial cross loadings on many variables which is making conclusion confusing and complex. Also first matrix shows that it did not maximize the loadings of each variables on one factor, thus a rotation technique can be applied to improve the interpretation through rotated factor matrix. Factor loadings in either the unrotated or rotated matrices; represent the degree of associations (correlations) of each variable with each factor. VARIMAX rotation was used and its impact was observed along with 'component transformation matrix'. The Communalities in the component matrix with above 0.5, still share more than half of variance with 7 Factors. One can begin with the assumption that the Exogenous Variables would be Differentiator, Complacency, Disruption; The Endogenous Variables are Complacency, Value Proposition, Market Growth, Strategic Identity Intent and Strategic Focus (Kemme et al., 2014).

By using VARIMAX rotation method, one can state that each of the variable has a significant loading as above 0.3 on one factor, except the ones which are below 0.3, Selecting Data reduction Methods and Reliability Tests, Authors got Differentiator, Complacency, Value Proposition, Disruption, Market Growth, Strategic Identity Intent, Strategic Focus as key variables. The Cronbach was checked for 0.7 or above as well the F value and Significance was also checked to make sure these Factors represent the true model, as the significance was less than 0.5 it was treated as significant thus further analysis was done. Authors observed that no variable has values more than 0.9 it means there is no overlap of variables measuring the same; none of the two variables is measuring the same thing. One can also say if a Variable does not have a significant correlations may not be part of any Factor, and if a Variable has a Large number of Correlations it may or must be part of several factors, one needs to note these patterns. Similarly to make sure model fits well the even Regression analysis with Enter method was undertaken to ensure that model fits. The model summary shows that R Square and R are above 0.9 which means model fits well.

Multiple Regression Analysis is statistical technique used to analyze the relationship between a Single dependent variable 'Market Growth' (Y) or 'Strategic Focus' (criterion) and several independent variables (predictor) differentiator (x1), value proposition (x2), strategic

focus (x3), strategic intent (x4), Complacency (x5), Disruption (x6). Correlation coefficient and intercepts are b_0 , b_1 , b_2 , b_3 and so on, will decide the best the independent variable. More the value of correlation coefficient the stronger will be the relationship, greater the predictive accuracy. Using Mathematical procedure known as Least Squares one can find out values for b_0 , b_1 , b_2 , b_3 and so on. Sum of Squared errors SS_E Prediction should be minimized, Prediction error is the difference between the actual and predicted values of the dependent variable is termed the residual (e); Multiple Regression formulae will be as below:

$$Y = b_0 + b_1 * x_1 + b_2 * x_2 + b_3 * x_3 \dots + b_{11} * x_1 + e$$

R value which is multiple correlation coefficients is 0.990 and R square is 0.980 which shows that predictive accuracy is quite high and quality of dependent variable is quite high. Adjusted R Square is 0.980 which means Independent variables (x_1 , x_2 and so on) explain as high as 98.8% of the variance of Dependent variable (Y). Test of Validity or Construct Validity would be the final stage is efforts to test the validity of the structured model and its corresponding hypothesized theoretical relationships. One needs to analyze the convergent validity of this measurement model by computing AVE Average Variance Extracted, AVE should be 0.5 or above so that validity of the structured model is achieved by analyzing for each hypothesis below. One can assess Overall Significance of the correlation matrix with Bartlett Test and the Factorability of the overall set of variables and the individual variables using the Measure of Sampling Adequacy (MSA). As FA will always derive factors, the objective is to ensure a base level statistical correlation within set of variables, such that the resulting factor structure has some objective basis. In this one can see Bartlett's Test finds that the correlations, when taken collectively are significant at the 0.0001 level.

MSA also looks at pattern between variables, overall MSA falls above 0.5, Bartlett's Test of Sphericity Significance level is 0.06 which is more than the Significance level of 0.05, so it is non-significant hence one can accept the H_0 Null Hypothesis. Reviewing the results shows that P Values of H_0 , H_{a1} , H_{a2} , H_{a3} is 0.00 which is less than 0.05 (Alpha value) and Hence these Hypothesis are Accepted, P Values of H_{a4} & H_{a5} are 0.972 & 0.679 which are more than 0.05 (Alpha value) and Hence these Hypothesis are Rejected. Construct Reliability (CR): sum all factor loadings, square this sum (call this SSI); sum all error variances of each indicator (call this SEV); comp rel. = $SSI/(SSI+SEV)$, Calculating CR for each latent variable results values above 0.9 so which are all variables (instruments) values above 0.7 can be said valid thus Convergent Validity is satisfied, all CR of latent constructs are Reliable thus one can say The proposed SEM is valid and can be accepted as Overall model fitness is proven as NFI, EFI, IFI, TLI, CFI is greater than 0.9.

H_0 : The India Value proposition is still quite strong and can last for many more years.

The Alpha value of below 0.5 shows that it is statistically significant that industry leaders response have shown Industry leaders feel the India value proposition is still strong will go on for few more years however one needs to see the response coupled with other hypothesis to develop comprehensive perspective.

H_{a1} : The India Value proposition in IT Services is fast eroding.

H_{a6} : Complacency leads to reduced Market opportunity in the IT Services sector.

The Alpha value of below 0.5 shows that both Ha1 & Ha6 are statistically significant and needs to be understood in the context of H0 where in industry leaders feel the India value proposition is still strong will go on for few more years however the value proposition is fast eroding & complacency has set in the Indian IT Services sector, one has to look at strategic intent and focus to understand the standing of Indian IT services providers. One can also ask Indian service providers whether are they lacking in creation of new technologies from India, lack of leadership in creation of disruptive technologies & innovations from India, why India cannot create '*Innovation as wave or business model as a wave*' just like the way they created outsourcing wave.

Ha2: User perception towards Automation will negatively affect the job market.

Ha3: IT Industry will see dip in revenue or negative growth due to Automation.

The Alpha value of below 0.5 shows that it is statistically significant and needs to be understood in the context of H0, Ha1 where in industry leaders feeling jittery about state of affairs in the Indian IT Industry where in outsourcing space is getting saturated and may soon begin shrinking and may soon become overcrowded as the expansion of market may be questionable.

Ha4: Competition poses threat to survival of existing Indian IT services providers maintaining status quo of way of doing business.

The Alpha value of below 0.972 shows that it is statistically insignificant and needs to be understood in the context of H0, Ha1, Ha2, Ha3 where in industry leaders feel the India value proposition will help industry survive for the next decade however the value proposition and differentiator may be fast eroding, Indian IT services providers have to introspect while marching ahead to the next decade. Indian IT services providers have to watch the model wherein complacency plays a key role in deciding the market opportunity.

Ha5: Disruptive technologies or Exponential Technologies will be contributing major share of Industries revenue.

The Alpha value of below 0.679 shows that it is statistically insignificant so this hypothesis is rejected thus may indicate that exponential technologies may not be major contributing sector for IT sector however it is rejecting the fact that exponential technologies are here to stay thus market players can't be complacent about such disruptions. Component Factor Analysis, FA procedures are based on the initial computation of a complete table of intercorrelations among variables (correlation matrix). The correlation matrix is then transformed through estimation of factor model to obtain factor matrix containing factor loadings for each variables on each derived factor. The loadings of each variables on the factors are then interpreted to identify the underlying structure of variables, the above Anti image covariance which is correlation matrix shows that correlations and Communalities which are greater than 0.5 hence these are good for analysis, extraction method principal component analysis can be used to explain how much each variable can load after the extraction obviously it won't load 1.0 as before extraction now one can see TaperMarketGrowth after extraction is 0.971 similarly everything is above 0.5. As above SEM model is fitting thus one can start conclusions such as the mood in the Indian IT Services providers are having mixed response with 30%+ each

responding saying industry will touch US\$200-299 or US\$300+ billion dollars, one can also see that more than 50% respondents saying industry will cross US\$300 Billion.

According to the survey response, more than 50% of the experts saying either Indian IT services providers had become complacent or confused but almost 50% indicating that time has to wake up and they have started rolling their sleeves to gear themselves up for transforming the industry sector. The overwhelming majority of 70% experts feel the way out is in the form of innovative business model and 30% each feel that focus on key accounts Milman (1996) specialization, M&A will also show the way out for the industry. The Expert survey reveals that most agree Indian IT services providers have been leveraging the Talent & cost arbitrage thus leading to differentiator but later also majority has indicated cost arbitrage is fast eroding but talent arbitrage will remain for times to come.

CONCLUSIONS

This study tries to go beyond the works of Kellogg & Chase (1995), Victor (1990), Daft & Lengel (1984) and Mithas & Whitaker (2007) to bring in the holistic perspective on industry attributes. There is a clear lack of innovation; business model innovation by Indian IT services industry, complacency has blurred the vision to identify large opportunities which are scalable to create the next big wave which will power the market to touch a Trillion US Dollar market size. Authors' study has brought in an element of loss of strategic intent due to complacency while competing resulting in reduced competitive intensity in-turn resulting in lack of strategic focus. Indian IT Service providers have started realizing that the waves created by economic liberalization, policy shift and outsourcing waves are almost over thus industry has to create next wave by driving disruptive innovation among the industry players shunning complacency.

One can conclude that Indian IT service providers can start leveraging the above model to understand that complacency has led the industry to rough patches resulting in reduced market opportunities. There are limited resources government, society & Industry Sector has and can provide, similarly limited budget for industry associations and bodies like NASSCOM thus industry has to enable interventions to bring-in strategic focus towards creation of market opportunities. Convergence of exponential technologies has brought in varied value propositions & differentiators, IT Services industry is evolving from its current form to newer versions such as OLA, Amazon, Alibaba, and Authors study tries to reorient IT Services industry towards newer definitions.

Academic Contributions of the Paper

Not many research papers till now have attempted to map the market opportunity pertaining to global IT services sector using various academic constructs. Most researchers have not taken into account complacency, strategic intent and strategic focus as key constructs while analyzing the growth of global IT services sector. Complacency has created lack of adequate progress in the growth of IT services sector between 2013-early 2018 given the stagnation of revenue of global IT services. This paper attempts to build a model which links the independent variables of a) differentiating factors of IT services players and b) disruption in the global IT services market along with variables of c) complacency, d) value proposition and variables of e) strategic intent, and f) strategic focus, to understand market opportunity (dependent variable). This paper got support for the premise that IT services players may become complacent while competing in the market place leading to loss of strategic intent and strategic focus and thereby

to reduced market opportunity. Similarly, market disruption by select IT services player leading to complacent competition and value proposition may also lead to loss of strategic intent and strategic focus and thereby to reduced market opportunity. The academic contribution of the paper lies in building the model to understand prospects for future growth leading to either growth or degrowth of market opportunities.

Managerial Implications of the Paper

The proposed model clearly describes to practitioners what levers they have to work on so that they can improve market opportunities, practitioners should not only focus on differentiation and disruption of market, one should also focus on not being complacent after creating value proposition rather should focus on reducing complacency and sustaining increased value proposition. Practitioners through this model can understand how strategic intent leading execution focus may lead to expanded market opportunities. One can see that though a company which has disrupted the market may still have reduced market opportunity if complacency, strategic intent, strategic focus are not on in sight. Any differentiation though is sustained may still result in stagnation of market opportunity if one fails to control complacency. Practitioners can make out here that even a company with moderate disruptive powers and differentiating abilities can still expand its market opportunities by focusing on drastically reducing complacency to take on complacent competition or (and) also by adding significant value addition to the market however Strategic Intent and Strategic Focus plays a vital role in larger market opportunities.

Future Research Direction of the Paper

The current study limits itself to IT Services sector, the proposed model has not been tested for other industry sectors, research scholars can take the model, instruments, can also attempt to vary parameters to align to their areas of focus. The limitations of the study was that it was limited to top 2000 industry sectors and was India focused, IT researchers from across the world can take it their respective industry to test in their market. Authors also could not delve deep into next wave of arbitrages such as innovation, business model however researchers could further expand the model or test the model for different parameters of arbitrages.

REFERENCES

- Ang, S., & Straub, W.D. (1998). Production and Transaction Economies and IS Outsourcing: A Study of the U. S. Banking Industry, *MIS Quarterly*, 22(4), 535-552.
- Asher, M.G., & Nandy, A. (2007). Demographic complementarities and outsourcing: implications for India. *IIMB Management Review*, 19(2), 93-102.
- Bhattacharjee, S., & Chakrabarti, D. (2015). Indian IT outsourcing industry: Future threats and challenges—A reassessment. *Futures*, 67, 11-21.
- Bhattacharjee, A., & Lin, C.P. (2015). A unified model of IT continuance: three complementary perspectives and crossover effects. *European Journal of Information Systems*, 24(4), 364-373.
- Cheng, Z., & Nault, B.R. (2007). Industry level supplier-driven IT spillovers. *Management Science*, 53(8), 1199-1216.
- Clemons, E.K., Dewan, R.M., & Kauffman, R.J. (2006). Digital economy and information technology value. *Journal of Management Information Systems*, 23(2), 7-11.
- Daft, R.L., & Lengel, R.H. (1984). *Information richness: A new approach to managerial behavior and organizational design*, L.L. Cummings, B.M. Staw, eds. Research in Organizational Behavior, 6. JAI Press, Greenwich, CT, 191-225.

- Davis, G., Ein-Dor, P., King, W.R., & Torkzadeh, R. (2006). IT offshoring: History, prospects and challenges. *Journal of the Association for Information Systems*, 7(1), 32.
- Guodong, G, Gopal, A., & Agarwal, R. (2010). Contingent effects of quality signaling: evidence from the Indian offshore IT services industry. *Management Science*, 56(6), 1012-1029.
- Han, K., Kauffman, R.J., & Nault, B.R. (2011). Research note Returns to information technology outsourcing. *Information Systems Research*, 22(4), 824-840.
- Kadam, P.V., & Sudarsan, P.K. (2016). Competitiveness of India's Software Industry: A Macro Level Analysis. *Journal of International Economics* (0976-0792), 7(1).
- Kellogg, D.L., & Chase, R.B. (1995). Constructing an empirically derived measure for customer contact. *Management science*, 41(11), 1734-1749.
- Kemme, D.M., Nikolsko-Rzhevskyy, A., & Mukherjee, D. (2014). Foreign Capital, Spillovers and Export Performance in Emerging Economies: Evidence from Indian IT Firms. *Review of Development Economics*, 18(4), 681-692.
- Li, X. (2014). Relational contracts, growth options, and heterogeneous beliefs: A game-theoretic perspective on information technology outsourcing. *Journal of Management Information Systems*, 31(2), 319-350.
- Luftman, J., Derksen, B., Dwivedi, R., Santana, M., Zadeh, H.S., & Rigoni, E. (2015). Influential IT management trends: an international study. *Journal of Information Technology*, 30(3), 293-305.
- McKinsey Global Institute. (2005). The emerging global labor market: Part I – The demand for offshore talent in services. *Washington, DC: MGI*.
- Mehta, Y., & Rao, U.S. (2015). Strategic Opportunities for Indian IT Companies: A Study. *IUP Journal of Business Strategy*, 12(1).
- Melville, N., & Ramirez, R. (2003). Assessing IT business value within interorganizational processes. *AMCIS 2003 Proceedings*, 181.
- Milman, T.F. (1996). Global key account management and systems selling. *International Business Review*, 5(6), 631-645.
- Mithas, S., & Whitaker, J (2007). Is the World Flat or Spiky? Information Intensity, Skills, and Global Service Disaggregation. *Information Systems Research* 18(3), 237-259.
- Mitzi, M.M., Massey, A.P., & Khatri, V. (2010). Connecting IT services operations to services marketing practices. *Journal of Management Information Systems*, 26(4), 65-85.
- NASSCOM, (2016). October 2016 Report, <http://www.nasscom.in/>
- OECD G20 Innovation report. (2016). Report prepared for the G20 Science, Technology and Innovation Ministers Meeting, 4, November 2016. OECD Science, Technology, and Innovation Outlook 2016, Digital Economy OECD Observer Roundtable, 307, Q3 2016.
- Rajan, T.A., & Madras, I.I.T. (2008). Comparison of Software Service Providers: An Exploratory Study, *IIMB Management Review*, December, 2008.
- Rogers, E.M. (1995). Diffusion of Innovations, *New York: Free Press*
- Schlaepfer, R.C., & Koch, M. (2015). Industry 4.0: Challenges and solutions for the digital transformation and use of exponential technologies, *Deloitte Industry Research Report*, 2015.
- Seshadri, D.V.R. (2011). Bucking the Trend: A Look at Zyme Solutions' Non-linear Business Model for IT Services from India. *Asian Case Research Journal*, 15(01), 37-62.
- Sharma, D.C. (2014). Indian IT outsourcing industry: Future threats and challenges. *Futures*, 56, 73-80.
- Shleifer, A. & Vishny, W.R. (1997). The Limits of Arbitrage, *The Journal of Finance*, LII(1), March 1997.
- Singh, M. (2014). Good Customer Service Makes the Difference, *Journal of Internet Banking and Commerce*, August 2014, 19(2).
- Stringer, R. (2000). How to manage radical innovation. *California management review*, 42(4), 70-88.
- Umamaheswari, R., & Momaya, K. (2008). Role of Creative Marketing in 10X Journey: Case of IT Firms from India, *IIMB Management Review*.
- Victor, B. (1990). Coordinating work in complex organizations. *Journal of Organizational Behavior*, 11(3), 187-199.
- <http://www.digitalindia.gov.in>
- <https://www.gartner.com/newsroom/id/3482917>
- <https://www.ibef.org/archives/detail/b3ZlcnZpZXcmMzcwMDQmODk=>
- <http://www.nasscom.in/knowledge-centre/facts-figures>
- <http://www.nasscom.in/knowledge-center/publications/future-internet-india>
- <http://www.nasscom.in/search/node/DISRUPTION>
- http://www.pmindia.gov.in/en/major_initiatives/make-in-india/