

**A Study of Revised Guidelines of Department of
Telecommunications for Other Service Providers (OSPs)**

**A Dissertation submitted to Indian Institute of Public Administration (IIPA) for the
Master's Diploma in Public Administration (MDPA) in Partial Fulfillment of the
requirement for the Advanced Professional Programme in Public Administration (APPPA)**

By

Ajay Negi

(Roll No. 4825)

Under the guidance of

Prof. Ashok Vishandass

**48th Advanced Professional Programme In Public Administration
(2022-23)**

INDIAN INSTITUTE OF PUBLIC ADMINISTRATION

NEW DELHI-110002

CERTIFICATE

I have the pleasure to certify that Shri Ajay Negi has pursued his research work and prepared the present dissertation titled ‘A Study of Revised Guidelines of Department of Telecommunications for Other Service Providers (OSPs)’ under my guidance and supervision. The dissertation is the result of his own research and to the best of my knowledge, no part of it has earlier comprised any other monograph, dissertation or book. This is being submitted to the Indian Institute of Public Administration (HPA), New Delhi for Master's Diploma in Public Administration in partial fulfilment of the requirement for the Advanced Professional Programme in Public Administration (APPPA) of the IIPA, New Delhi.

I recommend that the dissertation of Shri Ajay Negi is worthy of consideration for the award of Master's Diploma in Public Administration of Indian Institute of Public Administration, New Delhi.

(Prof. Ashok Vishandass)

Indian Institute of Public Administration
I.P. Estate, Ring Road, New Delhi-110002

Acknowledgement

I express my sincere thanks and gratitude to my supervisor, Prof. Ashok Vishandass, without whose sincere and careful guidance, this study could not have been completed. He has been a constant source of inspiration and encouragement in the pursuit of this study. His painstaking efforts left no stone unturned to make this dissertation work possible.

I am also grateful to Dr.Roma Debnath, who beautifully explained us the concepts and the process of dissertation writing. I also take this opportunity to thank Prof. V.K.Alok, Programme Director and Prof. Kusum Lata, Programme Co- Director of 48th APPPA for extending their support to complete the work.

Ajay Negi

Table of Contents

	Certificate	1
	Acknowledgements	2
	Table of contents	3
	List of Figures	6
	List of abbreviations	7
	Abstract	9
1	Chapter 1: Introduction	10
1.1	Background	10
1.2	Statement of the Problem	14
2	Chapter 2: Literature Review	18
3	Objectives, Methodology and Rationale	25
3.1	Objectives	25
3.2	Research Design and Methodology	27
3.3	Data Sources	27
3.4	Rationale or Justification	28
3.5	Research Questions	28
3.6	Limitation of the Study	29
4	Chapter 4: Evolution of the OSP Policy since 2000	30

4.1	Background of OSPs	30
4.1.1	Overview of the BPO Concepts	30
4.1.2	Different types of BPO services	32
4.1.3	Some of the common BPO services	34
4.1.4	Pros and cons of BPOs	36
4.1.5	BPO industry in India	39
4.1.6	Global Services Location Index	42
4.2	Evolution of OSP Policy Since 2000	44
4.2.1	Background	44
4.2.2	Evolution of OSP Policy	46
4.2.3	Highlights of the revised OSP Guidelines	49
4.2.3.1	Terms & Condition for OSP registration-2008	49
4.2.3.2	Revised Guidelines for OSPs	50
5	Chapter 5: Analysis and Findings	53
5.1	Survey Questionnaire	53
5.2	Views of the Respondents	54
5.2.1 to 5.2.4	Responses w.r.t. research questions	54-62
5.3	Data interpretation of Survey Responses	67
5.3.1 to 5.3.10	Response to survey questions	67-79
5.4	Analysis of Data	79
5.5	Outcome of the Analysis	86

5.5.1	Background of Liberalized Guidelines	86
5.5.2	Policy Gaps in the Revised OSP Guidelines w.r.t. Research Questions	87
6	Chapter 6: Recommendations and Conclusions	90
6.1	Conclusion	90
6.2	Recommendation	94
6.3	Concluding Remarks	95
	References & Bibliography	96

List of Figures

Figure No.	Details	Page No.
Fig. 1.1	Architecture of OSP with foreign EPABX	12
Fig: 3.1	IT-BPM revenue during FY2021 & 2022	26
Fig. 4.1	Block diagram showing concept of BPO	32
Fig: 4.2	Picture of a BPO center	34
Fig. 4.3	Geographic distribution of IT-BPM exports	39
Fig. 4.4	Segment-wise break-up of Revenues in FY22	40
Fig: 4.5	GSLI index of top 60 countries	43
Fig. 5.1(a-s)	Analysis of the data collected through the structured questionnaire	67-79

List of Abbreviations

1. ACTO Association of Competitive Telecom Operators
2. AGR Adjusted Gross Revenue
3. BPO Business Process Outsourcing
4. BTRC Bangladesh Telecommunication Regulatory Commission.
5. CCSP Call Center Service Provider
6. CDR Call Data Records.
7. DRC Disaster Recovery Center.
8. DoT Department of Telecommunications
9. EPABX Electronic Private Automatic Branch Exchange
10. EU European Union
11. GSLI Global Services Location Index
12. HCC Hosted Call Center.
13. HCCSP Hosted Call Center Service Provider.
14. IP Internet Protocol
15. IPLC International Private Leased Circuit
16. IPR Intellectual Property Rights
17. ITeS IT enabled services
18. IVR Interactive Voice Response
19. LLP Limited Liability Partnership
20. MeitY Ministry of Electronics and Information Technology
21. NASSCOM National Association of Software and Service Companies
22. NTP New Telecom Policy

23. OSP	Other Service Provider
24. OSPAI	Other Service Providers Association of India
25. PCO	Public Call Office
26. PDP	Personal Data Protection
27. PoP	Point of Presence
28. PPVPN	Provider Provisioned Virtual Private Network
29. PSTN	Public Switched Telephone Network
30. RA	Remote Agent
31. TEC	Telecom Engineering Centre
32. TERM Cell	Telecom Enforcement and Resource Monitoring Cell
33. TRAI	Telecom Regulatory Authority of India
34. TSP	Telecom Service Provider
35. VPN	Virtual Private Network.
36. VSAT	Very Small Aperture Terminal
37. WFA	Work From Anywhere
38. WFH	Work From Home

Abstract

The Business Process Outsourcing (BPO) is the fastest growing segment of the ITES (Information Technology Enabled Services) industry in India. The factors like economy of scale, business risk mitigation, cost advantage, utilization improvement and competency of its skilled labor have all lead to the growth of the Indian BPO industry. Business process outsourcing in India, which took off around the mid-90s after the economic liberalization, has now grown by leaps and bounds.

India is now the world's preferred market for BPO companies, among other competitors, such as, China, Indonesia, Malaysia, Philippines and Vietnam . The cheap labor costs and India's huge talent pool of skilled, English-speaking professionals have contributed to BPO boom in India. In addition, the Government has also supported the BPO sector through evolving regulatory regime which propelled its growth. In this context, the Government has suitably modified the regulatory framework from time to time to suit its growth. This study, therefore, proposes to discuss the regulatory changes that forms part of the present revised guidelines for OSPs issued by the department of Telecommunications in the specified areas of concern and suggest measures for course correction to sustain the growth momentum in the BPO sector.

CHAPTER: 1:

INTRODUCTION

1.1 Background

The New Telecom Policy, 1999¹ issued by the Department of Telecommunications (DoT), emphasized to create, a new category of telecom service called the ‘Other Service Providers’ (OSPs). These OSPs provided application services like tele-banking, tele-medicine, tele-education, tele-trading, e-commerce, call center, Network Operation Centers and other IT Enabled Services. The Terms and Conditions, as issued by the government in February 2000, stipulated that these Application Service Providers could take telecom resources from authorized Telecom Service Providers. However, these entities would not provide switched telephony. No license fee was charged from OSPs but registration for such entities to provide the above specified services was required to be done with the DoT . The registration of OSPs had started in the year 2000. And these guidelines were amended from time to time for incorporating specific requirements at that point of time.

However, due to the immense changes in technology and development of different networking architectures and solutions for setting up of OSP network, evolution of new user applications & service delivery scenarios and also various representations received from industry during 2015, to overhaul the whole process afresh, a reference was sent to TRAI soliciting recommendations on the revised terms & conditions for registration of OSPs. DoT was of the view that a technology neutral framework was needed to be devised to foster innovations for setting up the OSP service delivery platform which is also cost-efficient for promotion of OSPs

¹ NTP 1999 available at <https://dot.gov.in/new-telecom-policy-1999>

in the country. However, the challenge was to take care of national security aspects in the best interest of the country and at the same time it must be ensured that the OSP entities do not infringe on the jurisdiction of the TSPs. Thereafter, on receipt of TRAI recommendations on revised terms & conditions for registration of OSPs dated 21.10.2019² and after detailed deliberations within DoT & also with various concerned stakeholders, the ‘New Guidelines for OSPs’ have been issued on 05.11.2020³. The Guidelines were subsequently amended and the ‘Revised Guidelines for OSPs’ was issued on 23.06.2021⁴. As per the existing revised guidelines, *“Other Service Provider (OSP) is an Indian company, registered under the Indian Companies Act, 2013 or an LLP (Limited Liability Partnership) registered under LLP Act, 2008 or a partnership firm or an organization registered under Shops and Establishment Act providing voice based Business Process Outsourcing (BPO) services to their customers located world-wide including in India”*.

The business process outsourcing here refers to contracting of the task of performing certain functions of a business enterprise to another entity. These functions are often non-strategic and other than the core function of the business enterprise but they can be very critical for a business enterprise. The development and availability of present day information technology (IT) tools have facilitated outsourcing of such activities to entities in a distant remote location. These cross-border IT services, often referred as IT enabled services, are functions provided from one location to another over telecommunication networks (via wired or wireless devices), and can be contracted externally (i.e. third party outsourcing) or ensured by a remote subsidiary of the same company (i.e. captive BPO). In the present day competitive globalized

² OSP recommendations available at https://traigov.in/sites/default/files/Recommendation_21102019.pdf

³ New guidelines for OSPs at https://dot.gov.in/sites/default/files/2020_11_05%20OSP%20CS.pdf?download=1

⁴ Rev. guidelines for OSPs at <https://dot.gov.in/sites/default/files/Revised%20OSP%20Guidelines.pdf?download=1>

economy, there is inherent pressure to outsource non-core functions and focus on the core functions of the enterprise. And this is one of the reasons why the large multinational companies from the developed nations function so efficiently and effectively. Initially, this started with the hiving off of certain functions to be undertaken by specialized, local firms in the developed countries themselves and later on to the distant locations. Now, with the availability of cheap and better network technology, communications infrastructure and bandwidth, many of these services can be managed and provided from off shore locations.

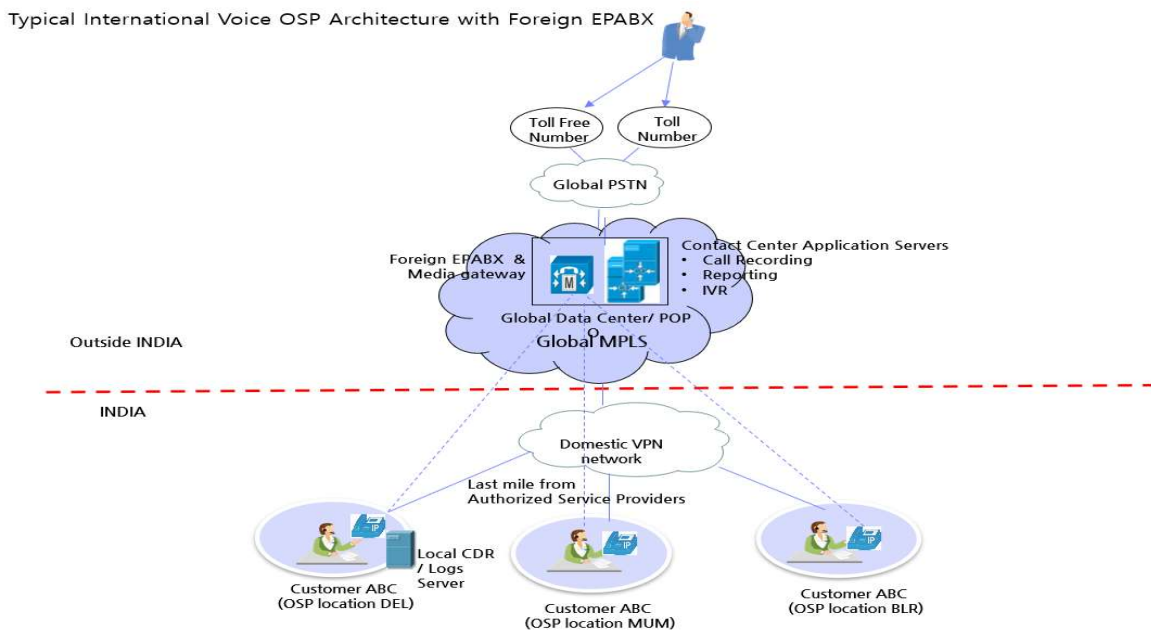


Fig. 1.1: Architecture of OSP with foreign EPABX

(Source: Block diagram sourced from internet)

Presently, many developing countries including India are taking advantage of this advancement of technology. In the mid-nineties, there was significant rise in the number of unemployed skilled graduates and the requirement in the job market was showing increase only in a few specific areas. And these skilled graduates seeking jobs preferred jobs in higher wage bracket which was difficult to come by through domestic employers during that period. Incidentally, during the same time, the multinational companies abroad were looking for the technical manpower at distant locations and were ready to offer attractive remuneration. This was a win-win situation for both and this is how the BPO sector boomed. As the skilled and competent manpower was adequately available in India, the multinational companies abroad could meet their demand of the cheap labor.

Historically, the government has invested heavily in higher education and this futuristic and prudent thinking has helped in creating skilled manpower that matched the requirement of the multinational companies. There was significant contribution from the private educational institutions also after the independence in creating a large number of scientific and technical manpower in India. In addition, the current emphasis on computer education by the government and also the private institutions have ensured the availability of a large pool of computer savvy skilled manpower which has helped the ITES industry to develop at a rapid pace. Traditionally, Indian population also has a high level of English proficiency compared to many other Asian countries. More importantly, given the rupee-dollar exchange rate coupled with a large supply of skilled manpower, Indian labor turned out to be considerably less expensive for the US business enterprises.

1.2 Statement of Problem

In pursuit of accomplishing the objectives the National Digital Communications Policy, 2018⁵ by year 2022, “the NDCP, 2018 envisaged three Missions as mentioned below:

- i. **Connect India:** Creating Robust Digital Communications Infrastructure.
- ii. **Propel India:** Enabling Next Generation Technologies and Services through Investments, Innovation and IPR generation.
- iii. **Secure India:** Ensuring Sovereignty, Safety and Security of Digital Communications.”

And under the ‘**Propel India**’ Mission, there is mention about “*Improving the Terms and Conditions for ‘Other Service Providers’, including definitions, compliance requirements and restrictions on interconnectivity*”. The Government has accomplished this objective by liberalizing this sector by issuing the revised Guidelines for OSPs dtd. 23.06.2021. This step of the Government was hailed by Industry as a land mark policy initiative which is expected to make India a preferred BPO/ITeS (IT enabled services) destination and help the BPO sector to grow at a faster rate.

The Ministry of Electronics and Information Technology (**MeitY**) is responsible for overseeing the BPO sector. It coordinates efforts to promote skill development programs, enhance infrastructure capabilities, and support research and development to help India maintain its leadership position in IT and IT-enabled services. It is pertinent to mention that **MeitY** had

⁵ NDCP,2018 available at <https://dot.gov.in/sites/default/files/National%20Digital%20Communications%20Policy-2018.pdf?download=1>

tabled the draft Personal Data Protection Bill, 2019 (PDP Bill, 2019)⁶ in the Lok Sabha (Lower House of Parliament of India). This Bill covered mechanism for protection of personal data and proposes the setting up of a Data Protection Authority (PDA) of India for the same. It provided for extensive provisions around collection of consent, assessment of datasets, data flows and transfers of personal data including to third countries and other aspects around anonymized and non-personal data. There were certain issues regarding provisions for government accessing private data or government agency data on grounds of sovereignty or public order, role of social media intermediaries is being regulated more strictly on several fronts, non-personal data etc. Later, the PDP Bill, 2019 was withdrawn from the Lok Sabha in August, 2022 due to opposition from digital business majors, civil society, and also from the Government's own expert Committee. There was also a growing realization that a new data privacy legislation cannot be a 'net loss' to Indian businesses, especially start-ups. Thereafter, MeitY had published and sought inputs on the draft Digital Personal Data Protection Bill, 2022⁷ (DPDP Bill, 2022), which seeks to replace the earlier PDP Bill, 2019. The new draft DPDP Bill, 2022 offers significant concessions on cross-border data flows, relatively soft stand on data localization requirements and permits data transfer to select global destinations keeping in view the interests of Indian businesses, especially the startups, which is likely to foster country to country trade agreements. The policy for the Other Service Providers (OSPs) i.e. the voice based BPO service providers, in context of telecom regulatory regime, is governed by the Department of Telecommunication's Revised Guidelines for Other Service Providers (OSPs). It is observed that the revision of the policy for OSPs was initiated based on the recommendations of TRAI on 'Review of Terms and Conditions for registration of OSPs' issued on 21.10.2019 but the Revised

⁶ Available at <https://prsindia.org/billtrack/the-personal-data-protection-bill-2019>

⁷ Available at <https://www.meity.gov.in/content/digital-personal-data-protection-bill-2022>

Guidelines for OSPs issued by DoT on 23.06.2021 are much broader than the recommendations of TRAI in terms of the liberalization. At the same time, there are certain issues which seems to have not been covered in the Revised Guidelines for OSPs dated 23.06.2021 and they are likely to affect the overall growth of the BPO sector. So this study of the guidelines assumes significance to bring out the gaps in the policy space and suggest for the course correction to sustain the expected growth momentum in the BPO/ ITeS sector. The key issues listed below require a research study:

- i. The revised policy doesn't mention explicitly about the Provision of Call Centre Facilities by Contact Centre Service Provider (CCSP)/ Hosted Contact Centre Service Providers (HCCSP). The CCSP / HCCSP will fuel the next wave of growth through automation, reducing overheads of customers. Speech Recognition, Voice Bots, Distributed IVRs and Application Services for Call Centers at a Click with Work from Anywhere capability are the new age call centers and there are now specialized companies that offer these. Due to the existing ambiguity in this space, some of the service providers have taken Access service license and some have taken Audio conferencing/ Audiotex Licenses. To provide a competitive edge to our industry in the fierce competition from other global players, there has to be absolute clarity on the functioning of the CCSP/ HCCSPs.
- ii. The existing Guidelines for OSPs allows the location of EPABX at foreign countries and it also allows the Remote Agents of the OSP to directly connect with the EPABX (including EPABX at the foreign locations). However, the recommendations of TRAI allows location of EPABX in foreign land for international OSPs but does not mention anything about the remote agents connecting directly with the EPABX in foreign

countries. In cases where remote agents are allowed to connect directly with the foreign EPABX, there may be a possibility where the OSP has only remote agents in India and no other infrastructure setup and no call data records in the country.

- iii. One of the main reasons for starting of the registration regime of OSPs in 2000 was the collection and the maintenance of the statistical information about the OSPs operating in the country. But in the existing policy, the requirement of registration by the OSPs has been totally removed and there is no way to collect and update the statistical information about the number of OSPs operating in the country. This is required for taking decisions regarding the policy interventions and updating in future.
- iv. The major countries from EU and US, outsourcing BPO services from India are very particular about data protection and data privacy issues and at present there is no specific data protection and data privacy law in India. Though there is no mention about the Data Protection law in the revised policy but India need to enact the Data Protection law to deal with the data protection and privacy issues especially for the customers in foreign countries. This will help India retain the leadership position in BPO business and remain competitive in global market.

CHAPTER 2

LITERATURE REVIEW

In order to have the first hand understanding of the subject as to what is already written about the issues related to the OSP Policy with respect to the regulations in the Telecom domain, some of the literature available in the public domain has been studied. As the proposed study is specialized and specific to Telecommunication field, a limited literature on the relevant topic is available. The regulatory framework in the telecommunications sector world over is different and hence it cannot be equated with each other at par and thus cannot be compared vis-à-vis Indian regulations. The following research papers on the subject have been reviewed.

Bangladesh Telecommunication Regulatory Commission (2013), ‘Instructions for Issuance of Registration Certificate for the Operation of BPO/Call Center (International and Domestic)’

The document mentions about the registration process for the willing Call Center, Hosted Call Center (HCC) and Hosted Call Center Service Provider (HCCSP) entities with the Commission in prescribed form. The BTRC defines HCC and HCCSP in their regulatory documents. HCC/ HCCSP are allowed to connect on IPLC. There is no mention about the remote agents connecting to foreign EPABX. As per these guidelines, Call Center/HCC operators will not configure the equipment to support remote agents. The guideline puts the responsibility for the protection of the sensitive and confidential information of its clients with the BPO entities and mentions that they shall take adequate measures to protect the same.

DOT (2008), Revised “Terms and Conditions - Other Service Provider (OSP) Category issued vide No.18- 2/2008-CS-I, 5th August, 2008.

This document provides for the regulations for registration of the OSPs and also the various terms & conditions that were required to be adhered to in transacting the OSP business. These regulations mandates for registration for both Voice & Data based operations, lot of documentations including network diagrams were required to be submitted, Bank guarantees upto Rs. 1 crore were required to be submitted, various requirements like using PPVPN, static IPs, details of WFH agents intimation etc. were required to be followed. For international OSPs EPABX not allowed in foreign countries and PSTN connectivity at Indian end was not permitted. Further, it was mandatory for the OSPs to submit *annual reports along with the network diagrams*. There were lot of restrictions and compliances involved in the course of doing business. This document helps us understand the level of policy liberalization undertaken with the issue of revised guidelines in 2021.

DOT (2021), ‘Revised Guidelines for Other Service Providers (OSPs)’ issued on dated 23rd June,2021.

This is the existing liberalized policy issued by DoT for OSPs. This was primarily based on the recommendations of TRAI on the subject (2019). However, the DoT policy (2021) goes much beyond the TRAI recommendations in liberalizing the policy. As per the revised policy the requirement of registration, bank Guarantees, annual reports/ Periodic compliances have been removed. Work From Anywhere (WFA) within India, Interconnectivity between OSP centers of different OSP companies, Internet at centralized location have been allowed. Distinction

between Domestic and International OSPs removed, EPABX can be located anywhere in the world, OSPs can locate their EPABX at third Party Data Centers in India and can also use EPABX services of Telecom Service Providers. However, the policy is silent on CCSP/HCCSP. The policy allows remote agents to connect directly with EPABX, which may have implications in case of EPABX in foreign locations. Further, the revised policy has removed the requirement of registration of OSPs, thus no *direct statistical data about* the OSPs for future policy updates are available (pl. complete sentence). The revised policy was further liberalized version of the New Guidelines for Other Service Providers (OSPs) issued on 05.11.2020. (Pl summarise key points of guidelines, not what it does not).

Hossain, Moazzem & Kathuria, Rajat. (2004), 'Telecommunications reform and the emerging 'new' economy: the case of India.' World Review of Science, Technology and Sustainable Development. 1(2) DOI: 10.1504/WRSTSD.2004.005514.

The paper discusses about the emerging 'new' economy sector and its main drivers i.e. IT (knowledge-based), liberalization and reform in telecommunications. This paper dwells into both NTP 94 and NTP 99 documents. The paper finds that the telecommunications industry has contributed to establish a 'new' sector in the economy driven by the IT/Software and IT enabled services and in short span substantially contributed to reversing the age old current account problem and has created hundreds and thousands of jobs. It also cautions that these achievements are not immune from any threats in the future. Therefore, the regulatory policies need to be proactive to sustain the growth momentum in the sector.

Kshetri, Nir (2017), “Cyber security in India: Regulations, governance, institutional capacity and market mechanisms”, *Asian Research Policy*, 8(1), 64-76.

The Author discusses about the meteoric rise in cybercrime which is an issue of pressing concern to businesses and consumers in India. India also generates cybercrimes that affect Internet users worldwide. Agents in India with massive amount of personal data allegedly called potential victims and threatened dire consequences. India though has stepped up enforcement activities, however, there is an enormous gap in enforcing laws. Cybercrime awareness level is very low among the law-enforcement community. Like other developing economies, India faces problems like lack of trained law enforcement manpower, up-to-date technology and severe shortage of cyber security professionals.

Meenakshi Rajeev and B P Vani (2008),’ Problems and Prospects of Business Process Outsourcing Industry: A Case Study of India. Institute for Social and Economic Change 1 June 2008 Online at <https://mpa.ub.uni-muenchen.de/9834/> MPRA Paper No. 9834, posted 06 Aug 2008 23:44 UTC. PP 11

The paper puts emphasizes on the need for simplification of business procedures and reduction of business start up time and also the reduction of bandwidth tariff. Further, it also brings out the important concern of western clients about data security and privacy issues and importance of enacting an appropriate privacy and data protection law.

National Association of Software and Service Companies (2019), 'NASSCOM response to TRAI Consultation Paper on Review of Terms and Conditions for Registration of Other Service Providers (OSPs) dated 29.03.2019.

Regarding the requirement for registration of OSPs, NASSCOM is of the opinion that registration for the sake of statistical information should now be abolished and such data may be taken from alternate sources like the corporate Ministry's master data where annual reports are filed by the companies under Companies Act and some information can be taken from the TSPs who provide bulk telecom resources to the OSPs. NASSCOM further suggested to allow OSP entities to take internet connectivity at one location and allow them to distribute among their other centres, allow unrestricted IP-PSTN connectivity, interconnectivity among OSP centres and WFH. CCSP/HCCSP should not be required to register separately under a separate regulatory regime.

Nipul Patel & Susan E. Conners (2008), 'Outsourcing: Data Security And Privacy Issues In India' PP 14-19.

The authors have studied Indian security measures and legal security issues. The study found the Indian cyber laws and measures put in place by Indian companies is keeping pace with other international security measures and is addressing the major legal security and privacy issues. The paper concludes that all countries outsourcing these services are increasingly becoming stricter on data privacy and protection and are defining what measures must be taken to protect data. This is an international concern and countries wishing to attract international outsourcing

must address security and privacy issues. But at present India must enact its data protection law at earliest to remain competitive and safe to the attract business in this sector.

Other Service Providers Association of India (2019),’ OSPAI response to TRAI Consultation Paper on “Review of Terms & Conditions for registration of Other Service Providers (OSPs)” dated 29.03.2019, p.2-4,14,18.

In this document the OSPAI has responded to the queries raised by TRAI in the consultation paper on various issues. With respect to the issues being studied in the current research work, the OSPAI has opined that the registration of the OSPs should continue but wanted unlimited validity period of registration. Regarding CCSP/HCCSP, OSPAI is of the view that there should not be any undue restriction on the scope of services under CCSP/HCCSP, especially since they do not infringe on the scope of TSP services and that they should register under OSP registration and also comply terms and conditions under OSP Guidelines. However, there was no queries related to remote agents connecting directly to overseas EPBAX.

TRAI (2019), Consultation Paper on Review of Terms and Conditions for registration of Other Service Providers (OSPs) dated 29th March, 2019

The paper mentions about various issues that have been consulted with the stakeholders before issue of the recommendations. The paper mentions about the questions that were put forward to the stakeholders before issuing the recommendations. The question raised to the stakeholders, which are relevant to this study, included, whether registration of OSP should be

continued or any other regulatory framework should be adopted for OSPs so that the purpose of registration specified by government is met, scope of services under CCSP/HCCSP, checks required / conditions imposed on the CCSP/ HCCSP and Whether use of EPABX at foreign location in case of International OSPs may be allowed etc. All relevant questions have been put to the stakeholders before finalizing the recommendations by TRAI.

TRAI (2019), 'Recommendations on Review of Terms and Conditions for registration of Other Service Providers (OSPs)' 21st October,2019.

The paper gives a detailed background of various recommendations regarding the OSPs. On the issues pertaining to the objectives of this study, it is found that the recommendations recognized the CCSP/HCCSP and recommended for covering them under regulatory framework and suggested for two categories. TRAI also recommended for EPABX at foreign locations but for International OSP and not for domestic OSPs. Further, it allowed for remote agents to connect to OSP centre being an extended agent position of the OSP centre. But it does not allow connecting with EPABX directly as allowed by the revised policy of DoT and this may have other implications. The recommendations suggest for continuation of the registration of OSPs, however, it has been removed in the revised policy. These issues may need further study for finding future implications.

CHAPTER 3

OBJECTIVES, METHODOLOGY AND RATIONALE

3.1 Objectives

The Indian BPO industry has been a global leader in offshore outsourcing since the beginning of 1990s. However, by the turn of the century, BPO in India emerged as one of the top outsourcing destinations in the world. This is mainly driven by India's IT services sector. Twenty years later, the Indian ITES-BPO industry is expected to remain a popular outsourcing destination for decades to come. The various factors that have contributed to India's success in the BPO sector can be attributed to:

- i. India's highly skilled and educated manpower.
- ii. India offers a wide range of services that are in high demand.
- iii. India has favorable and liberalized policy framework which is driving the Indian IT outsourcing market.
- iv. Compared to other countries, especially developed countries, service cost in India is much lower.

The ITES-BPO market has grown exponentially over the past 20 years. This growth is driven by growing demand for digital services, which is driven by the growth of technology-centric new businesses and explosive growth in data volumes. The total revenues of IT-BPM industry (excluding e-commerce) have crossed the \$200 billion mark to reach \$227 billion in FY2022. The export revenue from this industry has been estimated at close to \$178 billion in FY2022. *(Source: Invest India website⁸)*

⁸ Data available on <https://www.investindia.gov.in/sector/it-bpm>

FY 2022: Strong Growth –\$227 Bn revenue, \$30 Bn Incremental Revenue in the Year

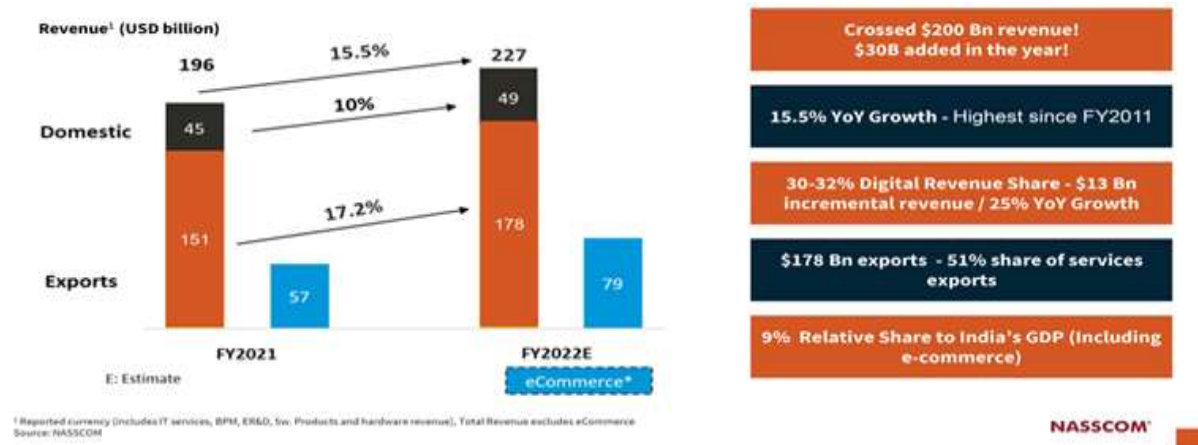


Fig: 3.1 : IT-BPM revenue during FY2021 & 2022

(Source: Facts & Figures- NASSCOM⁹)

In view of the above, it can be well ascertained as to how important is the ITeS-BPO sector for India to achieve the target of five trillion economy by 2025 and Ten Trillion by 2033-34. Therefore to maintain the growth momentum in this sector, the policy framework governing this sector has to be simplified, more liberalized and devoid of any ambiguity. In this context, the objectives of the present dissertation are:

- i. To study the relevance of the CCSP/HCCSP for the growth of BPO sector and need for clarity on the matter.

⁹ Fact & Figures from <https://nasscom.in/knowledge-center/publications/technology-sector-india-2022-strategic-review>

- ii. To study the implications of allowing Remote Agents to directly connect with the foreign EPABX in reference to security concerns and the availability of call data records in India.
- iii. To study the need of statistical information on OSPs
- iv. To study the status of the data protection and data privacy law in India and its importance for the growth of BPO sector.

3.2 Research Design and Methodology

The Research Design of this study is primarily a mix of Descriptive and Exploratory in nature. The methodology for this study is based on the quantitative approach. The study is centrally based on the secondary literature that has been published by the various stakeholders, as defined in the following para, not necessarily focused on the issues under our research. Some of the previous studies irrespective of qualitative, quantitative methods, descriptive or exploratory or mixed methodology were reviewed. Due to constraints of data availability on the OSPs, the study has been carried out mainly with secondary data and limited data from the primary sources.

3.3 Data Sources

Data from both primary and secondary sources have been collected. The primary data from the limited sources have been collected through a short questionnaire canvassed to Key Informant Interview- face to face or telephonic interviews or through email with regulator i.e. TRAI, Licensor i.e. DoT and Industry associations like NASSCOM, ACTO, OSPAI and few BPO players. Secondary sources like various Consultation papers/ recommendations/ guidelines issued by Telecom Regulatory Authority of India, Department of Telecommunications and the inputs of the Industry associations like National Association of Software and Service

companies, Other Service Providers Association of India etc., websites of Department of Telecommunications, Telecom Regulatory Authority of India, and other authentic web sources have been used.

3.4 Rationale or Justification

With the rapid and enormous changes in technology and development of various networking architectures and solutions for setting up of OSP networks, advancement of user applications and service delivery scenarios, the regulations needs to be updated with the technology to remain relevant on one hand. On the other, the important aspects such as National security and the infringement of the jurisdiction of the existing TSPs also need to be protected. The CCSP / HCCSPs in the decade of 2020 are what were OSPs in the 2000s. They will propel the next wave of growth through automation, reducing overheads of customers. DOT has revised the guidelines for OSPs in 2021. Now in the year 2023, it is the right time to analyze and suggest course correction in this highly competitive sector to retain leadership position globally.

3.5 Research Questions

The research questions for this study are as follows:

1. What is the relevance of recommendations of TRAI regarding CCSP/HCCSP and importance of incorporating these in the guidelines?
2. What are the challenges in allowing remote agents to connect directly with foreign EPABX and the feasible options?
3. Why is the statistical information on OSPs required to be collected?
4. Why is it relevant to have the data protection and data privacy laws for the growth of BPO sector?

3.6 Limitation /Delimitation

The present study has been carried out based on the analysis of TRAI's recommendations on Review of Terms and Conditions for registration of OSPs, the Revised guidelines issued by the DOT and the inputs of the stakeholders on limited areas pertaining to this study. As the New guidelines for OSPs have been issued in November, 2020 and revised guidelines are just over two years old as of now (in March, 2023), more issues may crop up in future due to the rapid changes in technology with regard to the network, new applications and service delivery mechanisms for further study.

CHAPTER 4:

EVOLUTION OF THE OSP POLICY SINCE 2000

4.1 Background of OSPs:

In essence of the DoT's New Telecom Policy, 1999¹⁰, a new category of telecom service called the 'Other Service Providers' (OSPs) was created to bring these services under some kind of regulatory framework. These OSPs provided application services like tele-banking, tele-medicine, tele-education, tele-trading, e-commerce, call center, Network Operation Centers and other IT Enabled Services. The registration of OSPs had started in the year 2000 and these guidelines were amended from time to time for incorporating specific requirements at that point of time. Broadly speaking, the OSP policy was formulated to regulate the ITeS/ BPO industry which had started to grow at a rapid pace during that period.

4.1.1 Overview of BPO Concepts

Business process outsourcing is the process of subcontracting with a third-party service provider to manage parts of the business operations that are not the core function. Initially, consumer goods companies outsourced manufacturing to reduce costs, but today almost every company has incorporated outsourcing into their business model. Functionally, BPO services can be divided into two categories:

¹⁰ NTP 1999 available at <https://dot.gov.in/new-telecom-policy-1999>

Front-office services (Voice):

The business processes which require the BPO staff to interact with clients and consumers directly. For example, marketing and customer support.

Back-office services (Non-Voice):

A business process that deals with business functions within a company. For example, order processing, payment processing, quality assurance and other such administrative functions.

Further, on the basis of vendor location, the BPO industry can also be categorized into three categories:

Offshore - Indicates that the BPO company is located in another country. Example – A company in the EU outsources its work to a BPO company in the Philippines or Vietnam.

Nearshore – Indicates that the BPO company is located in a nearby country. Example – A company in Singapore outsources its work to a BPO company in Malaysia.

Onshore – Indicates that the BPO company is located in the same country.

However, they may be in different regions. For example – A company located in Kolkata can outsource their work to a BPO company located in Gurgaon.

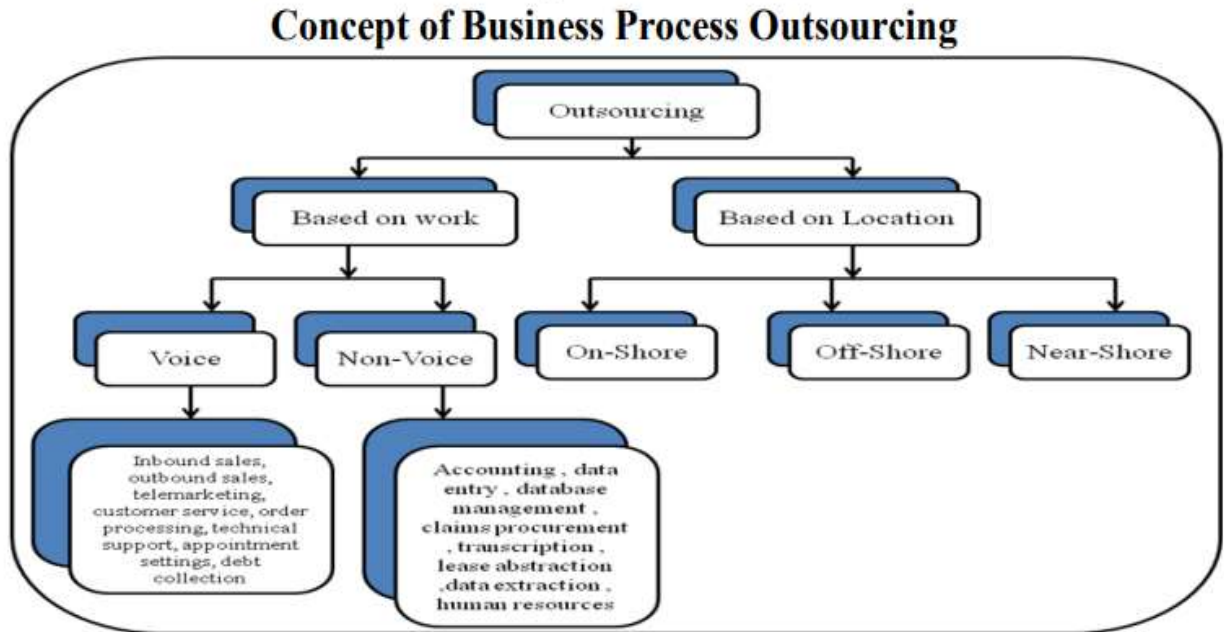


Fig. 4.1: Block diagram showing concept of BPO

(Source: Image sourced from Internet)

4.1.2 Different Types of BPO Services

Broadly, the most common types of BPOs on the basis of Services are as listed below:

i) ITES

Information Technology Enabled Services BPO is one that handles the outsourced processes utilizing the telecommunication technologies and the Internet to provide those services.

Some of the IT services handled by these BPOs include:

- Technical Support
- Service Desk Analyst

- Production Support Analyst

ii) KPO

Knowledge Process Outsourcing (KPO) is the process of outsourcing knowledge intensive activities that provide advanced expertise around a particular business process. The high end expertise jobs that the KPOs handle are:

- Accounting and financial analysis
- Legal processes
- Web Design
- Content Creation

iii) LPO (Legal Process Outsourcing)

LPO services, as the name suggests, refers to the practice of a law firm or corporation obtaining legal support services from an outside law firm or legal support services company. They handle complex tasks such as:

- Drafting patent applications
- Creating legal agreements
- Performing legal research

iv) RPO (Research Process Outsourcing)

RPO services focus on the research and data analysis processes. RPO is commonly used by data-driven businesses such as marketing agencies, investment firms, and pharmaceutical companies.

These service providers work on tasks like:

- Data Analytics
- Investment Research
- Primary and secondary market research

4.1.3 Some of the Common BPO Services

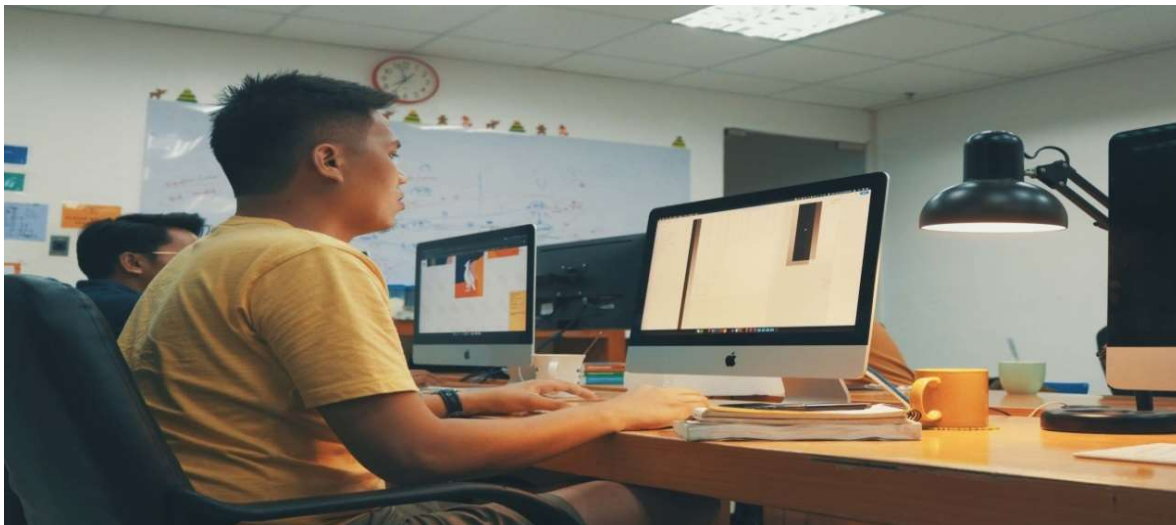


Fig: 4.2: Picture of a BPO centre

Some of the most commonly outsourced BPO services by the various businesses are as furnished below:

i) Data Entry

Despite being a straightforward administrative task, data entry can be time-consuming and tedious. As a result, instead of recruiting a full-time employee to handle this task, the work itself can be outsourced to a third party, and in-office employees can concentrate on other more crucial and pressing organizational tasks.

ii) Customer Support

One of the most popular BPO activities is customer support. As businesses grow, handling thousands of customers becomes increasingly demanding. Once again, instead of hiring and training new customer support executives in-house, it is always easier, faster and more economical to outsource the job to specialized entities. As a result, companies can save on recruitment and training costs while increasing customer satisfaction. Additionally, businesses can provide 24x7 customer support by outsourcing to call centers around the globe.

iii) Marketing

The other activity that is widely outsourced is marketing. Be it Search Engine Optimization, market research, or strategy, there are many third-party vendors to choose from. Getting help from specialized and experienced outsourced vendors can make your marketing materials and landing pages more effective. Since they are experts in their field, they can better analyze the situation and propose winning strategies.

iv) Human Resources

Outsourcing of HR departments has become increasingly popular with the businesses in recent times. These specialized RPOs can streamline the hiring process for companies, from scanning resumes to conducting interviews to short listing candidates, by assisting them with the entire process. And HR BPOs can not only recruit but can also train and help them integrate with the companies processes more quickly.

v) Finance & Accounting

These are another popular BPO service around. Specialized BPOs offer more than just account management; they can add value to your business as well. Besides preparing the budget, they can do audits and provide forecasts for your company. There are certain KPO companies having expertise in providing key financial insights to help businesses grow. These BPO companies offer services like investment management, market research, risk & compliance solutions etc.

4.1.4 Pros and Cons of BPO

The benefits and risks associated with outsourcing of business processes is as discussed below:

Benefits

Some of the key benefits of outsourcing are as furnished below:

i) Focus on Core function

The functions like data entry and payroll etc. are important for organizations but these aren't the core functions of the business. Now, if these tasks are outsourced to third party vendors, the companies can shift their focus to their core business activities. The outsourcing of such type of administrative tasks, for example in a marketing agency will allow it to focus on the marketing strategies for clients more effectively. This will provide the company with a major competitive advantage, as it can now focus on increasing its business.

ii) Cost Savings

This is one of the main reasons why businesses choose BPO services for their non-core functions. In order to control costs, most companies outsource, as hiring in-house employees takes a considerable amount of money for training, equipment, tools, salaries, and of course office space. However, outsourcing a part of the business cuts down on all these costs. As the majority of these BPO vendors are located in developing countries, where the cost of living is lower, the companies get quality talent for far less.

iii) Access to Skilled manpower

Since BPOs are available around the world for hiring and businesses can take advantage of them no matter their geographical location, they get access to the best minds from around the world thanks to telecommunications technologies and networks. So the companies are no longer limited by the location of the skilled manpower resources. Additionally, as the outsourcing is done only for specific functions, they cost far less than employing full-time in-office employee. Further, this outsourced specialized manpower will be completely focused on their tasks – resulting in increased productivity.

Risks

While there are immense benefits of the outsourcing but there are some pitfalls associated with this model too:

i) Data Security Risks

When companies outsource their work to third-party vendors, they rely on these vendors to handle their data. However, since this data is shared beyond the company's boundaries, it becomes exposed to pilferage by both in-house employees of the BPO company and other hackers. Additionally, maintaining security can be challenging when the vendor's data center is located in a different country, as privacy laws may vary between countries. In the event that something goes wrong, taking legal action can be difficult.

ii) Communication Issues

Interacting with in-house employees is straightforward since they speak the local language, and it's easy to have a face-to-face conversation with them quickly. However, offering feedback to third-party employees can be a challenging and time-consuming process. There are several reasons why outsourcing business processes to third parties can impede productivity and cause issues in a company's operations:

- Language barriers
- Time zone differences
- Different levels of feedback within the agency

iii) Monitoring Issues

The other challenge with outsourcing is that it can be difficult to monitor the performance of third-party BPO staff. The BPO service provider may be located thousands of miles away in a different country, making it difficult to determine how busy the agents are, whether projects genuinely took as long as they did, and how much outsourced work is the right amount to be delegated.

4.1.5 BPO Industry in India

The contribution of the BPO sector to India's strong economic growth over the past few years has been enormous, as there was a high demand for outsourcing jobs to India from companies in the western world. The share of IT-BPM exports to major countries is shown in the diagram¹¹ below:

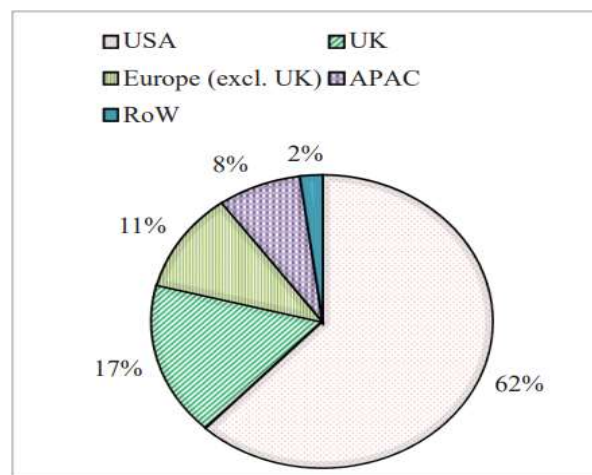


Figure 4.3: Geographic distribution of IT-BPM exports

(Source: Economic Survey 2023, Ministry of Finance, Government of India, New Delhi (2023))

¹¹ Available at <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap10.pdf>

The contribution of BPO to GDP has steadily increased over the past few years and it can be seen clearly that the BPO industry is having an impact on the Indian economy. The BPO sector aims to generate more revenue and intellectual property for the country. Currently, BPOs in India focus on domestic business and offshore business. Over the past few years, India has emerged as a global engine of growth for engineering research and development (ER&D) and innovation, with a strong determination to lead the future growth and innovation for global companies.

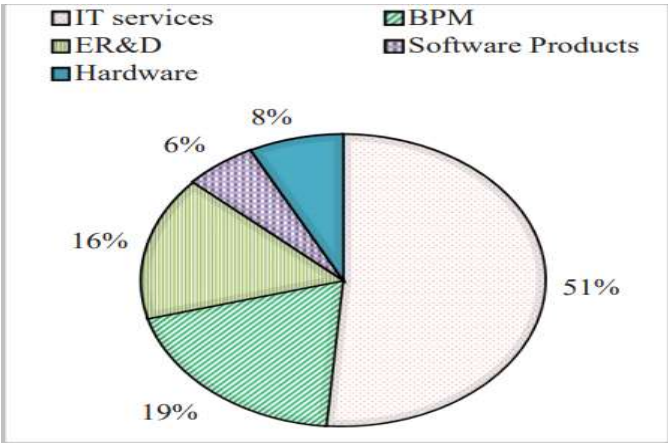


Figure 4.4: Segment-wise break-up of Revenues in FY22

(Source: Economic Survey 2023, Services: Source of Strength¹²)

¹² Available at <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap10.pdf>

Most of India's end user industries have been pushed to adopt digital transformation at a faster pace due to the Covid-19 pandemic. As a result, companies have increased their investments and have witnessed more complex technology convergence use-cases, with a greater emphasis on enterprise-scale data and cloud strategy. Despite the challenges posed by the pandemic, India's IT-BPM industry has remained resilient, mainly due to the increased spending on technology, accelerated adoption of digital transformation, and remote working. And this can be seen from the way IT-BPM industry has responded swiftly to the pandemic by enabling one of the largest IT workforces in the world to work remotely and ensuring business continuity. This was, however, partly made possible by the government's swift regulatory interventions by providing relaxation of the existing regulatory conditions¹³. By leveraging the learning from the first wave, the industry has enhanced its capabilities to become future-ready. Throughout the pandemic, the IT-BPM industry has focused on customer-centricity, domain-specific solutions, a digital-first talent pool, and creating future-ready solutions to meet emerging customer demand. In FY22, the IT-BPM revenues have registered YoY growth of 15.5%, with all sub-sectors showing double-digit revenue growth. The majority share of the IT/BPM sector is constituted by IT services, which account for over 51%. (Source: Economic survey2023, Services: source of strength; IT-BPM sector¹⁴.)

¹³ https://dot.gov.in/sites/default/files/2020_04_15%20WFH%20Relaxations%20OSP.pdf?download=1

¹⁴ Available at <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap10.pdf>

4.1.6 According to the Global Services Location Index (GSLI)¹⁵ which tracks the contours of the offshoring landscape among 60 countries, across four main categories: financial attractiveness, people skills and availability, business environment and a new category of digital environments, India continues to hold the top position. The GSLI assesses the capacity of the countries to provide BPO and IT enabled services on the basis of 47 different indicators. The 2021 GSLI scores further confirm the emergence of selected countries as digital hubs. India, which has held the leadership spot in the overall GSLI, is now slipping in the digital resonance rankings. India is falling short in all aspects of digital resonance, especially in terms of digital skills and digital outcomes. Despite massive technology investments in key sectors such as energy, media and retail, India still faces a severe skills shortage. This deficit must be understood in the context of India's recent remarkable progress. India was one of the first countries to successfully capitalize on the first wave of IT and BPO outsourcing demand and has developed a low-skilled workforce to meet traditional demand steadily. However, as digital transformation continues to change the way people and organizations work, a gap has opened up between the demand for digitally savvy professionals and the talent pool that India has cultivated. Therefore, India needs to look into the shift in demand of the digitally skilled manpower and align the capacity building initiatives to fill this gap and retain the leadership position in the IT-BPM sector globally. (Source: <https://www.kearney.com/home>)

¹⁵ Available at <https://www.kearney.com/digital/article/-/insights/the-2021-kearney-global-services-location-index>

GSLI

- Financial attractiveness
- People skills and availability
- Business environment
- Digital resonance

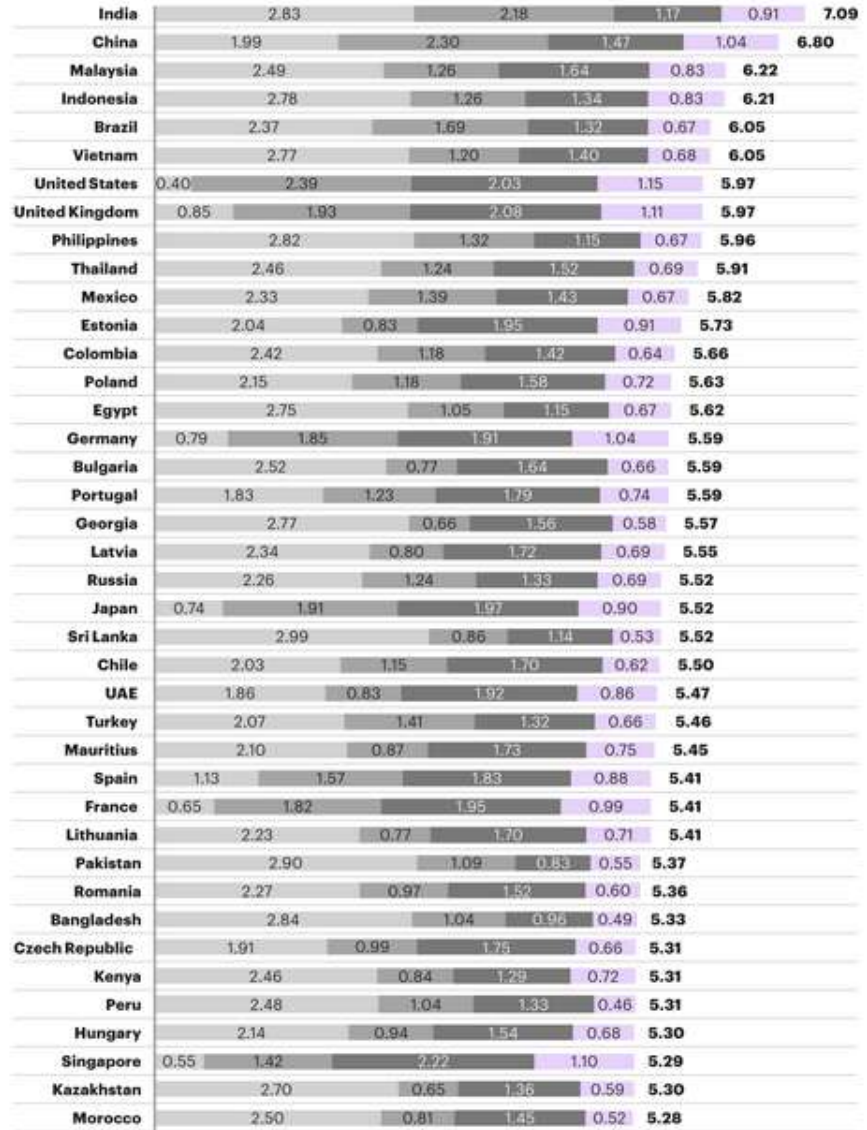


Fig:4.5 GSLI index of top 40 countries shown above

4.2 Evolution of OSP Policy since 2000

4.2.1 Background

Although outsourcing in India started in the 1980s, it was not until the mid-1990s that India emerged as a major destination for outsourcing in the service sector after economic liberalization. Outsourcing to India started in the IT industry initially and during this period, the outsourcing industry demonstrated the resilience by responding to changing market demands by increasing the scale of operations and the ability to handle complexity. In the early 1990s, there was no regulatory framework in this sector having tremendous scope for growth. In this context, the New Telecom Policy, 1999 issued by the Department of Telecommunications (DoT), emphasized to create a new category of telecom service called the ‘Other Service Providers’ (OSPs). “These OSPs provided application services like tele-banking, tele-medicine, tele-education, tele-trading, e-commerce, call center, Network Operation Centers, and other IT Enabled Services”. The Terms and Conditions as issued by the government in February 2000, stipulated that these Application Service Providers could take telecom resources from authorized Telecom Service Providers. However, these entities would not provide switched telephony. No license fee was charged from OSPs but registration for such entities to provide the above specified services was required to be done with the DoT . The registration of OSPs had started in the year 2000, mainly for the purpose of:

a) Collecting statistical information:

As the BPO services were at a nascent stage and it was the first time that such service was recognized and effort was made to regulate the sector. In doing so, the Government needs to

have the statistical data for taking appropriate decisions w.r.t. the policy interventions to help the sector grow and contribute in the overall economy.

b) To check that the OSPs do not infringe upon the jurisdiction of Telecom Service Providers (TSPs).

The objective of the OSP regime was to ensure that OSPs do not encroach on the jurisdiction of authorized entities and that the government does not lose revenue. The problem at that time was that an OSP could violate the jurisdiction of the licensed entity by itself providing connectivity, which would otherwise be the prerogative of the licensed TSP. The further connectivity by these OSPs could have resulted in the expensive international calls routed using the data connection, rather than using traditional Public Switched Telephone Network (PSTN), resulting in loss of revenue for telecommunications operators and the government. Therefore, it was necessary to ensure that the jurisdiction of the TSP is protected and that the OSP does not use the resources of the TSP to provide its own service other than the specified purpose.

c) To offer special dispensation to boost the BPO sector which was at a nascent stage at that time (2000).

The registration of the OSPs were introduced to facilitate the BPO sector, which required large amounts of telecom resources and at that point of time telecom resource was a limited and expensive resource, difficult to obtain. Taking into account the paucity and high bandwidth price during the period, this regulation was essential to allow real users to obtain resources to run legitimate businesses.

4.2.2 Evolution of OSP Policy:

The terms and conditions for registration of Other Service Providers (**OSP**) which were formulated in February, 2000 on the basis of New Telecom Policy-1999, were subsequently revised in year 2005 and again in the year 2008¹⁶. These amendments were necessitated by the changes in technology, development of newer networking architectures, growth of new user applications & service delivery scenarios. The OSP registration policy of 2008 was also updated from time to time to meet the specific requirements arisen at that point of time.

But to meet the challenges thrown by the fast changes in the technology space, the patching work was not sufficient and therefore, to take a holistic approach a Standing Committee was constituted in DoT to review the OSP Policy in view of issues raised by OSP Association of India & few other OSPs. The terms of Reference of this Committee was:

- (i) OSP definition and Entities eligible for registration under this policy.
- (ii) Enhancement of Processing Fee/ Registration Charges.
- (iii) Validity of Registration Period.
- (iv) Submission of Documents and Application Form.
- (v) Bank Guarantee for sharing of infrastructure and validity of registration for sharing the resources.
- (vi) Connectivity of OSP Network for various domestic and International scenarios.
- (vii) Penalty Provisions for non-compliance of OSP terms & conditions.

¹⁶ OSP guidelines dtd.5.8.2008 available at https://dot.gov.in/sites/default/files/2016_11_03%20OSP-CS.pdf?download=1

- (viii) Approval of OSP inspection performa.
- (ix) Security Conditions for safeguard of national interests.
- (x) Revenue generation for DoT in various activities from this business like provision of submission of some percentage of amounts of AGR.
- (xi) Any other suggestion/ inputs from TERM Cells/ CS cell/ TEC/ Stake holders on the review of the OSP Policy.

Due to the various complexities in the regulatory issues, the Committee recommended for seeking the views of TRAI and accordingly, a reference was sent to TRAI on 10.09.2018 soliciting its recommendations on the T & C for registration of OSPs. Thereafter, TRAI issued its recommendations on 21.10.2019¹⁷. After due deliberations in DoT on the TRAI recommendations and consultations with all stakeholders i.e. with representatives of Industry Associations like NASSCOM, OSPAI, ACTO & KPOC, the Government decided to simplify and liberalize the regulatory framework for OSPs in line with its ease of doing business initiative. Accordingly, New Guidelines for OSPs was issued on 05.11.2020¹⁸ which enhanced ease of doing business and liberalized the regulations in such a way that:

- No registration certificate required for OSP centres.
- Special dispensations for OSPs clearly defined.
- Work From Anywhere (WFA) in India allowed.
- NO Bank Guarantee required
- Interconnectivity between OSP centres of different OSP companies allowed.

¹⁷ Available at https://traai.gov.in/sites/default/files/Recommendation_21102019.pdf

¹⁸ Available at https://dot.gov.in/sites/default/files/2020_11_05%20OSP%20CS.pdf?download=1

- EPABX at foreign location in case of international OSP allowed.
- Internet at centralised location to be used by other OSP centres.
- Periodic compliances removed.

While deliberating on the queries received in DoT after issue of New guidelines for OSPs in Nov,2020, it was felt that there is a need for further relaxation in the New Guidelines for OSPs dated 05.11.2020 as some of the clarifications required to be issued were beyond the existing Guidelines. Accordingly, **Revised Guidelines for OSPs dated 23.06.2021**¹⁹ which are more liberal and in line with the moto of “Ease of Doing Business” and aims to give further impetus to the growth of IT & ITeS industry in the country were issued.

The highlights of the revised OSP guidelines include the following:

- Distinction between Domestic and International OSPs removed.
- Location of EPABX can be anywhere in the world.
- OSPs can locate their EPABX at third Party Data Centres in India and can also use EPABX services of Telecom Service Providers.
- Interconnectivity between all types of OSP centres is permitted.
- Remote Agents can connect directly with Centralised EPABX/ EPABX of the OSP/ EPABX of the customer using any technology including Broadband over wireline/ wireless.
- No restriction for data interconnectivity between any OSP centres of same company or group company or any unrelated company.

¹⁹ Available at <https://dot.gov.in/sites/default/files/Revised%20OSP%20Guidelines.pdf?download=1>

4.2.3 Highlights of the revised OSP Guidelines

The following paras are reiterated to understand the extent to which the OSP guidelines have been simplified and liberalized w.r.t. the previous OSP regulations of 2008, paving the way for ease of doing business and the reduction in the compliance burden for the businesses :

4.2.3.1 Terms & conditions for OSP registration-2008²⁰:

Definition : *“Other Service Provider (OSP) means a company providing Application Services and ‘Applications Services’ means providing services like tele-banking, tele-medicine, tele-education, tele-trading, e-commerce, call centre, network operation centre and other IT Enabled Services, by using Telecom Resources provided by Authorised Telecom Service Providers.”*

The Highlights of OSP registration Guidelines prior to reforms:

- i. Required OSP registration – required for both Voice & Data based operations
- ii. Eligibility - only the Companies & LLPs eligible for OSP registration.
- iii. Documentation – Documents, Network diagrams required to be submitted
- iv. Bank Guarantees of Rs. 1 crore required for following activities:
 - a. For Work From Home (WFH) from each OSP centre
 - b. For Sharing of EPABX between International OSP & Domestic OSPs centre
 - c. For use of Distributed architecture of EPABX
- v. Work From Home (WFH) was very restrictive

²⁰ Available at https://dot.gov.in/sites/default/files/2016_11_03%20OSP-CS.pdf?download=1

- a. Prior approval was required;
- b. Agreement had to be signed with DOT
- c. PPVPN (Provider Provisioned VPN) & Static IP was essential
- d. Details of WFH agents had to be provided to DOT in advance
- e. Change of address of WFH agents had to be intimated
- vi. EPABX not allowed in foreign country
- vii. Interconnectivity of I-OSP centres and D-OSP centres not allowed
- viii. No PSTN connectivity permitted to International OSPs at Indian end.
- ix. Interconnection with unrelated companies not permitted
- x. Periodical Audits & compliances required
 - a. *Network diagram required periodically*
 - b. *Network diagram to be submitted in case of any change*
 - c. *Annual reports with financial parameters*

4.2.3.2 Revised Guidelines for OSPs²¹:

Definition: “*Other Service Provider (OSP) is an Indian company, registered under the Indian Companies Act, 2013 or an LLP (Limited Liability Partnership) registered under LLP Act, 2008 or a partnership firm or an organization registered under Shops and Establishment Act*

²¹ Available at <https://dot.gov.in/sites/default/files/Revised%20OSP%20Guidelines.pdf?download=1>

providing voice based Business Process Outsourcing (BPO) services to their customers located world-wide including in India.”

Highlights of changes in revised Guidelines for OSPs:

- i. *Following changes helped in reducing the Compliance burden:*
 - a. No registration required for OSP centres in India and hence no requirement of application & documentation.
 - b. No Bank Guarantees required to be submitted
 - c. No periodical Inspections
 - d. Annual reports/ Periodic compliances removed.
 - e. Focus on Self-regulation by OSPs
- ii. *Following changes helped in ease of Doing Business:*
 - a. Distinction between Domestic and International OSPs removed.
 - b. Work From Anywhere (**WFA**) within India allowed.
 - c. Internet at centralised location for OSPs centres.
 - d. EPABX can be located anywhere in the world.
 - e. Introduced clarity by defining Toll-bypass, Special dispensations and CDR/ UDR/ System
 - f. OSPs can locate their EPABX at third Party Data Centres in India and can also use EPABX services of Telecom Service Providers.

- g. Remote Agents can connect directly with Centralised EPABX/ EPABX of the OSP/ EPABX of the customer
- h. No restriction for data interconnectivity between any OSP centres of the same company or group company or any unrelated company.

CHAPTER 5

ANALYSIS AND FINDINGS

5.1 Survey Questionnaire

The questionnaire was prepared to seek the inputs from various stakeholders regarding the revised guidelines for OSPs issued by the Department of Telecommunications. And this questionnaire was as sent to 30 persons belonging to licensing field, regulation and DoT field units responsible for implementation of the policies and to approximately 50 persons from the Industry including Industry associations and individual companies at the old emails addresses available with the DoT field units. Since, there is no requirement of registration for OSPs after the issue of revised policy, contacting them over phone was difficult. The reply has been received from 42 respondents. A total of four interview sessions have been done to seek the inputs from Industry, DoT & TRAI.

The reply to the survey questionnaire has been received from the Industry associations viz. NASSCOM and ACTO, individual companies viz. Startek, Association of Competitive Telecom Operators (ACTO), Exotel, EXLService.com india Private limited, Phonon Communications Pvt. Ltd., Orange Busienss Services India Network Pvt. Ltd, Tata Communications Limited, Tata Teleservices Limited, Vodafone Idea Limited, Concentrix India, Genpact, Fidelity International, Suma Soft Pvt. Ltd., AAA Cloud Telephony Pvt. Ltd., Consultant firms viz. Khaitan & co., Monetic Corp Consulants and officials from the DoT and TRAI. The interviews were conducted in different modes like face to face, over phone and through email. The data gathered from the interviews is based on the four research questions.

5.2 Views of the Respondents

It is interesting to find that the inputs received from the respondents is varied and the same trend is observed across the industry as well as the respondents belonging to government side. Some of the specific inputs given by the various stake holders through the interviews and the survey questionnaire regarding the research questions are listed below:

5.2.1 In response to the first research question, “ What is the relevance and importance of recommendations of TRAI regarding CCSP/HCCSP and the importance of incorporating these in the guidelines?”, the reply of the some of the respondents is summarized in the following paras:

NASSCOM

TRAI in its 2019 recommendations on OSPs mentioned that HCCPs need to register with the DoT to offer platform as a service. However, if they are involved in the reselling of telecom resource to OSPs, then they must obtain UL-VNO license. The recommendation of TRAI is useful as HCCSPs are not involved in reselling of telecom resource. Therefore, the only requirement for them should be registration with the DoT.

However, the regulatory landscape has for long deemed the services provided by HCCSPs as audiotex services. Because of this regulatory uncertainty, some HCCSPs entities have obtained audiotex license in the past. TRAI in 2016 recommended audiotex license be made part of the Unified License (UL) and be subjected to obligation of license fee i.e., 8% of AGR. This recommendation was accepted by DoT and audiotex was added as a chapter in UL in 2021. First, this has imposed disproportionate financial burden on HCCPs which is still in a

nascent stage. Second, this regulatory development is potentially not aligned with the objective of the National Digital Communications Policy 2018 (NDCP).

There is immense potential for new technology-based offerings by HCCSPs that leverage natural language processing, automatic speech recognition, speech to text using the latest AI platforms. For a country of the scale of India with varied vernacular dialects and diverse business demands and solutions, investments to enable such offerings, can catalyse optimal exploitation of voice technology and bridge the digital divide for non-English speaking populations across the country.

HCCPs function in a manner like the OSPs. Therefore, like the OSPs who enjoy a relaxed regulatory regime, a similar light-touch regime may be considered. The extant financial obligation on audiotex licensees to pay license fee as 8% of their AGR should be discontinued with immediate effect. Adopting this approach would align India with the international practices where service providers like HCCP is neither subject to any regulatory obligation or at the most adhere to a light touch regulatory framework.

ACTO

In the emerging technological scenario in IT/ ITeS /BPM sector, the OSPs cannot be competitive without the use of the CCSP/ HCCSP services, hence they are very relevant in this Industry. Agree with the TRAI recommendations on CCSP /HCCSP as many of the OSPs are using the CCSP/HCCSP's infrastructure for their OSP operations and eventually most of the OSPs will be using CCSP/ HCCSPs for infrastructure requirements to leverage the cost benefits and be competitive in the global outsourcing market. And those CCSP/ HCCSPs, who are also reselling telecom services, they need to take unified license with appropriate authorizations or

the VNO license for providing the licensed services, as the rules should be universally applicable for providing similar telecom services in the country.

TRAI

The CCSP/ HCCSPs are important part of the OSP ecosystem as they provide the basic infrastructure to start an OSP operations. The HCCSPs if specified in the guidelines will explicitly allow the access on Internet, which otherwise is not specified in the existing OSP guidelines. In this regard, TRAI has given detailed recommendations on CCSP/ HCCSPs.

DoT

The recommendations of TRAI on the review of terms and conditions of registration for OSPs was welcome step and the guidelines issued by DoT has been hailed by the industry as a landmark reform. Regarding CCSP/ HCCSPs, yes it is not explicitly mentioned in the revised guidelines and to bring more clarity on the issue, clarifications in this regard may be issued, after consultations with all stakeholders, if required.

EXLService.com India Private limited

DoT should look at the possible solution for contact center operation on cloud based solution. India BPO industry may be preferred destination for international clients but for contact center operation we are still lacking may be due to restriction on cloud based solutions. Secondly, the clarity in the OSP guidelines is missing.

Phonon communications pvt. Ltd.

CCSP / HCCSP are in the decade of 2020, what OSPs were in the 2000s. They will fuel the next wave of growth through automation, reducing overheads of customers. CCSP / HCCSP still have to adhere to various laws such as TCCCP 2018. Speech Recognition, Voice Bots, Distributed IVRs and Application Services for Call Centers at a Click with Work from Anywhere capability are the new age call centers and there are now specialised companies that offer these. These companies should be treated at par with OSPs. Providing access to international CCSP / HCCSP will be a security hazard since inter country laws are time consuming. This will also provide an unfair advantage to international CCSP / HCCSP since India has long maintained a conservative stance on the same. Access to international CCSP / HCCSP will put Indian CCSP / HCCSP at an unfair disadvantage.

Fidelity International

There are grey areas w.r.t. CCSP/ HCCSPs, which are not yet answered. Limiting this option to VNO license holders has made the situation even complex. The MNCs / GCCs are not able to leverage centralized solutions implemented by their customer / group companies. For e.g. companies can still route their voice traffic via MPLS to connect with foreign hosted CCSP. Organizations are moving to cloud and tech agnostic regulations will help in getting more business in BPO sector.

5.2.2 In response to the second research question, “What are the challenges in allowing remote agents to connect directly with foreign EPABX and what are the feasible options?”, the reply of the some of the respondents is summarized as follows:

NASSCOM

There are no challenges in allowing remote agents to connect directly with foreign EPABX. In fact, this has enabled the industry to fully leverage technology to implement work from anywhere in a seamless manner and provide greater flexibility to utilize their infrastructure and design their service delivery model to better serve the global market. This has enhanced India’s attractiveness in terms of ease of doing business. Also, the DOT guidelines provide for adequate safeguards.

In the past, data centres growth was largely driven by processing or computing power. Today, most data centres demand is driven by the need to not only store the data but also to access and use it. Moreover, data centres are not limited to mere EPABX facility. The increasing amount of data and digital intelligent devices of all kinds are expected to drive the data centre industry. As per NASSCOM estimates, the Indian data centre market is expected to reach \$5bn per annum by 2025.

ACTO

Allowing the remote agents to connect with foreign EPABX directly is a good step which will help OSPs in improving efficiency. The call data records, i.e. the CDRs, can be taken from the foreign countries through the OSPs. Even if the CDRs are available in India, the action if any

required, has to be taken up by the foreign country and if that country is not friendly to India how will the availability of such records help. So, it is a welcome reform by DoT.

TRAI

It is the unavailability of the CDR in the country that is main concern in case of remote agents connecting directly with the EPABX abroad . This can be more of a security challenge which the LEAs may have to see. The alternate option can be to allow the remote agents to connect to the EPABX abroad through OSP centre in India. This way the requisite CDRs can be available in the OSP centres.

DoT

As per clause 2 of chapter 5-security conditions, “For EPABX installed at locations different than the OSP Centre, the remote access of all CDRs, System log, configurations of EPABX and routing tables shall be made available on demand from Authority/ Law Enforcing Agencies from at least one of the OSP centres”. However, in case the remote agents connect directly to foreign EPABX, there is a possibility of OSPs not being able to produce the call data records (CDRs) when sought by the law enforcement agencies (LEAs). Further, this step may lead to increased use of foreign EPABX for OSP operations in India which may have negative impact on the setting up of the datacenters in India. The feasible alternate option could be to allow agents to connect to the foreign EPABX through the OSP centres in India after due consultation with the stakeholders.

Startek

Only international OSP need to be allowed to use foreign EPABX. However all domestic market should be continued with in India, regulation should allow use of internet telephony for OSP and Monitoring should be in the hands of ISP. Use of cloud telephone and internet telephony should be allowed to increase the BPO business which is lost to Philippines and other country with relaxed policy.

Orange Business Services India Network Pvt. Ltd

Since the removal of the distinction between international and domestic OSPs, it can now be interpreted that domestic voice BPO / Call Centre operation can also have their EPABX in foreign location, where the current regulation does not allow to route the domestic traffic or calls outside country to use the infrastructure hosted outside county. Though, the copy of CDR/system log need is maintained at any of the OSP centers in India. DoT should clarify for routing domestic calls or its signalling to use Foreign EPABX. This should also be clarified that to connect with centralized EPABX / OSP EPABX / Customer EPABX through internet / broadband by work from home agent / remote agent is allowed as the voice call over Internet is restricted in India.

5.2.3 In response to the third research question, “Why is the statistical information required to be collected?”, the reply of the some of the respondents is summarized as follows:

NASSCOM

Under the Companies Act, a company must register with the Registrar of Companies for incorporation. The requirement for an OSP to register with DoT has been removed to avoid duplicity and ensure ease of doing business. This reform is aimed at attracting more MNCs towards India as a favourable destination, which would lead to more FDIs.

ACTO

Yes, the statistical information is required to be collected but it should be collected at a single point like at the corporate affairs ministry by making suitable changes to collect information of various sectors like OSPs. The OSPs should not be made to submit the compliance with multiple agencies rather such information about the company should be collected and maintained at a single point of contact and such a system will meet the requirement of compliance and shall reduce the burden of multiple compliances for the businesses.

TRAI

The collection of statistical data about the OSPs operating in the country should be mandatorily done and this data should always be available with the concerned Ministries/ departments. As the government is giving them certain special dispensations which is otherwise not available to the general public or enterprises in other sectors, there has to be some kind of data where the government can identify the beneficiaries of the special incentives. Further, there is no other means for the govt. to find the impact of the policy initiatives or intervention or policy formulation / updation. However, this can be done with minimal inconvenience to the Industry and TRAI has recommended for it in its recommendation dated 21.10.2019.

DoT

The requirement of registration for the OSPs was stopped as per the revised guidelines for OSPs to reduce the compliance requirements for the fast growing industry. But, now it is felt that some kind of statistical information about the OSPs operating in the country should be available with the licensor. And it could be through automatic generation of registration or an acknowledgement generated by the system after the receipt of applications in the online portal designated for collecting such data. So, some simple form of registration of OSPs can be restarted by DOT which could be in the form of self-registration. Further, there should be some system of annual compliance just for the sake of knowing the active OSP during the year. There must be some registration with minimum regulations, so that Indian does not become hub of fake call centre.

Vodafone Idea

Online submission like intimation to DoT/TERM Cell for OSP registration is necessary.

5.2.4 In response to the forth research question, “Why is it imperative to have the data protection and data privacy laws for the growth of BPO sector?”, the reply of the some of the respondents is summarized below:

NASSCOM

The growth of the Business Process Management (BPM) sector heavily depends on the data protection measures taken by companies. However, enforcing data protection measures individually by companies is not sufficient and the overall data protection regime of a country plays a crucial role. For example, at the time of identifying countries for setting up BPO services, multinational companies may evaluate the level of protection accorded to personal data being shared and processed in a country. This assessment is necessary prior to expanding businesses in a country due to factors like maintaining consumer trust, maintaining a competitive edge over others, etc. For instance, EU allows data transfers based on adequacy requirements which state that the country to which data is being transferred to must have a similar law on data protection.

For the BPM sector to grow and include areas higher in the value chain like research and development, the data protection regime can appeal foreign companies looking to set up BPM services in India.

ACTO

In view of the present scenario where there is cross border flow of data which includes the personal data, there is always a sense of insecurity in the minds of the companies while outsourcing the works to such countries where there is lack of any legal frameworks to deal with any such violations. So, the enactment of the personal data protection law in the country would definitely help the OSP business in India.

TRAI

As the call center business involves flow of lot of personal data, the outsourcing countries having strict data protection laws may be reluctant to outsource the BPO business in

the countries where there is no such laws prevalent to tackle issues of violation of the personal data. In this context, the absence of a strong PDP law will make the country less attractive for the outsourcing countries.

DoT

The requirement of data protection law in the country is very important in the OSP industry as it involves lot of cross border flow of information including personal data. And to satisfy the requirement of security of their data and to win the trust of the companies outsourcing work to India, we need to have a strict personal data protection law. The enactment of data protection law in India will help in developing confidence among the Companies based out of Europe and USA to outsource their BPO activities to India. Otherwise, these countries are concerned about outsourcing their BPO activities to India.

Phonon Communication

The DP act is important as phone numbers are misused. This will also reduce unsolicited commercial communication.

Tata Communications Limited

Data protection law will have a far reaching effect on the BPO industry. It has clearly defined guidelines around data security, regulations, cross border transfer, privacy, data breach and various other important aspects that will have a long term impact in the outsourcing industry. With the increased focus on data security and privacy, BPO service providers will need to restructure their data compliance plan ahead of time. This will not only ensure that the soon to be updated rules are implemented in a timely manner but also improve customer service efficiency and increase the firm's reputation.

Khaitan & Company

The DPDP Bill in its current form will help Instill trust in India and help in growth of BPO industry

Genpact

We should be flexible and put the required controls to prevent the data theft/ leak.

Fidelity International

A strong and effective data protection law will help in creating confidence within international organisations to see India as a safe place for storage and processing of personal data. The concept of Data Embassies should help in attracting more international organisations to choose India as safe place for protection of their personal data. That strong law would open more business avenues for Indian BPO companies to provide services to the industries heavily reliant on processing of personal data. However, at the same time the requirements of data access and compulsory storage in India will have to be relaxed. The issues related to use of cloud hosted contact centre solution and Toll Bypass still needs to be addressed to make them Tech agnostic.

Concentrix

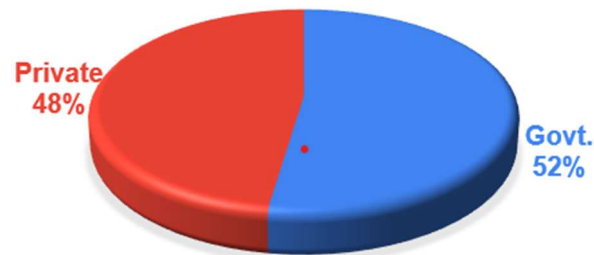
Data protection law will build the confidence among the citizen and the organization to store sensitive information securely.

The enactment of data protection laws in India can definitely have a positive impact on the growth of the Business Process Outsourcing (BPO) industry. The BPO industry in India is heavily reliant on the processing of personal data of individuals from various countries, and the implementation of data protection laws can help to provide a more secure and regulated environment for the handling of such data. The introduction of data protection laws can help to instill confidence in international clients who may have concerns about the handling of their personal data by Indian BPO companies. This, in turn, can lead to increased demand for BPO services and help to fuel growth in the industry. Moreover, data protection laws can help to create a level playing field for all BPO companies operating in India. Companies that comply with the laws and invest in data protection measures may be better placed to compete in the market and win business from clients who prioritize data security. Additionally, the implementation of data protection laws can help to improve the overall quality of BPO services provided by Indian companies. Companies that comply with the laws will need to adhere to strict standards for data protection, which can result in higher-quality services and improved customer satisfaction. In summary, the enactment of data protection laws in India can be a positive step for the growth of the BPO industry. The laws can help to create a more secure and regulated environment for the handling of personal data, which can increase client confidence, create a level playing field, and improve the quality of BPO services provided.

5.3 Data interpretation of Survey response

To understand the various aspects of the impact of the revised guidelines for OSPs issued on 23rd June 20221 and to get their inputs on the issue, a survey questionnaire was sent to the stakeholders from the ITeS/ BPM industry as well as from the Government side i.e the officials from the Licensor, the Regulator and the DoT field units. A total of 42 responses were received of which 22 respondents belonged to the Government sector while 20 respondents are from the private sector.

Fig. 5.1(a): Bifurcation of respondents belonging to Govt. sector & Pvt. sector

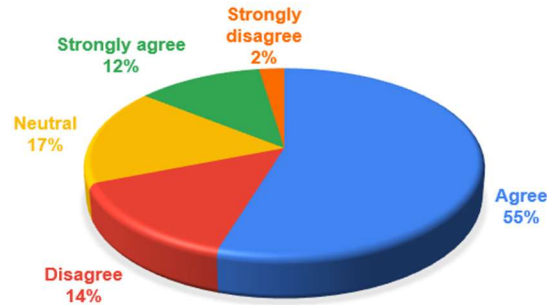


The analyses of the inputs received through the google form survey to the questions asked are detailed below:

5.3.1 “Do you agree that the recommendations given by TRAI dated 21.10.2019 on CCSP/HCCSP are satisfactory and addresses the issue of CCSP/HCCSP adequately”.

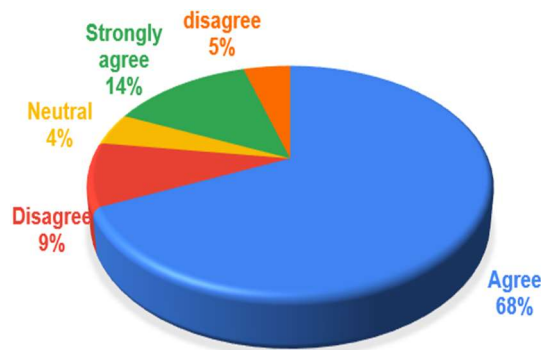
Out of the total 42 respondents 67% agree/ strongly agree that the recommendations of TRAI on CCSP/ HCCSPs are satisfactory and address the issue of CCSP/HCCSP adequately, while 16% do not agree/ strongly disagree and 17% are neutral.

Fig. 5.1(b): Analysis of responses about adequacy of TRAI recommendations on CCSP/ HCCSPs



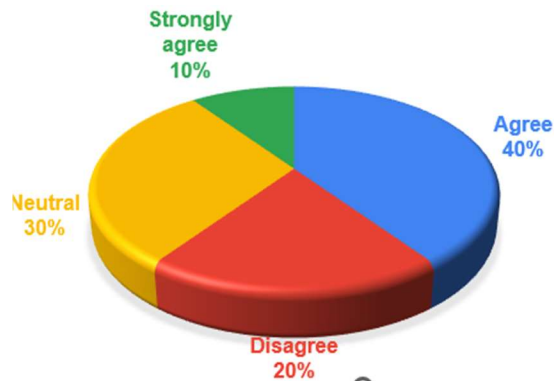
If we analyze responses received from respondents from the government side and private sector side separately, it is observed that 82% respondents from the government sector agree / strongly agree that the recommendations of TRAI on CCSP/ HCCSP are satisfactory and addresses the issue of CCSP/HCCSP adequately as can be seen in the diagram below:

Fig. 5.1(c): Analysis of responses from 22 respondents belonging to govt. sector



However, on observing responses from the private sector, it is found that only 50% agree / strongly agree and large chunk of 30% are neutral in their opinion. This can be seen in the chart shown below:

Fig. 5.1(d): Analysis of responses from 20 respondents belonging to Pvt. sector



5.3.2 *“Your opinion on whether the revised guidelines for OSPs dated 23.06.2021 issued by DoT address the issues related to Contact Centre Service Providers/ Hosted Contact Centre Service Providers (CCSP/HCCSP) adequately”.*

50% of the respondents agree and equal % don't agree that the revised guidelines for OSPs issued by DoT address the issues related to Contact Centre Service Providers/ Hosted Contact Centre Service Providers (CCSP/HCCSP) adequately.

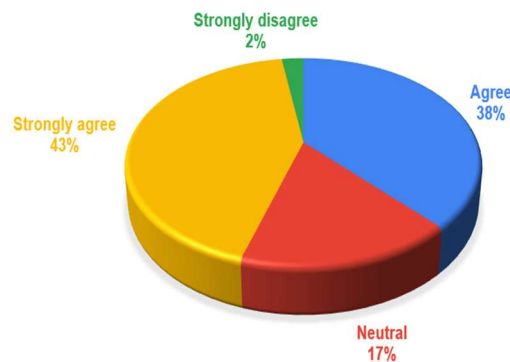
Fig. 5.1(e): Analysis of responses about revised guidelines of DoT addressing CCSP/ HCCSP issues



5.3.3 To a question “Do you agree that issuing some clarifications regarding CCSP/ HCCSP will bring better clarity on the issue, facilitating growth of OSPs in India.”

81% of the respondents feel that some clarity on the issue of CCSP/ HCCSP is required and 17% are neutral in their views.

Fig. 5.1(f): Analysis of responses about the need for clarity in revised guidelines for CCSP/ HCCSP issues



The above observation indicates that there is some ambiguity among all stake holders on the issue of CCSP/ HCCSPs and some clarifications need to be issued by DoT.

5.3.4 To a query “In your opinion whether allowing remote agents(RAs) to connect directly with foreign EPABX (as allowed in the revised guidelines for OSPs) will improve the operational efficiency of OSPs.”

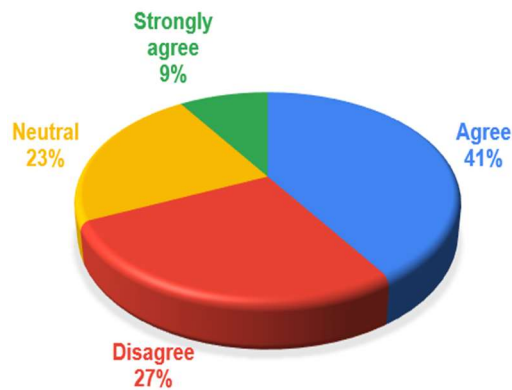
Little more than half i.e. 57% of the respondents are of the opinion that allowing remote agents to connect directly with foreign EPABX will improve the operational efficiency of OSPs. While 22% disagree/ strongly disagree and 21% are neutral.

Fig. 5.1(g): Analysis of responses on impact of allowing RAs connect directly to foreign EPABX



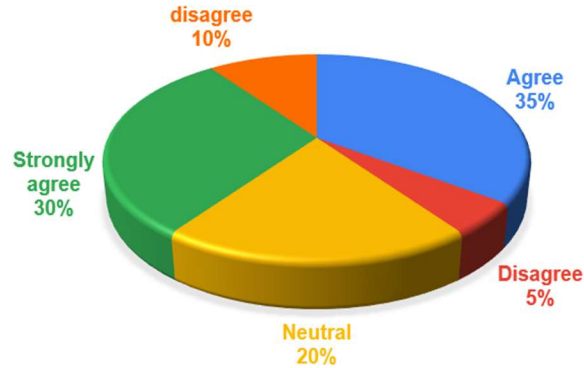
On this issue, while analyzing the responses of the respondents belonging to government and private sector separately, it is observed that 50% respondents from the government sector agree / strongly agree and 27% disagree, while 23% are neutral as shown in the diagram below:

Fig. 5.1(h): Analysis of responses from respondents from govt. side



While, the diagram below showing the responses of respondents from the private sector indicates that 65% from private sector agree / strongly agree & 15% disagree and large chunk of 20% are neutral.

Fig. 5.1(i): Analysis of responses from respondents from private sector

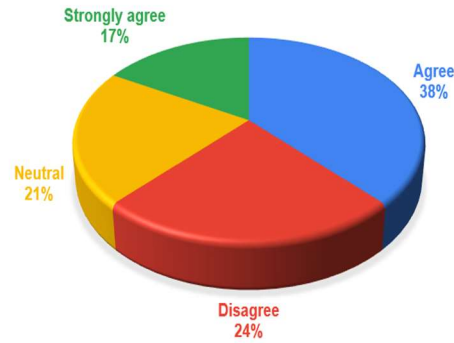


It is observed from the above responses that there is some ambiguity on the matter as the opinion is divided and large chunk of more than 20% is neutral from the government side as well as from the industry.

5.3.5 “Will allowing the remote agents (RAs) to connect directly with foreign EPABX discourage setting up of the data centres in India in the long term.”

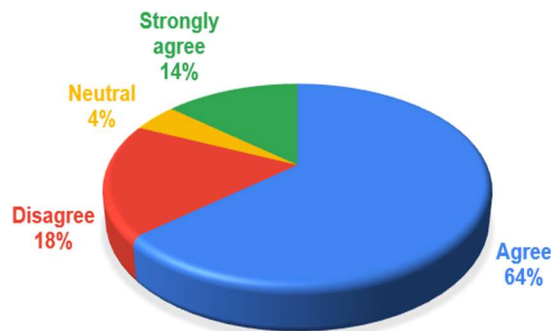
It is observed that 55% agree/ strongly agree with the view that allowing the remote agents to connect directly with foreign EPABX discourage setting up of the data centres in India in the long term and 24% disagree while 21% are neutral.

Fig. 5.1(j): Analysis of responses on impact of allowing RAs connect directly to foreign EPABX on data centers in India



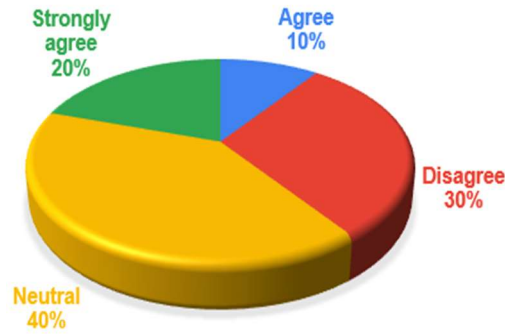
On analysis of the responses from government and private sector separately, it is observed that 78% respondents from the government sector agree / strongly agree, while 18% disagree with the view that allowing the remote agents to connect directly with foreign EPABX will discourage setting up of the data centers in India in the long term.

Fig. 5.1(k): Analysis of responses from respondents belonging to Govt. sector



On the analysis of the responses from the private sector, it is observed that 30% respondents agree / strongly agree, while equal number of respondents disagree with the view that allowing the remote agents to connect directly with foreign EPABX will discourage setting up of the data centers in India in the long term. A large section from the private sector, 40% of the respondents are neutral indicating that they are not sure of its impact at present.

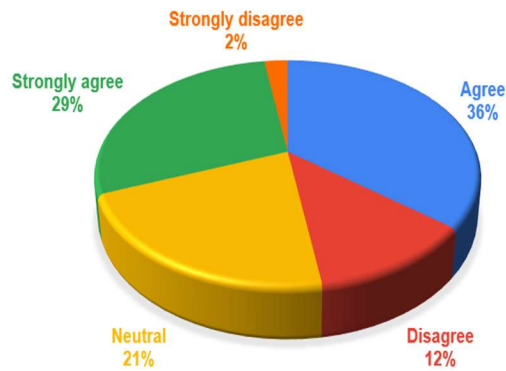
Fig. 5.1(l): Analysis of responses from respondents belonging to private sector



5.3.6 “Will allowing the remote agents (RAs) to connect directly with foreign EPABX result in the storage of call data records in foreign country and not in India raising security issues.”

It can be seen that 64.3% respondents agree/ strongly agree with the view that allowing the remote agents to connect directly with foreign EPABX would result in the storage of call data records in foreign country and not in India raising security issues and mere 14.3% disagree / strongly disagree. While a sizable proportion of 21.4% have neutral views.

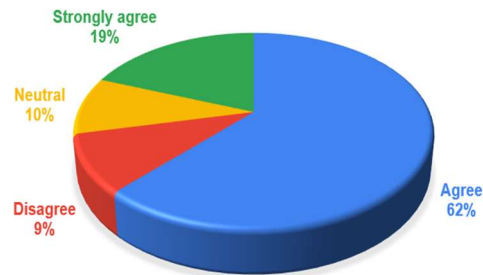
Fig. 5.1(m): Analysis of responses about CDR availability in India on allowing RAs to connect directly to foreign EPABX



5.3.7 “To secure the call data records (CDR) of the customers within India, can the remote agents be made to connect with foreign EPABX through OSP centres in India as an viable option.”

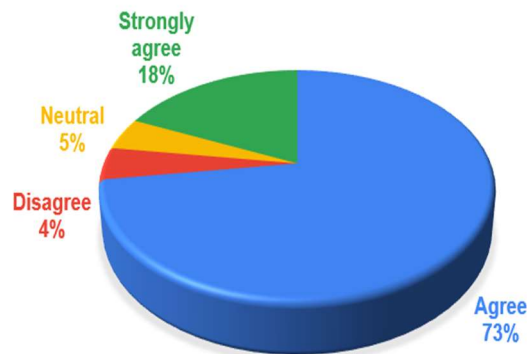
From the responses received in the survey, it is observed that 81% respondents agree/strongly agree with the view that the remote agents can be made to connect with foreign EPABX through OSP centers in India as an viable option for securing the call data records (CDR) of the customers within India. A mere 9% disagree and 10% have neutral views.

Fig. 5.1(n): Analysis of responses on allowing RAs connect to foreign EPABX through OSP centers in India.



On analyzing the responses received from the respondents belonging to government and private sector separately, it is found that 91% respondents from the government sector agree / strongly agree , while only 4 % disagree as shown in the diagram below:

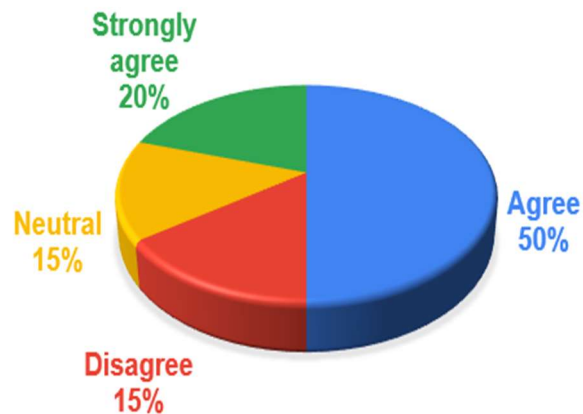
Fig. 5.1(o): Analysis of responses from respondents belonging to Govt. sector



On analyzing the responses of the respondents belonging to the private sector, is observed that 70% respondents agree / strongly agree with the view that the remote agents can be made

to connect with foreign EPABX through OSP centers in India as an viable option for securing the call data records (CDR) of the customers within India, while 15% disagree. A large section in private sector, 15% of the respondents are neutral indicating that they are not sure of its impact at present.

Fig. 5.1(p): Analysis of responses from respondents belonging to private sector

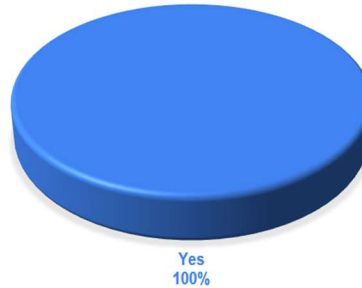


Analyzing the survey data on this issue, it can well be said that the remote agents should be allowed to connect to the foreign EPABX but it should be through OSP centres in India.

5.3.8 “Do you think it is important for the government to have statistical data about the various sectors of economy in general.”

From the responses received in the survey, it is observed that 100% respondents agree with the view that it is important for the government to have statistical data about the various sectors of economy in general.

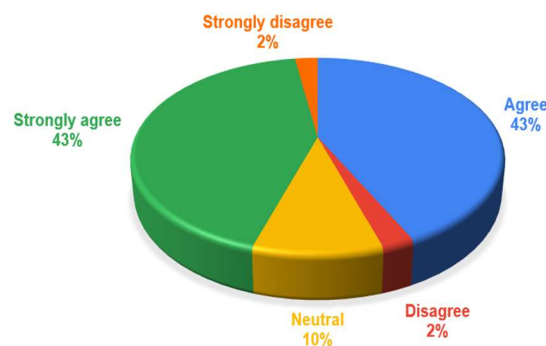
Fig. 5.1(q): Analysis of responses on the need for collection of statistical data



5.3.9 “Do you agree with the necessity of having statistical information about the OSPs with the government (DoT) for assessing the policy impact, intervention/ formulation and updation in future.”

The analysis of the responses received in the survey points that 86% respondents agree/ strongly agree with the view that there is dire necessity of having statistical information about the OSPs with the government (DoT) for assessing the policy impact, intervention/ formulation and updation in future. Only 4% disagree / strongly disagree with the view while 10 % have neutral views.

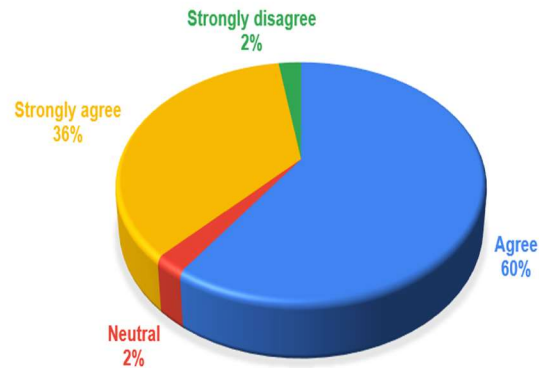
Fig. 5.1(r): Analysis of responses on the need for statistical data of OSPs for policy formulation/ updation



5.3.10 “Will the enactment of data protection laws in India will help India to be competitive and retain the leadership position in the global BPO industry.”

The analysis of the responses received vehemently agrees with the view that the enactment of data protection laws will help India to be competitive and retain the leadership position in the global BPO industry with a clear 96% votes. A mere 2 % disagree and equal percentage has neutral views.

Fig. 5.1(s): Analysis of responses on the need for PDP Act



5.4 Analysis of the data

On analyzing the inputs received through various means like interviews, survey questionnaire and the secondary data collected, the following are the inferences with respect to the research questions:

- i) On analysis of the survey results w.r.t. the research question about the relevance and importance of recommendations of TRAI regarding CCSP/HCCSP and importance of

incorporating these in the guidelines, it is found that two-third respondents agree or strongly agree that the recommendations of TRAI on CCSP/ HCCSP are satisfactory and addresses the issue of CCSP/HCCSP adequately, while out of the remaining one-third, half of the respondents disagree and other half are neutral. But, on analysis of the responses of respondents belonging to government side and private sector separately, a sharp variance i.e. 82% respondents from the government sector agree / strongly agree to it while only 50% from private sector agree. The main reason for disagreement (of private sector/ industry respondents) is the recommendation that CCSPs/ HCCSPs who provide the platform as service and are also involved in reselling the telecom resources to OSPs, are required to obtain UL-VNO license with suitable Authorization. The industry expects that the CCSP/ HCCSPs should be kept outside the licensing framework similar to the OSP policy. NASSCOM has categorically said that HCCSPs are not involved in reselling of telecom resource, so the only requirement for them should be registration with the DoT. As their functioning is similar to OSPs, they should be subjected to similar kind of relaxed regulatory regime. While, ACTO, another Industry association has commented that those CCSP/ HCCSPs, who are also reselling telecom services, they should take unified license with appropriate authorizations or the VNO license for providing the licensed services, as the rules should be universally applicable for providing similar telecom services in the country. OSPAI in its reply²² to TRAI consultation paper has suggested that there should not be any undue restriction on the scope of services under CCSP/HCCSP, especially since they do not infringe on the scope of TSP services. OSPAI also commented that the CCSP/ HCCSPs should register under OSP registration and also comply terms and conditions under OSP Guidelines.

²² Available at <http://ospai.in/TRAI-comments.pdf>

As mentioned in para 5.2.1 above, one of the respondents has said that, for contact center operation, India is still lacking may be due to restriction on cloud based solutions and secondly the clarity in the OSP guidelines is missing. Another, respondent from Industry has warned that providing access to international CCSP / HCCSP will be a security hazard since inter country laws are time consuming. Further, it also says that it will also provide an unfair advantage to international CCSP / HCCSP and put Indian CCSP / HCCSP at an unfair disadvantage. Further, in response to another question, 81% of the respondents feel that some clarity on the issue of CCSP/ HCCSP is required and 16.7% are neutral. This clearly indicates that there is some ambiguity about their working, its access on internet, scope of services under the CCSP/ HCCSPs and DoT must take pre-emptive measures to address the issue in near future in consultation with all the stakeholders for the sake of clarity on the regulatory front.

ii) Regarding another research question concerning the challenges in allowing remote agents to connect directly with foreign EPABX and the feasible options available, the responses received indicate that around 50% respondents are of the opinion that allowing remote agents to connect directly with foreign EPABX will improve the operational efficiency of OSPs. And surprisingly, large portion of around 20% are neutral and this trend is more or less same among respondents belonging to government sector or private sector. To another query, whether allowing the remote agents to connect directly with foreign EPABX would discourage setting up of the data centers in India in the long term, it is observed that overall 54% agree/ strongly agree with the view and 23.8% disagree while 21.4% are neutral. However, if we analyze the data of respondents from the private sector, 30% agree and equal nos. disagree, while majority 40% are neutral. Further, in response to a question, “*whether to secure the call data records (CDR) of the*

customers within India, can the remote agents be made to connect with foreign EPABX through OSP centers in India as an viable option”, it is observed that 80.9% respondents agree/ strongly agree with the above view, while a mere 9.5% disagree. However, on analysis of the responses of respondents belonging to government & private sector separately, it is found that 91% respondents from the government sector agree / strongly agree, while 70% respondents from private sector agree / strongly agree to this view. As per the inputs provided by NASSCOM in key informant interview, they do not perceive any challenges in allowing remote agents to connect directly with foreign EPABX. NASSCOM has reaffirmed that this has enabled the industry to fully leverage technology to implement work from anywhere in a seamless manner and provide greater flexibility to utilize their infrastructure and design their service delivery model to better serve the global market. ACTO, another industry association, has also hailed this as a welcome step which will help OSPs in improving efficiency. While another Industry respondent, as mentioned in para 4.2.2, has commented that only international OSP need to be allowed to use foreign EPABX. Use of cloud telephone and internet telephony should be allowed to increase the BPO business which is lost to Philippines and other countries with relaxed policy. M/s Orange Business Services India Network Pvt. Ltd, remarked that DoT should clarify for routing domestic calls or its signalling to use Foreign EPABX. Further, in view of the fact that the voice calls over Internet is restricted in India, it should also be clarified whether connecting with centralized EPABX / OSP EPABX / Customer EPABX through internet / broadband by a work from home agent / remote agent is allowed.

On analysis of the responses received from the respondents through survey questionnaire and interview session, as mentioned above, it is clear that there exist some ambiguity in policy domain w.r.t. accessing the foreign EPABX and its implications among the industry. For the sake

of prospering ITeS/ BPM industry in the country, some clarity as required needs to be issued by DoT on the scope of services, issue of allowing Foreign HCCSPs for domestic OSPs and remote agents connecting directly with foreign EPABX after further consultations with the stakeholders.

iii) In response to research question, “Why is the statistical information required to be collected”, it is observed that all respondents in the survey agree with the view that it is important for the government to have statistical data about the various sectors of economy in general. In response to the question about the necessity of having statistical information about the OSPs with the government (DoT) for assessing the policy impact, intervention/ formulation and updation in future, 86% respondents agree/ strongly agree with the view that collection of statistical information about the OSPs by the government (DoT) for assessing the policy impact, intervention/ formulation and updation in future is of importance. Only 4% disagree / strongly disagree with the view while 10 % have neutral views. As per NASSCOM, all companies register under the Companies Act with the Registrar of Companies for incorporation and that should be enough and welcome the DoT’s move of removal of the requirement of registration of OSPs to avoid duplicity and ensure ease of doing business. ACTO, an industry association is also of the same view that the statistical information is required to be collected but it should be collected at a single point like with the corporate affairs ministry during company’s registration. As per TRAI views, the government is giving them certain special dispensations which is otherwise not available to the general public or enterprises in other sectors, there has to be some kind of data where the government can identify the beneficiaries of the special incentives. Further, there is no other means for the govt. to find the impact of the policy initiatives or intervention or policy formulation / updation. However, this can be done with minimal

inconvenience to the Industry. Further, OSPAI in its reply²³ to TRAI consultation paper on registration of OSP, has suggested that the registration of OSPs should be continued but validity period should be unlimited and it should be a one time registration with self regulatory intimations with bona fide intentions.

Analyzing the responses as mentioned above, majority of the respondents agree that collection of the information by the government about the OSPs is necessary. However, the industry insists that it should be done at a single point of contact like at the master data of companies. The DoT needs to deliberate further to decide this issue after due course of time as the removal of the requirement for registration of OSPs may cause more harm than good in the long run. It's a fact that the registered companies are considered more trustworthy by the client's abroad as firms prefer hiring or work with registered corporations rather than unregistered ones. Thus, registration of the OSP entities has the potential to open up new vistas and opportunities that would otherwise be unavailable.

iv) In response to research question, "Why is it imperative to have the data protection and data privacy laws for the growth of BPO sector", an overwhelming majority of 96 % respondents are of the view that the enactment of data protection laws will help India to be competitive and retain the leadership position in the global BPO industry. The industry association, NASSCOM, pointed out that the growth of the Business Process Management (BPM) sector heavily depends on the data protection measures taken by companies. However, enforcing data protection measures individually by companies is not sufficient and the overall data protection regime of a

²³ Available at <http://ospai.in/TRAI-comments.pdf>

country plays a crucial role. It further emphasized that for the BPM sector to grow and include areas higher in the value chain like research and development, the data protection regime can appeal foreign companies looking to set up BPM services in India. ACTO, also reiterated that in present scenario where there is cross border flow of data which includes the personal data, there is always a sense of insecurity in the minds of the companies while outsourcing the works to such countries where there is lack of any legal frameworks to deal with any such violations. So, the enactment of the personal data protection law in the country would definitely help the OSP business in India. M/s TCL has commented that the data protection law will have a far reaching effect on the BPO industry. It has clearly defined guidelines around data security, regulations, cross border transfer, privacy, data breach and various other important aspects that will have a long term impact in the outsourcing industry. M/s Fidelity International has remarked that a strong and effective data protection law will help in creating confidence within international organizations to see India as a safe place for storage and processing of personal data. M/s Phonon Communication has commented that the DP act is important as phone numbers are misused. This will also reduce unsolicited commercial communication.

On analysis of the responses from the respondent as mentioned above, there are no two views on the necessity of enactment of the data protection law in the country. It is therefore suggested that the government should expedite the passing of the data protection Act at an early date. The Digital Personal Data Protection (DPDP) Bill, 2022 has already been released in November, 2022 by MeitY for public comments. The early passage of this Act will definitely make the Indian ITeS/ BPM industry more trustworthy and companies abroad will be confident while sharing data and dealing with the Indian OSPs.

5.5 Outcome of the Analysis

5.5.1 Background of Liberalized Guidelines

As already discussed in chapter-4 above, the terms and conditions for registration of Other Service Providers (OSP) were initially formulated in February, 2000 on the basis of New Telecom Policy-1999²⁴, through a decision of Telecom Commission and were subsequently revised in year 2005 and 2008²⁵. In the year 2015, issue was deliberated in detail at DoT after the receipt of representations from OSP Association of India and others, raising issues pertaining to OSP regulations. The issue being very complex and inter-related with other licenses being issued by DoT, as suggested by above mentioned committee, a reference was sent to TRAI soliciting recommendations on the T & C for registration of OSPs in the year 2018. The TRAI released its recommendations on 21.10.19²⁶ pushing for a soft regulatory regime for OSPs. On in depth analysis and deliberations on TRAI recommendations on “Review of Terms & Conditions for registration of OSPs” at DoT and the consultations with the Industry Associations which was attended by representatives from NASSCOM, OSPAI, ACTO & KPOC, the government issued the New Guidelines for OSPs on 05.11.2020²⁷ and again updated with a more liberal “Revised Guidelines for OSPs on 23.06.2021²⁸. The issues covered in the present study and the results that have been obtained in the research are deliberated in the following paras:

²⁴ Policy document available at <https://dot.gov.in/new-telecom-policy-1999>

²⁵ Revised T&C-OSPs dated 05.08.2008 available at https://dot.gov.in/sites/default/files/2016_11_03%20OSP-CS.pdf?download=1

²⁶ TRAI recommendations,2019 available at https://traigov.in/sites/default/files/Recommendation_21102019.pdf

²⁷ New guidelines for OSP at https://dot.gov.in/sites/default/files/2020_11_05%20OSP%20CS.pdf?download=1

²⁸ Rev. guidelines for OSPs at <https://dot.gov.in/sites/default/files/Revised%20OSP%20Guidelines.pdf?download=1>

5.5.2 Policy Gaps in the Revised OSP Guidelines w.r.t. Research Questions

i) With respect to the relevance and importance of recommendations of TRAI regarding CCSP/HCCSP and importance of incorporating these in the guidelines, the TRAI is of the view that to encourage the provision of sharable infrastructure and use of latest cloud based technologies, they are very relevant and futuristic. The recommendations include, inter alia, says “the CCSPs/ HCCSPs who provide only the platform as service including a combination of the components of EPABX, IVR, call handling/administration, call recording, contact centre data analytics, customer relationship management etc. for contact centres, should be required to get registered with DoT. These CCSPs/ HCCSPs should be Indian Company, having their data centre(s) in India for providing the contact centre platform to OSPs. For the purpose of registration of CCSP/ HCCSP, DoT should create a category similar to OSP registration and complete the registration activity online on the existing web portal. The recommendations also talk about those CCSPs/ HCCSPs who provide the platform as service as mentioned above and are also involved in reselling the telecom resources to OSPs, are required to obtain UL-VNO license, as applicable, from DoT. Further, it says that any Licensed TSP/ Unified Licensee having suitable Authorization should be allowed to function as CCSP/ HCCSP.”

The revised guidelines for OSPs dated 23.06.2021, do not explicitly mention about the working of CCSP/ HCCSPs, though it is implicit in clause 3.1 of chapter 3. But, then the guidelines do not differentiate between the CCSPs/ HCCSPs who provide only the platform as service and the one's who provide the platform as service and are also involved in reselling the telecom resources to OSPs.

ii) On the question regarding the challenges in allowing remote agents to connect directly with foreign EPABX and what are the feasible options, the TRAI recommendations²⁹ mentions about allowing EPABX at foreign location in case of international OSP subject to the condition that OSP provides remote access of the EPABX and authenticated copy of CDR, System logs and message details as and when required. Further, in reply to DoT's back reference on the subject, TRAI³⁰ agrees that specific technical provisions for addressing the security and monitoring concerns related to OSPs may be finalized by DoT in consultation with the TEC and agrees with the views of DoT that OSP shall maintain a copy of CDR, System logs and message details etc. and the data shall be stored in its centre in India.

However, the revised guidelines for OSPs vide clause 3, chapter 4, specifically mentions that "remote agent of an OSP centre may connect directly with the centralised EPABX/ EPABX of the OSP/ EPABX of the customer" and since the guidelines allow for use foreign EPABX, remote agents of OSPs can connect directly to EPABX abroad.

iii) With respect to question "Why is the statistical information required to be collected?", the TRAI's view was that registration under OSP category may be continued. The OSPs providing voice-based services need to be registered so that necessary information is collected, and concerns could be addressed. As far as the data/ internet based OSPs are concerned, prima facie the concerns related to bypass of PSTN (NLD/ILD) are not there. Hence, registration for

²⁹ Available at https://traigov.in/sites/default/files/Recommendation_21102019.pdf

³⁰ TRAI's reply dated 28.09.2020 at https://traigov.in/sites/default/files/Recommendation_28092020.pdf

such OSP may be exempted. However, to check any possible non-compliance at any stage, intimation requirement could be prescribed.

However, clause 1 of chapter 2 of the revised guidelines for OSPs mentions that the distinction between international OSPs and domestic OSPs has been removed and no registration will be required for OSP centers in India.

iv) Regarding the last research question about “Why is it imperative to have the data protection and data privacy laws for the growth of BPO sector?”, the TRAI recommendations as well as the revised guidelines for OSPs does not specifically mention about the data protection and data privacy laws. However, it is important for a country to have legal provisions for handling the cases of violations to be attractive destination in the global outsourcing market.

CHAPTER 6

RECOMMENDATIONS AND CONCLUSIONS

6.1 Conclusions

The primary purpose of this study was to understand the various changes that have been implemented in the revised guidelines for OSPs and further put forth the suggestions that would help the IT-BPM sector in the country to grow to its true potential without hindrances in the regulatory framework. But at the same time, it is crucial to ensure that the security aspects are guarded in national interest and there is no infringement of the scope of the licenses of the TSPs. The government had issued the new guidelines for Other Service Providers in November, 2020 and revised guidelines for OSPs in June, 2021, further liberalizing the policy for OSPs. The revised policy for OSPs is forward looking, which has positively impacted the ITeS/ BPM sector and has re-energized the whole industry with some of the landmark policy initiatives. The revised policy has removed many overheads which were hindering the growth potential of this sunrise sector. After the new policy initiatives, this sector has become competitive and lucrative again to the overseas investors/ companies, which were otherwise looking at newer pastures especially the south-east Asian countries. Broadly, the data received through the questionnaire and the information gathered through the key informant interviews indicates that the Industry is satisfied with the new policy initiative taken by the government by issuing revised guidelines for OSPs in June, 2021. The revised guidelines have not only eased regulations by removing requirement of registration, bank guarantee and periodic inspections but also made the policy futuristic, favoring OSPs and making it a highly business-friendly regime for them. Since the businesses won't require previous approval from the government to begin operations, these

guidelines would further encourage the industries in this sector to establish operations anywhere in India more freely. The revised guidelines aim to substantially improve India's ease of doing business and it will undoubtedly contribute to India moving up from its current position of 63rd in 2022 out of 190 nations³¹ in the ease of doing business. Additionally, the Revised Guidelines allow connectivity between OSP centers owned by the same firm, a group company, or any unaffiliated company for OSP operations. The work from anywhere has been allowed without any burden of compliance obligations. The ITeS/ BPM sector would receive a major boost from the adoption of a remote working and access to hybrid working. These initiatives of the revised policy will open up more talent and job opportunities in this sector and will help propel Indian IT-BPM to the next level of growth and innovation. The revised regulations also allow the EPABX of the OSP to be situated anywhere in the world. While the new regulations offer a favorable environment for the nation's young talent to develop their abilities in this industry, they also give enterprises more flexibility in how they manage all of their resources.

However, there are certain issues that have been brought out after analyzing the TRAI recommendations, reply of the stakeholders to TRAI consultation paper on OSPs and the in depth consultations conducted through interviews and survey questionnaire with the stakeholders as has been discussed in chapter 5 above. In view of the analysis of the study, the following conclusions may be drawn from the findings of the primary data collected and the study of the various reports, guidelines and recommendations published by DoT, TRAI and various other stakeholders to address the issues:

³¹ Economic times news at <https://economictimes.indiatimes.com/news/economy/policy/ease-of-doing-business-govt-working-on-to-reduce-compliance-issues-says-official/articleshow/92705974.cms?from=mdr>

i) On the issue of relevance and importance of recommendations of TRAI regarding CCSP/HCCSP and importance of incorporating these in the guidelines, it is found that the industry desires that the CCSP/ HCCSPs should be kept outside the licensing framework unlike what TRAI has recommended. The stakeholders from the Industry are satisfied with the revised guidelines for the OSPs on this issue but they want that some clarifications must be issued to clear some ambiguity about their working, its access on internet, scope of services under the CCSP/ HCCSPs. Therefore, it is required that the DoT must take immediate measures to clear the ambiguity in the guidelines regarding CCSP/HCCSPs in near future in consultation with all the stakeholders for the sake of clarity on the regulatory front.

ii) On the issue concerning the challenges in allowing remote agents to connect directly with foreign EPABX and the feasible options available, it is true that allowing remote agents to connect directly with foreign EPABX has enabled the industry to fully leverage technology to implement work from anywhere in a seamless manner and provide greater flexibility to utilize their infrastructure and design their service delivery models but it equally important that the security aspect needs to be guarded in national interest and secondly it has to be ensured that there is no violation of other laws of the land including the Indian Telegraph Act. After analyzing the various inputs, it is felt that the issue needs further deliberations as it is an security as well as jurisdiction issue. So, it can be concluded that DoT should revisit this issue through consultations directly with the stakeholders or can seek the recommendations of the TRAI on the scope of services, issue of allowing Foreign HCCSPs for domestic OSPs and remote agents connecting directly with foreign EPABX.

iii) About the requirement of collection of statistical information by the department, it is observed that all stakeholders agree with the view that it is important for the government to have statistical data about the various sectors of economy in general. However, the industry is of the view that as all companies register under the Companies Act with the Registrar of Companies for incorporation and that should be enough. But for the sake of maintaining data about the sector by the concerned department / ministry, it is required that the registration of the OSPs should be started but it should be in the form of online intimation to the department as per the format of application as decided by the department. DoT should deliberate further to assess that the removal of the requirement for registration of OSPs should not cause more harm than good in the long run. It's a fact that the registered companies are considered more trustworthy by the client's abroad as firms prefer hiring or work with registered corporations rather than unregistered ones. Thus, registration of the OSP entities has the potential to open up new vistas and opportunities that would otherwise be unavailable.

iv) On the issue of the data protection and data privacy laws for the growth of BPO sector", an overwhelming majority of the stakeholders are of the view that the enactment of data protection laws will help India to be competitive and retain the leadership position in the global BPO industry. Therefore, the conclusion on this issue is the government should expedite the passing of the data protection Act at an early date. The early passage of this Act will definitely make the Indian ITes/ BPM industry more trustworthy and companies abroad will be confident while sharing data and dealing with the Indian OSPs.

6.2 Recommendations

The main recommendations emerging from the study are as mentioned in the following paras:

- i) On the analysis of the data gathered during this study, it is observed that there are many gaps in the issued guidelines and the recommendations of TRAI and also the perception of the stakeholders as is evident from the variance in the responses in the survey and interviews. Therefore, the government should consider to again deliberate the issues raised in this study or the issues can be discussed with the stakeholders and action as appropriate may be initiated to clear any ambiguity in the policy framework in this rapidly growing sector.
- ii) With the aim of staying in sync with the rapid technology changes in the IT-BPM sector, the government must device a mechanism to take the industry feedback on a regular basis through some joint working group with the industry representatives and then do the requisite policy updations.
- iii) The government should undertake regular monitoring of the sector to find the violation of the various government regulations including the issues related to national security and infringement of the jurisdiction of other telecom licensees. This could put brakes on the rising number of frauds by the BPOs in foreign countries and also the growing fake call centres business.
- iv) To understand the implications of the recommendations of this research, further studies in future may be conducted on the following issues for course correction of the policy to strengthen the ITeS/ BPM sector which is emerging as a major pillar of the Indian economy:

- i) Repercussions of policy to allow CCSP/ HCCSPs operate without registration/license
- ii) Effects of the allowing remote agents connecting directly to foreign EPABX
- iii) Fallout on the ITeS/ BPM sector due to re-introduction of registration, if introduced
- iv) Role of PDP Act in enabling growth of ITeS/ BPM sector in India
- v) Review of the whole guidelines to assess requirement of policy changes due to the emerging technologies

6.3 Concluding Remarks:

As the ITeS/ BPM industry operates on very thin margins in the cut throat competition in the global markets, a small otherwise innocuous looking policy decision may jeopardise the survival of the whole sector and destroy the edge Indian industry has gained in all these years since the late nineties. The government needs to be very sensitive to their demands and frequently engage all stakeholders on policy matters in line with the ever changing technology and changing dynamics of the international trends.

References and Bibliography

1. Bangladesh Telecommunication Regulatory Commission (2013), 'Instructions for Issuance of Registration Certificate for the Operation of BPO/Call Center (International and Domestic)' accessed through given URL on 11.02.2023 http://old.btrc.gov.bd/sites/default/files/Instructions%20for%20Issuance%20of%20Registration%20Certificate%20for%20the%20Operation%20of%20BPO_Call%20Center.pdf
2. DoT (1999), "National Telecom Policy 99" accessed through <https://dot.gov.in/new-telecom-policy-1999> accessed on 11.09.2022
3. DoT (2008), "OSP Terms and Conditions issued vide No.18- 2/2008-CS-I" Dated: 5th August, 2008, accessed through given URL on 10.09.22- https://dot.gov.in/sites/default/files/2016_11_03%20OSP-CS.pdf?download=1
4. DoT (2018), "National Digital Communication Policy 2018" accessed through <https://dot.gov.in/sites/default/files/Final%20NDCP-2018.pdf?download=1> on dated 10.09.2022
5. DoT (2020), "New Guidelines for Other Service Providers (OSPs)" dated 05.11.2020 issued by the Department of Telecommunications accessed through the given URL https://dot.gov.in/sites/default/files/2020_11_05%20OSP%20CS.pdf?download=1 on 09.09.2022.
6. DoT (2021), "Revised Guidelines for Other Service Providers (OSPs)" dated 23.06.2021, issued by the Department of Telecommunications accessed through URL given below <https://dot.gov.in/sites/default/files/Revised%20OSP%20Guidelines.pdf?download=1> on 10.09.2022
7. Hossain, Moazzem & Kathuria, Rajat. (2004), "Telecommunications reform and the emerging 'new' economy: the case of India." World Review of Science, Technology and Sustainable Development. 1(2) DOI: 10.1504/WRSTSD.2004.005514. Author profiles for this publication at: <https://www.researchgate.net/publication/29456673>
8. <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap10.pdf> accessed chapter:10 on IT-BPM sector on 05.03.2023
9. <https://www.investindia.gov.in/sector/it-bpm> accessed on 02.03.2023 regarding data on IT-BPM industry

10. https://nasscom.in/sites/default/files/media_pdf/India-set-for-the-rising-techade-as-industry-revenues-soars-past-dollar-200-billion.pdf accessed on 02.03.2023
11. <https://www.kearney.com/digital/article/-/insights/the-2021-kearney-global-services-location-index> accessed on 28.02.2023 regarding report on global networks of digital hubs.
12. https://traigov.in/sites/default/files/Recommendation_28092020.pdf accessed on 28.02.2023 for TRAI reply to DoT's back reference dated 28.09.2020
13. https://dot.gov.in/sites/default/files/2020_04_15%20WFH%20Relaxations%20OSP.pdf?download=1 accessed on 28.02.2023 for WFH relaxation order dated 15.04.2020
14. Kshetri, Nir (2017). "Cybersecurity in India: Regulations, governance, institutional capacity and market mechanisms", Asian Research Policy, 8(1), 64-76. Made available courtesy of Asian Research Policy and Nir Kshetri: http://www.arpjournal.org/usr/browse/view_issues_detail.do?seq=146
15. Kurien, Jacob (2010), "Business process outsourcing (BPO) in India: Success and challenges" Vol-1, Year-1, 15 Jan-2010, Dr. Jacob Kurien Doctor of Philosophy in Economics, Visiting Associate Professor of Economics, Rockhurst University. USA www.shodh.net.
16. Meenakshi Rajeev and B P Vani (2008), "Problems and Prospects of Business Process Outsourcing Industry: A Case Study of India". Institute for Social and Economic Change 1 June 2008 Online at <https://mpra.ub.uni-muenchen.de/9834/> MPRA Paper No. 9834, posted 06 Aug 2008 23:44 UTC. PP 11.
17. National Association of Software and Service Companies (2019), 'NASSCOM response to TRAI Consultation Paper on Review of Terms and Conditions for Registration of Other Service Providers (OSPs) dated 29.03.2019 accessed on 17.02.2023 through the given URL: https://traigov.in/sites/default/files/NASSCOM_21052019.pdf
18. Nipul Patel, Purdue University North Central, npatel@pnc.edu & Susan E. Conners, Ph.D., Purdue University Calumet, conners@calumet.purdue.edu.(2008) https://doi.org/10.48009/2_iis_2008_14-20

19. Other Service Providers Association of India (2019), 'OSP AI response to TRAI Consultation Paper on "Review of Terms & Conditions for registration of Other Service Providers (OSPs)" dated 29.03.2019, p.2-4,14,18 accessed through given URL on 17.02.23 <http://ospai.in/TRAI-comments.pdf>
20. Sharma, Dhiraj & Saxena, Sharad & Aanand, Shubhra (2005), 'BPO: The Strategic Alternative for India' South Asia Economic Journal, 6:1 (2005) Sage Publications New Delhi DOI: 10.1177/139156140500600107.
21. Singla, Manika (2012), "Liberalization of Services: Regulatory Challenges for India" International Journal of Management and Social Sciences Research (IJMSSR) ISSN: 2319-4421 Volume 1, No. 3, December 2012 i-Xplore International Research Journal Consortium www.irjcjournals.org 55. PP 56-57.
22. TRAI (2019) "Consultation Paper on Review of Terms and Conditions for registration of Other Service Providers (OSPs)" 29th March, 2019, New Delhi, accessed through given URL on 11.9.22 https://traigov.in/sites/default/files/CP_OSP_29032019.pdf
23. TRAI (2019), "TRAI Recommendations on Review of Terms and Conditions for registration of Other Service Providers (OSPs)" 21st October, 2019, accessed through https://traigov.in/sites/default/files/Recommendation_21102019.pdf on 11.09.2022
