National Telecommunication and Information Administration (NTIA): The Promoter of Digital Humanities and Sociology—*A Case Study*

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Abstract— National Telecommunication and Information Administration (NTIA) is a prominentnodal agencyin the United States which is under the Department of Commerce which is responsible for the technological innovation and promotion of digital innovation for economic development in the US and other countries.It is associated with many other internet and information infrastructure and networks of related associations which include the ISOC, RIR, ICANN, IETF, IGF and also other non-profit making internet and technology related organization such as IEEE, ACM. This plays an executive role principally responsible and dedicated to the telecommunication and other information related policy matters. This paper aims to overviewthe aims, objectives and function of the National Telecommunication and Information Administration (NTIA) with a paradigm shift in the telecommunication and information technology policy towards economic growth with an analysis ofthe past and present activities. This paper also highlights the structure and activities which are aimed at realizing digital innovation and economic growth.

Keywords— National Telecommunication and Information Administration, NTIA, Telecommunication Policies, Development, Information Policies, IT, Knowledge Management, Internet Governance, Information Infrastructure, United States

I. INTRODUCTION

The National Telecommunication and Information Administration (NTIA) has been established in 1978 in Washington D.C. to oversee the country's (USA) telecommunications and information policies and governance. It is under the Department of Commerce, United States. NTIA principally functions under the president's principle advisor on the telecommunication policies pertaining the economic advancement and growth [01], [26]. The NTIA programs and its policy are aimed at increasing and advancement of the broadband internet access and adaptation in the entire America. It is mainly governed by the policy analysis and development, internet affairs, telecommunication science, Telecommunication and Information Applications (TIA), Spectrum Management [02], [26], Oversee and managing broadband of the US.

II. OBJECTIVE

The main objectives of this paper are as follows—

- To study the role of NTIAin promotion of digital innovation and economic development
- To find out core challenges and opportunities of the NTIA.

- To explore the peer associations, foundations and institutions related to NTIA.
- To study the potential internet activities and advanced information infrastructure in the US.

III. NATIONAL TELECOMMUNICATION AND INFORMATION ADMINISTRATION (NTIA): FOUNDATION

NTIA was established in 1978 with headquarter in the Washington DC under United States Department of Commerce (*Current logo is depicted in Fig: 1*). Currently,Lawrence E. Strickling is the current Administrator of the National Telecommunication and Information Administration (NTIA), who is also the Assistant Secretary of Commerce [03], [27] (see Figure 1).

Fig: 1-The official logo of NTIA

The main aims for the establishments of the NTIA include:

- Promotion of the Digital innovation and economic development.
- Creating and Managing Internet Policy [04], [05], [26].
- Managing and creating the cyber security policy.
- Building healthy and smart information systems powered by the internet and latest information technology.
- Handling and advising the domain name systems and public safety.
- Working to ensure the maximum use of telecommunication and information technology by all the Americans particularly internet services.

The NTIA is working with other related and allied organizations such as [06], [07], [26]:

- Internet Corporation for Assigned Names and Numbers.
- Regional Internet Registries.
- Internet Society (with Internet Engineering Task Force, Internet Architecture Broad, Internet Engineering Steering Group).
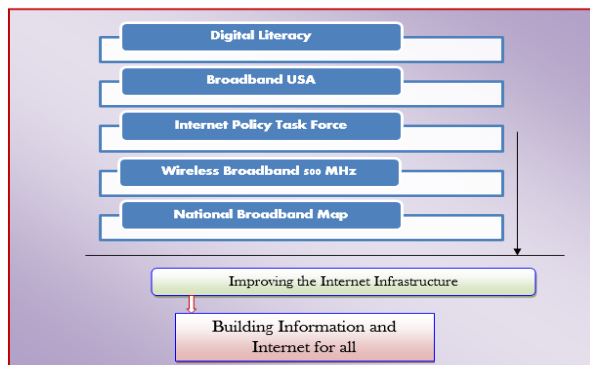- Internet Governance Forum (see Figure 2).

Fig: 2-The basic role of ITIA for promoting Information and Internet Infrastructure.

IV. NATIONAL TELECOMMUNICATION AND INFORMATION ADMINISTRATION (NTIA): AIM AND ACTIVITIES

The NITA was established with the agenda related to Objectives of the NTIA:

The main objectives of the NITA are to frame the information technology policy, internet and web related policy, advising on telecommunications and overall information policy and expanding the broadband internet access and also universal adaptation in the U.S. Further, enabling the growth and innovation towards creating the digital economy is also one of the major important role of the NTIA [06], [07], [27]*Refer Fig: 1 to learn more about the activities of the NTIA*. The NTIA is dedicated to the policy making and SWOT mapping of the following activities and areas, which are as follows:

- Spectrum Management.
- Broadband (policy/managerial issues).
- Internet and similar technology related policy (creation and management).
- Final approval over changes to the DNS root zone.
- Providing the grants and funds for the area of internet, telecommunications, and complete computing and social informatics policies.

Moreover, the core aim and objective of the NTIA are as under:

Helping and providing the telecommunication policies and creating awareness among Americans about new technologiesand removing the technological disparities among the rich and poor and creating a reliable and healthy information infrastructure policy making [08], [11].

- Providing, enabling and ensuring information infrastructure which include affordable phone and cable TV systems. Moreover, providing the hardware and similar systems for improving and offering the public TV and radio services and so on.
- Advocating the competition and also modernization (with liberalization) of the telecommunications policies around the world [10], [26].
- Participation and negotiation with the open market for the US companies with the government to government, international governments etc.
- Dealing, modernizing and policy implementing the spectrum for several organizations and institutions which include normal defense, public safety and depending upon the business needs.
- Promoting the efficient and healthy use of radio and television spectrum and also improving and dealing the new emerging telecommunication technologies and policies and so on [09], [27].
- Building and performing the long-term research and innovation related activities for longer frequency spectrum and helping the federal, state and local government for the future IT Management, internet systems, information infrastructure building and future spectrum requirement [12], [14].

Thus, NTIA is responsible for the expanding and use of the spectrum by all the users and ensuring the internet and similar system for overall economic growth of the US economy (*See Fig: 3 to know more on NTIA in details*).
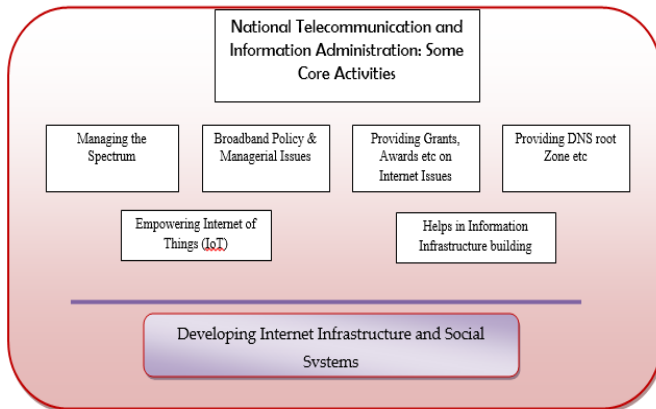
Fig: 3-The core activities of NTIA: Towards healthy Information Society and Knowledge Economy.

V.   NTIA: STRUCTURE AND DIVISION

The NTIAconsists of various branches or divisions and each one is responsible for their respective activities [13], [15], [26]. However, all of them are interconnected and associated with each other due to the nature of similar works. The main divisions and brief activities are as under:

1.   Policy Analysis and Development:

The Office of the Policy Analysis and Development is responsible for the management and execution of the research and analysis of policy. Finally, preparations, modification of the policies are most important and valuable which includes internet, TV cable system, and all information infrastructures [14], [17], [26].

International Affairs:
The Office of the International Affairs is dedicated to the development and implementation of the policies of IT and communication systems of the US based companies around the world with their improvement and higher and healthy standardization [16], [18], [27].

Institute for Telecommunication Science:
The Institute of the Telecommunication Science is a research institute and laboratory of the NTIA and responsible for the promotion of the Research and Development in the telecom, satellite, spectrum and other affairs. This also deals with the current telecommunication challenges and so on [19], [20], [26].

Spectrum Management:
The Office of the Spectrum Management and the function of the federal commission is more or less the same. It mainly deals with the subjects of issuing policy, assigning policy, plans, preparing the international conference and managing spectrum database and so on.

Telecommunication and Information Applications:

This Office is mainly dedicated to the digital television, broadband technology programs, public safety, interoperable communications grant permission etc. Importantly the NTIA is also responsible for the developing and competitive grant program which also assists the public broadcasting stations, state and local governments and organizations and so on [14], [21], [23].

VI.   FUTURE POTENTIALS OF NTIA:

Among the main and core activities of NTIA, few important are highlighted below:

- *Global Free Flow of Information:* The NTIA is dedicated to the examining and implementing the user policy for internet and information delivery by the internet and other means. Thus innovation, economic development is the major task [22], [24], [27].
- *Cyber Security related Affairs:* Managing and information assurance are the important activities in this segment and the task force is responsible for the comprehensive review and managing and providing the solution in this regard.
- *Digital Literacy and Drive*: In USA also, the total population are not at all internet literate and on an average internet user rate is 88.22%. The digital literacy is improving day by day [28].
- *Internet Policy Task Force:* The internet policy task force is responsible for the providing the solutions, suggestion for better, improved, free and easy internet to the common national.
- *Broadband USA:* Broadband USA is a policy and initiative taken by the NTIA where group modern broadband is vital and important.
- *National Broadband Map:* National Broadband Map is an important for creating the map of the broadband as the major task and it is still growing.
- *Internet of Things:* Internet of Things (IoT) are emerging issue with the solid and healthy internet and information technology applications and NTIA is responsible for its advancement [25], [27].

VII.   CONCLUSION

The NITA is actively engaged with its divisions for the fulfillment of its core and main activities including digitization of America and American economy. The NTIA is currently on the mission of deploying the assignment of the digital literacy, broadband USA, internet policy task

force, Internet of Things (IoT), and so on. It has also actively engaged in the task of removing the digital divide and information divide in the rural America. It is also responsible for the modernizing information infrastructure of the United States and building healthy connections with other countries and peers. Improving digital economy and information and knowledge economy are the most important and vital assignment of NTIA.

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