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Review Study of NGN Comparative and Functional Study Models

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Abstract- A Next Generation Network (NGN) could be referred as a packet-based network that are often used for both telephony likewise as data which supports mobility. Initially, the Next Generation Network was used to refer to the transformation of the core network to IP. Sometimes, a NGN is mentioned as an all IP network. The research examines this state of NGN development architecture working models and future components utilized in NGN in various fields and compares the working.

Keywords– Components, Next Generation Network, Telecommunication, Market, NGN

I. INTRODUCTION

A Next Generation Network (NGN) is defined as a packet-based network which enables Telecommunication Services to users and has capabilities to use numerous broadband, QoS-enabled transport technologies and which has independent service related functions for the underlying transport-related technologies. It enables unrestricted access for users to networks, competitive service providers and to their preferred services. It supports generalized mobility, which allow consistent and ubiquitary provision of services to users.

The NGN can be depicted by the subsequent fundamental aspects:-

- Packet mode transfer
- Segregation of control functions between various bearer capabilities, call session, and application services
- Disintegration of service provision from network, and offers open interfaces between network services
- Support for a wide spectrum of services, applications and mechanisms which enable service building blocks (like real time/ streaming/ non-real time services and multimedia)
- Broadband services capable of end-to-end QoS and transparency
- Cross-connecting with legacy networks via open interfaces

- Generalized mobility
- Unrestricted access for users to different service networks
- A large range of identification schemes which can be resolved to IP addresses for the requirements of routing in IP networks
- Amalgamated service characteristics for constant service as grasped by the users
- United services between Fixed/Mobile
- Freewheeling of service-related functions from foundational transport technologies
- Submissive to all Regulatory compliances, for instance emergency communications and security/privacy, etc.

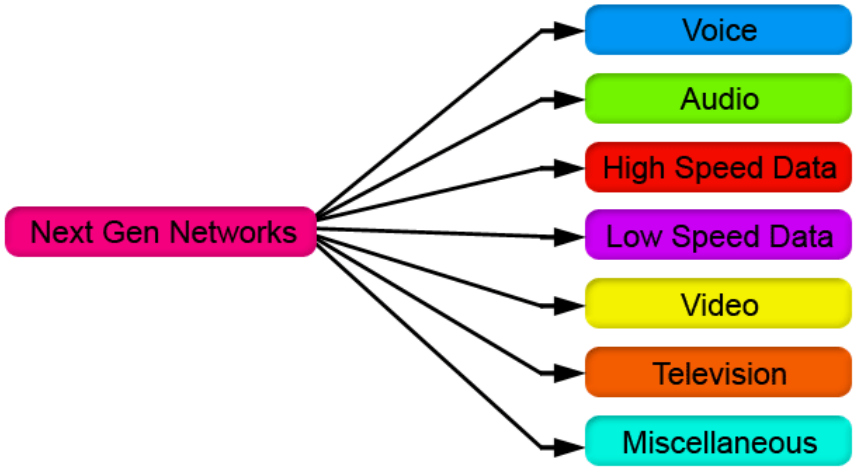

Fig. 1 IP Multimedia Subsystem (IMS) - global IP based service architecture

II. BACKGROUND

As principal network, NGN amalgamates several transport networks into one core transport network which supports IP and Ethernet with migrations from PSTN to VoIP, legacy services of X.25 and Frame Relay to IP VPN. As wired access network, NGN is accountable for the emigration from dual legacy voice text to xDSL setup to a merged setup. As cable access network, NGN supports emigrating from bit-rate voice to VoIP and SIP standards.

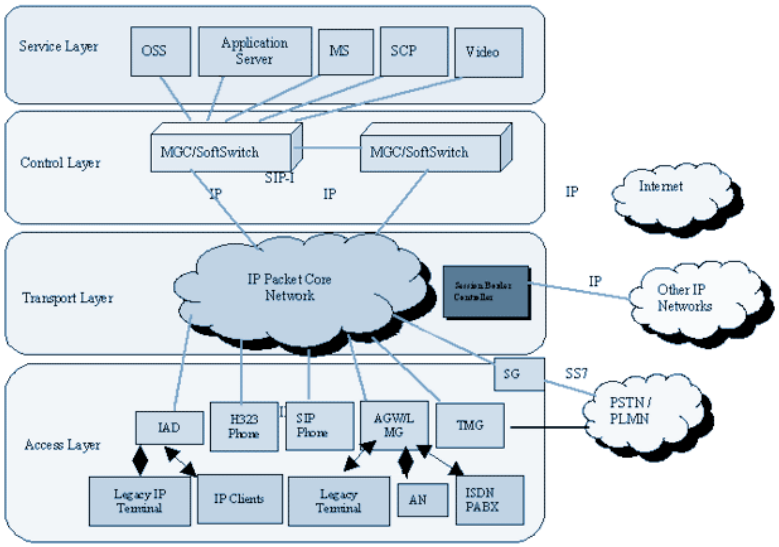

Fig. 2 Functional Architecture – NGN

III. ADVANTAGES

NGN has numerous advantages at various levels of services.

- For Unified Messaging service, it supports the transmission of voice mail, email, fax mail, and pages through common interfaces.
- In Data Connectivity, it extends numerous value added services like bandwidth on demand, persisting Switched Virtual Connections (SVC), call admission control etc.
- In Voice Telephony, it supports all traditional telephony services besides that concentrate on the foremost marketable voice telephony features.
- In Multimedia service, it enables shared computing and groupware and supports interactivity among multiple users sharing voice, video, and/or data.
- For Public Network Computing (PNC), it reinforces generic processing and storage capabilities, Enterprise Resource Planning (ERP) system, time reporting, and miscellaneous consumer applications.
- In Home Networking, it provides compatiblity for intelligent appliances, home security systems, energy systems, and entertainment systems.
- In Virtual Call Centres, it enables voice calls and e-mail messages through queue system, electronic access to customer, catalogue, stock, and ordering information, and communication between customer and agent.
- In Information Brokering, it offers advertising and knowledge delivery specified pre-specified criteria or personal preferences and behavior patterns.
- In Interactive Gaming, it establishes interactive gaming sessions for multiple users.
- For Virtual Private Network (VPN) service, it extends uniform dialing capabilities for voice VPNs and added security and network features for data VPNs.
- In E-commerce, it ensures e-transactions, verification of payment information, trading, banking and shopping successfully etc.
- In Virtual Reality, it strengthens co-ordination among multiple diverse resources in providing real world events, people, places, experiences, etc.

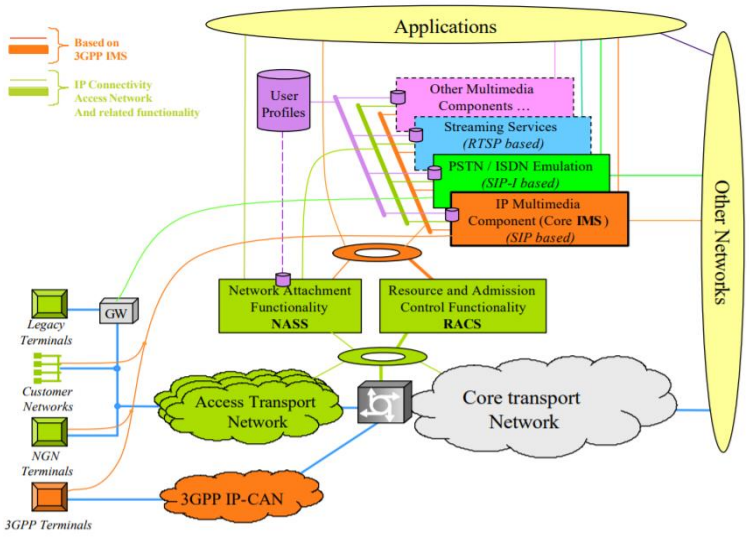

Fig. 3: Component subsystem viewpoints

IV. DISADVANTAGES

Migration complexities for the following:-

- Not all legacy services are often replaced with new alternatives
- Not all existing infrastructure are often pack up
- Regulatory restrictions for critical services.

V. CONCLUSION

In NGN architecture model, firstly, understand the economic impact of NGNs not only in terms of specific upgrades but also in terms of their overall impact which of regulation on the structure of the industry. Secondly, avoid focusing measure on market value because the only measure of industry success. This approach has been phenomenally successful within the present also. For the last 10 years and more, regulation and deregulation have transformed the telecommunication industry making it one in every of the foremost vital markets within the world. But know present industry is at the leading edge of technologies and opportunities that are still beyond our ability to imagine fully.

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