Chapter VIII
CONCLUSIONS & SUGGESTIONS

The study findings and conclusions are sorted according to the research aspects and elaborated in the following sections.

8.1 Conclusions from Comparative analysis:

1) For ICT Indicators related to ‘Access and Use’, we observe and conclude the following. In all the three indicators i.e. ‘Percentage of households with Computer’, ‘Percentage of households with internet’ and ‘Percentage of individuals using the internet’, we find developing countries India and China lead in the ranking. India acquired first rank in all the three indicators with 163.24, 157.11 and 181.05 as the average. China too performed well with respect to access and use and registered second position for all the three indicators with averages of 113.56, 142.93 and 147.26 respectively.

Conditions for France and United Kingdom were different in the five year study. France representing developed nation could attain third position for all the three indicators. Whereas UK also a representative for developed country could achieve fourth position for the indicators under consideration.

2) ICT Indicators related to ‘Fixed internet’ i.e. providing wired internet connectivity to the subscribers, using traditional (most basic) to modern connectivity methods, reveals the following. Three indicators are grouped under this category namely fixed wired (dialup), DSL (Digital subscriber’s line) and wired broadband subscribers. For developing countries like India and China these technologies still have some relevance in providing connectivity to dense rural population. India topped the list with averages
of 193.95, 142.72 & 198.28. China stood second with averages of 144.69, 141.14 & 155.62. France was third in the list acquiring averages of 116.81, 113.91 & 118.60. United Kingdom reserved fourth position with averages 110.35, 105.88 & 111.24. United States completes the list, registering averages 102.37, 103.95 & 109.17.

Developing countries like India and China still depend on these technologies for connectivity because of widely dispersed geographic locations. European countries are slowly shifting towards other alternatives technologies. Within few years these traditional methods will have very less importance for United States internet subscribers.

3) ITU ICT indicator ‘International internet bandwidth(bits/s) per internet user’ reveals that United States excelled in this sector reporting highest average of 183.06 as compared to other four countries under study. United Kingdom followed the pattern and registered an average of 178.08. Though India France and China followed the upward trend but could not achieve excellence compared to other European countries.

Developed countries like United States and United Kingdom could attain exciting averages due to highly competent internet infrastructure present in these countries. If developing countries like India and China follow the same consistent upward trend in improving infrastructural requirements, they have the potential to very soon attain excellent averages.

4) In case of the indicator ‘International Internet bandwidth’ which refers to the total used capacity of international Internet bandwidth, in megabits per second (Mbit/s), India was forerunner with an average of 344.22.
United Kingdom & United states with 196.12 & 193.74 stood second and third respectively. France could not gather better averages so got fifth position in the list of five countries.

Regardless of the fact, that India had a very poor share in International internet bandwidth in year 2008, developing country India accelerated constantly to achieve a better five year average. UK & US enjoying higher bandwidth right from the start attained a good average by maintaining the higher bandwidth. Rate of change in bandwidth forecast a far better & higher bandwidth for developing countries like India and China.

5) Wireless broadband subscribers grew at enormous rate. Specially for India this technology proved to be a boon and availed greater internet penetration. With just 71 thousand subscribers in year 2008 the subscriber base swelled to approximately 61 Million by the year 2012. United Kingdom too increased its wireless broadband subscribers to achieve second position among the five countries. China and United states incremented there subscribers by approximately 6 to 7 times. France had healthy subscriber base in year 2008 and by year 2012 subscribers were doubled.

Inception of Wireless Broadband resulted in internet connectivity revolution, covering length and breadth of developing countries, providing efficient internet penetration with fast and better connectivity. Developing countries sustained the growth in this sector, introducing more efficient technologies for fast and cheap internet connection.
6) For the indicator ‘fixed broadband monthly subscription charges’ the scenario was totally different, here an average lower than 100 is preferred, because it is in favour of the population using this service. France though started with higher monthly charges, it was able to lower the charges considerably and thereby attain an average of 84.26, the least among the five countries. United Kingdom also brought the monthly charges to get an average of 84.87, and acquire second rank in the list. Even though India experienced some ups and downs, but at last registered an average of 91.93, i.e. third country reducing charges in favour of users. China & United states were not in a position to make a significant price cut.

Though developed European countries were in lead, but the trend for developing countries predict a fast takeover in this sector.

7) Web security related World Bank indicator titled ‘secure internet servers per million people’ exposes few ground realities. Secure web servers supporting advanced encryption and decryption protocols are the urgent need of the hour, because they are the means to ensure national e-security readiness. China due to its large internet transactions concentrated on this security aspect and ranked first with an average of 206.67. Following the footsteps India strengthened its web security servers to attain an average of 183.55. France, United Kingdom and United states, already applying highly secure and foolproof security protocols, followed the list with the averages of 172.62, 144.04 & 117.33 respectively.

Global internet transaction policies are drastically changing, leading towards stringent procedures to employ most alert and safe techniques. There is a world wide struggle to maintain a balance between security and privacy.
8) ICT indicator concerned with computer and communication services, known as ‘ICT service exports’ provided by World Bank statistics identified France as a leading country in this sector, due to its best five year average of 146.42. China popularly known as service export giant competed with France to gain second position with an average of 112.37 among the five countries. United States and United Kingdom with its proficient ICT service groups secured averages 107.57 & 106.95 respectively. India concludes the list with an average of 94.52.

ICT service exports were dominated by developed European countries between years 2008-12. Statistics reveal that the poor trend exhibited by India and China are temporary and recovery is possible within few years.

9) Telecommunication related, fixed network indicator ‘fixed-telephone subscriptions’ reveals the following. France is the only country among the five were subscribers of basic telephone services kept on increasing between years 2008-12, giving it an average of 110.45. In United Kingdom too the fall in subscribers was not significant, giving it an average of 96.87. United States and India are at third and forth position with averages 90.57 & 89.51 respectively. China greatly reduced its basic telephone subscribers to achieve an average of 87.78. Looking at the individual country figures it is clear that, this service is losing its share from telecommunication sector.

10) Telecommunication related, Mobile network indicator ‘Mobile-cellular telephone subscriptions’ reveals the following. There was a rapid increase in Mobile-cellular subscribers in India between years 2008-12 attaining an average of 189.06. In china as well subscribers for this service were incremented heavily producing an average of 133.62. In case of United states also the subscribers were increased to giving an average of 106.87.
United kingdom is the only country among the five to have largest subscribers for this service in year 2008, gradually increasing till year 2012 getting an average of 105.15. Excellent averages attained by all the countries prove the need and demand for this service. Customer satisfaction and confidence can further give a boost to this sector.

11) Tariff related telecommunication indicators titled, ‘installation fee’ and ‘monthly subscription fee’ for residential telephone services, when observed in combination the following facts are brought forward. In case of installation fee, charged only once, we saw that only United Kingdom and France were able to curtail the charges getting averages 89.82 and 93.62. China India and United states increased the fee for this service getting averages 102.41, 102.73 and 150.64 respectively. Monthly subscription charges were cut short by India, United Kingdom and France, with averages of 91.89, 93.58 and 93.62 respectively. China and United states on the other hand increased the charges to get averages of 110.23 and 128.66.

Due to stiff competition among service providers and changing market trend, no country in either service can maintain the charges. Fluctuation in the charges leads to large variations among the averages.

12) Unified observation of tariff related prepaid mobile communications indicators, numbered 21,20 &28, concerned with price of one minute local call of ‘off-peak’ category revels the following. In ‘on-net’ type of service India and China were leaders due to drastic price cuts, getting averages 77.96 & 80.47. In ‘off-net’ type of service China and France could bring
down the charges to attain averages 80.47 and 85.46. In ‘to-fixed’ type of service again China and France were toppers reporting averages 80.47 and 85.46.

13) Combined conclusion for tariff related prepaid mobile communications indicators numbered, 23, 22 & 24, concerned with price of one minute local call for ‘peak hours’ category revealed the following. In ‘on-net’ type of service India and China could lower the charges acquiring averages 77.96 and 80.47. France too achieved better average of 85.46. In ‘off-net’ type of service China and France brought down the prices getting averages 80.47 and 85.46. India too was in the race, getting an average of 87.21. In ‘to-fixed’ type of service, again China and France lead the list, with averages 80.47 and 85.46. Here too India competed to get an average of 90.70.

14) Unified conclusion for tariff related prepaid mobile communications indicators numbered 26, 25, and 27, concerned with price on one minute local call for weekends, revealed the following. In ‘on-net’ type of service developing countries India and China significantly lowered the prices to reserve the top positions by getting averages of 77.96 and 80.47. France too followed the trend achieving an average of 85.46. In ‘off-net’ type of service China and France offered best prices to grab top positions reporting averages 80.47 and 85.46. Here India got third position with an average of 87.21. In ‘to-fixed’ type of service, again both China and France propelled by offering reduced charges getting averages 80.47 and 85.46.

15) ICT indicators related to revenue generation through ‘all telecommunication services’ and through ‘mobile networks reveals the following. In both the categories mentioned above China generated highest
revenues among the five countries with averages 119.14 and 133.61. In mobile sector, United States stood second in revenue generation with an average of 122.71. In ‘all telecom services’ India secured second position, posting an average of 118.88. United Kingdom incurred heavy losses in both the above mentioned categories during the years 2008-12, getting averages 50.68 and 86.11.

The study found that, approximately 40 to 60 percent of revenues from all telecommunication services were from mobile sector. Further the trends forecast even more share of mobile communication in future.

16) Conclusive remarks on ICT indicator related to ‘annual investment in telecommunication services’ are as under. Looking at the investment pattern of the countries under study shows that China has pumped a large amount in telecommunication services throughout the five years i.e. 2008-12, and attained an average of 135.51. In return China generated highest revenues in both the telecom sectors. On contrary United Kingdom too invested a lot in telecom services and achieved an average of 116.98, but suffered heavy losses. France with an average of 96.32 invested moderately, so earned moderately. United States decreased its investments over the period of five years, but generated average revenues. In case of India the investment pattern was decreasing, but comparatively the revenues generated were better.

8.2 Conclusions from Internet governance models:
1) Models proposed by working group on Internet Governance recommended following actions.

   a. Replaces ICANN governmental advisory committee (GAC) and makes ICANN accountable to GIC. Civil society and private sector is given advisory role.
b. Creation of Global forum for coordination with different stakeholders, produce analysis and recommendations on emerging issues.

c. Recommends formation of International internet council (IIC) which can solve issues related to public policy and internet resource management.

d. Give rise to global Internet governance forum (GIGF) and facilitate equal participation of governments, private sector and civil society.

2) Conclusions drawn from Models proposed by L.B. Solum are:

a. That the Internet is constituted by its architecture or code.

b. The idea that the problems of Internet regulation can be analysed by using the conventional tools of policy analysis, including but not limited to: (i) normative theory, (ii) economics, and (iii) social choice theory.

c. The idea that the logical space for discussing Internet governance can be captured via a set of ‘models’ or ideal types for Internet regulation.

3) Multi-stakeholder governance Model encourages the involvement of industry, civil society, technical and academic experts, and governments from around the globe, multi-stakeholder processes result in broader and more creative problem solving than traditional governmental approaches.

4) Indian Proposal at 66th session of United Nations concludes that: Internet governance should be inclusive and participatory. Prefers a design which should be Universally acceptable and based on globally harmonized policies for stable and well-functioning Internet.
8.3 Conclusions from descriptive studies:
1) Through one of the study we could conclude that Internet Governance is not a simple subject and cannot be handled with a digital - binary logic of true/false and good/bad, rather it requires an analog approach, covering a variety of options and compromises. We are not in a position to provide definitive statements on Internet Governance issues or challenges. We can rather propose a practical framework for the analysis, discussion, and resolution of the key problems in this field.

2) We can conclude that Identification of the public policy issues that are relevant to Internet governance needs to be refined. Development of a common understanding of the respective roles and responsibilities of Governments, existing international organizations and other forums, as well as the private sector and civil society in both developing and developed countries are of intense need.

3) Referring one of the study we can conclude, that the rapid growth and expansion of the Internet provide for constant challenges in respect to organizations concerned with the Internet such as the ICANN, the IETF, the ISOC, and W3C etc.

4) We can further conclude that the formation of working group on internet governance was of utmost help, as it demonstrated the utility and necessity of multi-stakeholder participation in Internet governance, facilitated the WSIS negotiations, promoted public engagement and clarified the nature and scope of Internet governance.
8.4 Suggestions:

During our research we came across few amazing facts and figures regarding the potential of developing countries in promoting Information and communication tools and techniques. Data analysis and interpretation of ICT indicators, for developed and developing countries, confirms the readiness and ability of developing countries like India and China to grow and actively participate in the ongoing global internet governance struggle. Exhaustive comparative analyses reveal that the emerging economies i.e. developing countries like India and China are collectively ahead during the selected research period. The sustained and rapid growth rate acquired by India and China in various ICT and telecommunication sectors brings us in a position to suggest their active participation in internet governance mechanisms.

Inspite of proving tremendous change in imbibing technological advancements by India and China, we found no internet governance model giving least role to play in governance mechanism, regardless of several representations by developing countries in United Nations assemblies. While analysing different internet governance models and observing ranks achieved by different countries, we find comparative marginalisation of developing countries with respect to participation, control, openness, security, and sharing of critical internet resources. Hence we present a suggestive internet governance model which is inclusive, democratic, transparent, accountable and multilateral giving special preference to developing countries.
8.5 Suggestive Internet Governance Model:

The suggestive model is based on
a) Study of Internet governance models and proposals.
b) Principals by World summit on the information society WSIS.
c) Report of ‘working group on internet governance’ WGIG.
d) Data analyses in our research.
e) Comparative analyses from our study.
f) Conclusions drawn from this research.

The model we suggest is basically built upon principal stakeholders, i.e. governments, the private organisations and civil societies of developed countries, with special preference to developing countries. We propose a specialised and vigilant UN body as the caretaker of the complete system.

A) Governmental supervision: balanced engagement of governments in the decision making process on Internet Governance.

The real scenario is that, ‘governments of developing countries, so far have only a limited advisory role, and no actual impact nor any involvement in the real decision making process’ related to internet governance. This created disinterest and withdrawal from international internet governance activities. This model encourages governments to provide enhanced support in the following issues.

a) Initiate schemes to enrich ICT development.
b) Constitute public centred and adaptable laws and regulations.
c) Use Information and communication technologies to develop capacity through ‘capacity building programs’.
d) Sponsor research and development programs associated with governance mechanisms.
e) Control cybercrime through powerful and influential national security plans and procedures.
e) Establish committees for regional, national and international cooperation for coping internet governance issues.
f) Inculcate diverse cultural and multilingual policy matters.
g) Resolve governance issues and policy disputes through mutual arbitration.
h) Should avoid involvement in day-to-day operations and administration.

B) The Private Sector: The private sector should lead, because most of the technical infrastructure through which Internet traffic is channelled is owned by private and state companies, typically telecommunication operators. Even where collective action is necessary, governments should encourage industry self-regulation and private sector leadership where possible. Suggested model expects the private sector to exhibit the following:

a) The Internet should develop as a market driven area not a regulated industry.
b) private sector should play a role in the operation and technical evolution of Internet
c) Enforce a predictable, modest, reliable, and simple legal environment for e-commerce.
d) Development of policy proposals, guidelines and tools for policy-makers and other stakeholders.
e) Involve in the drafting of national law and contribute in national and international policy development
f) Promote innovation.
C) **Civil Society:** Civil societies played an important role in Internet governance matters, especially at community level, and should continue to lay such a role of finalising treaties, moderating online services containing user generated content, and in common shared norms of online behaviour.

   a) Provide a ground for open, on-line and face-to-face debate on the range of issues related to Internet governance policies from a civil society perspective.
   b) Represent marginalized groups, excluded communities and grass-root activists.
   c) Share expertise, skills, experience and knowledge in ICT policy areas.
   d) Positively involve in policy processes that are more bottom-up, people-centred and inclusive
   e) Civil societies should engage young people to educate good governance practices, encourage research and development and propagation of best practices in the field of internet governance.
   f) Promote development of social projects and activities that are critical but may not be profitable.
   g) Create informal relationships with various civil society groups and individuals with a direct interest in Internet governance policies, including those involved in human rights, intellectual property, international trade and global electronic commerce, access to knowledge, and security.

Flowchart 8.5.1 ahead pictorially represents the necessary functions to be performed by the stakeholders and the method of interconnection among them.
Proposed Model

United Nations

Stakeholders

Governments
a. Initiate schemes to enrich ICT development.
b. Constitute public centred and adaptable laws and regulations.
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Net Surfers