Administration of Interconnection between Networks and Faced Issues

Wang Jian

Jiangsu Communications Administration (JSCA)

August, 2002
Contents

• Goals of Interconnection

• Successful Factors for Interconnection and Interwork

• Current Status of Telecom Development and Interconnection in Jiangsu

• Concrete Measures for Realizing Interconnection Goals

• New Issues and Ideas
• To **interconnect** transmission networks and services, allowing customers of one operator to communicate with customers of another operator and enjoy the services provided by another operator

• To **create** a pro-industrial development, national macro-policy compliant and fair competition environment

• To **achieve** the goal of smooth interconnection, unimpeded flow between networks, and high quality
Success Factors for Network Interconnection and Interwork

• Basic elements for interconnection and interwork

• Technical elements for interconnection and interwork

• An understanding of interconnection and interwork
Basic Elements of Interconnection and Interwork

- Powerful legal support
- Fair, strict and uncorrupted government supervisory bodies
- Complete administrative system and supervisory means
- Philosophy changing of Incumbent telecom operators
- Mutual understanding, communication and cooperation between the two interconnected parties
Technical Elements of Interconnection and Interwork

- Advanced physical platform for interconnection
- Reliable account settlement system for interwork
- Complete quality index of communications between networks
- Scientific communications quality supervision means
- Strong technical support teams
An Understanding of Interconnection and Interwork

- Basic understanding
- Advocated ideas
- Operators should keep interconnection in mind
Basic Understanding

• The necessary conditions for market opening, industrial development and enterprise development

• The basic judgement of the success or failure of telecom reform

• An important proof on the concept transformation of incumbent telecom enterprises.

• The major responsibility of regulation departments
Advocated Conception

• Equality---every enterprise is equal in spite of its size and seniority in the market
• Communication---advocate that enterprises communicate and negotiate with each other
• Cooperation---advocate to seek cooperation and development in competition for mutual benefits
• Supervision---advocate to supervise each other among the enterprises and strengthen self-discipline, solve inherent issues in the enterprises
Keep Interconnection in mind I

- Customers First, Advanced Services, Effective Management, Excellent Brands and Legal Competition

- Establish legal consciousness firmly, observe disciplines and obey laws, build nice images of the enterprises

- Change the philosophy of the staff of all levels from top to the bottom and deal with interconnection and interwork positively

- Change the conception that users are enterprises’ intrinsic resources

- Interconnection and interwork are another kind of service for customers
Keep Interconnection in mind II

• Interconnected operators have a relationship of being each other’s large customers

• Interconnection and interwork are the obligation of an operator and maintaining the quality of communications between networks is the inherent requirement for maintaining the operator’s image

• Establish the idea of fair competition as well as cooperation among operators

• The deep understanding of the concept of interconnection is a sign that operators, especially incumbent telecommunications operators are moving to maturity
Current Situation of Telecom Development and Interconnection in Jiangsu Province

• Revenues and occupied shares of telecom services

• Total number of telephone subscribers and proportions by different operators

• Prices of telecom services

• Quality of communications between networks

• Conditions of interconnection
Telecom service revenue and proportion

2000
- 2.6 billion (84.4%)
  - Jiangsu Telecom: 12.66 billion (48.2%)
  - Jiangsu Mobile: 1.35 billion (51.8%)

2001
- 11.92 billion (2.2%)
  - Jiangsu Telecom: 8.29 billion (70.8%)
  - Jiangsu Mobile: 3.63 billion (29.2%)

Growth: 17.1%

- 127.4% in 2000
- 70.8% in 2001

June, 2002
- 6.53 billion (10.8%)
- 4.804 billion (22%)
- 150 million (26%)

Jiangsu Telecom: 37%
Jiangsu Mobile: 37%
Jiangsu Unicom: 12%
Total number of telephone subscribers and proportions by different operators

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Subscribers</th>
<th>Growth</th>
<th>Jiangsu Mobile</th>
<th>Jiangsu Unicom</th>
<th>Jiangsu Telecom</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>30.688 million</td>
<td>26.1%</td>
<td>10%</td>
<td>25%</td>
<td>55%</td>
</tr>
<tr>
<td>2001</td>
<td>24.34 million</td>
<td>56.3%</td>
<td>29%</td>
<td>14%</td>
<td>57%</td>
</tr>
</tbody>
</table>

- **2000**:
  - 11.38 million subscribers
  - Growth: 26.1%
  - Jiangsu Mobile: 25%
  - Jiangsu Unicom: 10%
  - Jiangsu Telecom: 65%

- **2001**:
  - 14.02 million subscribers
  - Growth: 56.3%
  - Jiangsu Mobile: 29%
  - Jiangsu Unicom: 14%
  - Jiangsu Telecom: 57%
• Current situation:

1. The prices of the basic telecom services follow the ministerial standards and the prices of the value added services are relatively stable.

2. The enterprises have a deeper understanding to the bad "price war", and the society, news media and enterprises supervise with each other, so "price war" has no market in Jiangsu.
Price Status of Telecom Services (II)

- Regulatory system
  --- Relatively perfect procedures of price examination, approval, and “putting on record”
  --- Marked prices
  --- Strengthen the administration and law-enforcing work
Communications Quality between Networks (I)

- Key indexes

“Commitment on Ensuring Communications Quality between Networks” 2002.3.7

----Proportion of effective internetwork services in local services is greater than 90%

----Busy hour traffic per line between gateways is lower than 0.7ERL

“Administrative Approaches on the Operation and Maintenance of the Interconnected High-level Transmission Ring Network ” 2002.3.7

----upper limit busy hour traffic per line is 0.6ERL and the lower limit is 0.4ERL
<table>
<thead>
<tr>
<th></th>
<th>No. of Circuits</th>
<th>Total Traffic (ERL)</th>
<th>Busy Hour traffic Per line (ERL)</th>
<th>Attempt Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecom---Mobile</td>
<td>70491</td>
<td>24398</td>
<td>0.34</td>
<td>95%</td>
</tr>
<tr>
<td>Telecom---Unicom</td>
<td>16888</td>
<td>8291</td>
<td>0.49</td>
<td>95%</td>
</tr>
<tr>
<td>Unicom---Mobile</td>
<td>11636</td>
<td>5469</td>
<td>0.47</td>
<td>90%</td>
</tr>
</tbody>
</table>
Status of Interconnection

- The relation of physical connection between networks is clear.
- The pattern of opening services on an equal basis takes shape basically
- The interconnection bodies and relevant regulation are ready
- The relationship of competition and cooperation is being established
- The issue of communications quality is increasingly obvious
- The laws and regulations still remain to be improved
Measures to reach the Goal of Interconnection

• Follow the successful factors for interconnection and interwork

1. Basic guideline

2. Definitive regulation principles

3. Perfect organization and working system

4. Recommend proper interconnection technology

5. Deal with the relations between interconnection and market competition behavior
Basic Guideline

- Organization must put in effect
- Make procedures clear
- Make the system perfect
- Strengthen the investigation
- Grasp the key points
- Move forward steadily
- Continuous innovation
Definitive Regulation Principles (I)

• Follow the principles of exploding monopoly, encouraging competition, promoting development and being open, fair and just

• Conduct interconnection rationally, open services reciprocally, support new enterprises in participating market competition, and streamline and systemize interconnection and interwork

• Interconnection involves in economic relations among enterprises. While interconnection is implemented as a compulsory measure, the economic benefits of different operators should also be considered.
• Raise industrial service level, accelerate technical progress, rational use of resources, facilitate the common development of enterprises and market prosperity

• The general development level of the industry and the environment of competition and cooperation are the measure of evaluating the work of regulatory departments

• Strengthening research, exploitation and innovation, accumulating experiences, and promoting development are the philosophy of government regulation
Systematic Organization Structure and Working System

- Dispute settlement
- Regular meeting coordination
- Handling major quality issues
- Routine work
- Handling minor quality issues
- Organization & Working System
Organization Structure

--- Leading Group of Interconnection and Interwork

--- Working Group of Interconnection and Interwork

--- Regular Communication System between the government and enterprises and between enterprises and enterprises

--- A system of joint test and handling of communications quality issues

--- A system of dictation and guidance for equipment maintenance

--- A high-level regular meeting system for interconnection

--- A system of announcing or reporting on major issues
Routine Work

Communications Administration

Summarize and Report

Provincial Companies

Working Group studies solutions

Normal?

Exchange info

Monthly report of communications quality

Supervision and Inspection

Inspection and Implementation

Reporting
The Handling of General Quality Issues

Inspection result

Communications Administration

Provincial companies

Written report

Check and handle

Working group initiates work flow

Notify the other party in written form

One party discovers problems

Spot check
The Handling of Major Quality Issues

Communications Administration and provincial companies

- 4-hour oral report
- 24-hour written report
- 5-day special report

Initiate the handling procedure for major issues

Leading group gives directions

Discover issues

Inspect and circulate a notice
Regular Meeting Harmonization

Purpose: Communication, understanding, negotiation, handling and summarization

Major participants: Director General and Deputy Director, and Division Chief of General of Provincial Communication Administration, General Manager, Deputy Vice Manager and Division Chief of provincial companies

Before the meeting: participants gather interconnection issues; the Communications Administration summons working groups to have a pre-meeting and clarify the meeting topics

In the meeting: Make negotiations, unify the viewpoints, strive for effectiveness and complete meeting conclusion

After the meeting: implement, inspect and check Report how to implement the last “meeting conclusions” at the next regular meeting
Dispute Handling

Application for Coordinating Interconnection

Examination by Communications Administration

Coordination categories?

Yes → Coordination

No → Enterprise coordination

Agreed by both sides?

Yes → Issue “Letter of Opinion on Coordination of Telecom Network Interconnection Disputes

No → Settle in time

Both sides report the implementation conditions within 3 days before expiry date
Recommend proper Interconnection Technology

- Building of dedicated interface office
  ----Build dedicated interface office in peer-to-peer mode

- High level transmission ring network
  ----Joint investment, resource sharing and concerted management

- Inter-network Settlement Management
  ----Find the problems, and check and deal properly with them in time
High Level Transmission Ring Network ---- the sketch map
High Level Transmission Ring Network – Advantage Analysis

- Rational network architecture
- Full utilization of resources
- Secure and scalable
- Economical engineering investment
- Easy Interconnection implementation
- Centralized and unified management
Deal with the relationship between Interconnection and Market Competition Behavior

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Property</th>
<th>Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications Quality</td>
<td>General faults</td>
<td>Violation</td>
</tr>
<tr>
<td></td>
<td>Man-made faults</td>
<td>Illegal</td>
</tr>
<tr>
<td>Market Competition</td>
<td>General Behavior</td>
<td>Allowed</td>
</tr>
<tr>
<td></td>
<td>Vicious Behavior</td>
<td>Violation</td>
</tr>
</tbody>
</table>
New Issues and Ideas (I)

- Interconnection becomes diversiform and complicated
- The phenomenon of being connected but blocked and unstable is spreading
- The national macro policy of introducing competition is challenged severely
- The function of the government regulatory department faces with proof
- It is extremely urgent to specify market behavior
New Issues and Ideas (II)

- Call upon the Telecommunication Act to be issued
- Change old concepts, and create a good environment with legal system
- Set up a management system with distinct Chinese characteristics
- Deepen the reform, and accelerate the paces of competition and opening-up
- Set up the quality supervision system of the network
  ----Technical measures
  ----Necessary organizations
Technical Measure – Establishing Network Quality Supervision and Measurement System

Communication Administration network monitoring system

Provincial network management system

Circle network management system

Local Network

Provincial network management system

Circle network management system

Circle network management system
Technical Measure – Establishing Internetwork Billing and Clearing Centers

National Cleaning Center

Provincial Cleaning Center 1

Cleaning Center 1

GW

Provincial Cleaning Center N

Cleaning Center 1

GW

Local network

Pronvincial

National
Organizational Construction

---Supervise each other among enterprises

----Give play to the role of specialist groups

---Strengthen the work of 12300 Customer Complaint Center

----Introduce public opinion and social supervision

----Strengthen the self-regulating function of industrial associations
Thank you!