

***Proceedings of the 18th Northeast
Asia Economic Forum in Busan,
Korea 2009***



Northeast Asia Economic Forum

Acknowledgments

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Contents

Acknowledgments	i
Contents	ii
List of Figures	iii
List of Tables	v
Introduction and Highlights of the 18 th Northeast Asia Economic Forum	vi
Opening Ceremony	8
Remarks by His Excellency President Lee Myung Bak on the Occasion of the 18 th Annual Conference of the Northeast Asia Economic Forum	9
Remarks by Jiang Zhenghua, Former Vice-Chairman, Standing Committee of National People’s Congress of China, Honorary Chairman of the Research Center for Financial Cooperation in Northeast Asia	11
Remarks by Taro Nakayama, Member of the House of Representatives of Japan and Former Minister of Foreign Affairs of Japan	13
Statement from Tsakhiagiin Elbegdorj, the President of Mongolia	14
Statement from Vyacheslav Shport, Khabarovsk Territorial Governor of the Russian Federation	15
Keynote Address: “Global Economic Crisis and Northeast Asia”, Dr. SaKong Il, Chairman & CEO, Korea International Trade Association; Chairman, G20 Summit Coordinating Committee, Office of the President, Republic of Korea	16
Session I: Cross-Border Regional Cooperation: Transportation and Logistics	20
1. New Regionalism across Korea-Japan Strait: Cross-Border Region between Busan and Fukuoka	21
2. Development of Intermodal Land Transport in Asia	38
Comments	46
Session II: Energy Cooperation in Northeast Asia	49
3. Post-Economic Crisis: Rebuilding Energy Supply & Demand Equilibrium in Northeast Asia	50
4. Energy Cooperative Activities in NEA under the Greater Tumen Initiative	67
Session III: Green Energy Cooperation and Partnership in Energy Efficiency	73
5. China’s Progress in Energy Saving and Emission Reduction and the Development and Utilization of Renewable Energy	74
6. Electrification for Green Future	79
Energy Session Conclusions: International Expert Workshop for Northeast Asian Energy Cooperation	89
Session IV: Financial Cooperation in Northeast Asia – Steps Towards a Regional Financial Institution for Cooperation and Development	92
7. Will Northeast Asia’s Functional Economic Integration Lead to Formal Regional Economic Integration?	93
8. Northeast Asian Development Finance Cooperation: The New Bank and the Support Network	105
9. Global Financial Crisis and Policy Responses in Korea	116
10. Economic Integration of Northeast Asia and the Function of the Northeast Asia Bank of Cooperation and Development	121
11. The Northeast Asian Bank for Cooperation and Development: From Rhetoric to Reality	129
Session V: Communication and Contents Industries in Northeast Asia	134
12. Digital Media Platform’s Role & KT case - Based on “Keystone” concept	135
Conclusion: The Busan Declaration - 28 August 2009	161
Appendix: Agenda	164

List of Figures

<Figure 1.1>: Mega city region and its relationships.....	22
<Figure 1.2>: Development Stage of CBR.....	26
<Figure 1.3>: Busan-Fukuoka (Bu-Fu) CBR.....	27
<Figure 1.4>: Spatial layers of economic integration of KJSEZ.....	27
<Figure 1.5>: The passenger transport network across the Korea-Japan Strait.....	30
<Figure 1.6>: Governance structure of the Busan-Fukuoka CBR.....	31
<Figure 2.1>: Future container trade.....	39
<Figure 2.2>: Development of Asian Highway.....	40
<Figure 2.3>: Physical status of the AH network in north-east region.....	41
<Figure 2.3>: Physical status of the AH network in north-east region.....	41
<Figure 2.4>: Demonstration runs of container block-trains.....	42
<Fig 2.5> Demonstration run between Tianjin and Ulaanbaatar.....	43
<Figure 2.6>: Demonstration run between Lianyungang and Almaty.....	44
<Figure 3.1>: Global Oil Price Curve.....	51
<Figure 3.2>: Comparison between the Aggregate Supply of Petroleum Products in China and Russia Unit kb/d.....	52
<Figure 3.3>: Comparative Oil Products Demand by China, Japan and Korea (Unit: kb/d).....	53
<Figure 3.4>: Total Oil Supply of Russia.....	54
<Figure 3.5>: Demand by Product, Russia.....	54
<Figure 3.6>: Russia: Gasoil Demand.....	55
<Figure 3.7>: Total Oil Product Demand, China.....	56
<Figure 3.8>: Demand by Product, China.....	56
<Figure 3.9>: Total Oil Supply of China.....	57
<Figure 3.10>: Japan's Imports of Crude Oil.....	58
<Figure 3.11>: Comparison of Monthly Imports of Crude Oil (Japan, 2002-2008).....	58
<Figure 3.12>: 12 Month Moving Average Demand vs. Y/Y Growth, Japan.....	59
<Figure 3.13>: Closing Industry Stocks of Crude Oil, Japan.....	60
<Figure 3.14>: Imports of Crude Oil (Korea, 2007-2008).....	61
<Figure 3.15>: Comparison of Monthly Imports of Crude Oil (Korea, 2002-2008).....	62
<Figure 3.16>: 12 Month Moving Average Demand vs. Y/Y Growth (Korea, 2007-2008).....	62
<Figure 3.17>: Closing Industry Stocks of Total Products (Korea).....	63
<Figure 4.1>: Map of Greater Tumen Region.....	68
<Figure 4.2>: Institutional Structure of the GTI.....	68
<Figure 6.1>: CO2 Emission by Sector (2007).....	80
<Figure 6.2>: Electrification in Economies.....	82
<Figure 6.3>: Electrification in the Industry Sector.....	82
<Figure 6.4>: Electrification in the Household Sector.....	83
<Figure 6.5>: Energy Use in the Household Sector (2006).....	84
<Figure 6.6>: Heat Pump is Clean and Efficient.....	85
<Figure 6.7>: Potential CO2 Reduction by Heat Pump.....	85
<Figure 6.8>: Hybrids to EV.....	86
<Figure 6.9>: Smart Grid.....	87
<Figure 7.1>: Share of Intra-regional Trade between China, Japan and South Korea.....	96
<Figure 7.2>: Share of Intra-regional Trade of China, Japan and South Korea.....	96
<Figure 8.1> : Proposed Institutional Framework in Northeast Asia.....	108
<Figure 8.2>: Proposed Linked Development Financing.....	109
<Figure 8.3>: Organization for Northeast Asian Economic and Social Development.....	111
<Figure 9.1> Time Line of Crisis and Stock Price Indices in Korea, the US, China and Japan (2008. 1. 1 = 100).....	117
<Figure 12.1>. Media platform in Media 1.0.....	136
<Figure 12.2>. Hollywood Nominal and Real Marketing Costs, 1981-2004.....	137
<Figure 12.3>. Platform in Media 2.0 and three sources of value creation.....	139

<Figure 12.4>. Google as Keystone platform & Google Rules by J. Jarvis.....	145
<Figure 12.5>. Cross-platform between mass & web media in Media 2.0.....	146
<Figure 12.6>. New architectures in Media 2.0, comparing to Media 1.0.....	147
<Figure 12.7>. Architecture of Synchronization.....	147
<Figure 12.8>. Architecture of Mass Customization.....	148
<Figure 12.9>. Architecture of Openness.....	149
<Figure 12.10>. Revenue Growth of free TV & pay TV in Korea.....	150
<Figure 12.11>. ARPU comparison (unit: US\$).....	150
<Figure 12.12>. Global media market growth (2007 vs. 2003) (unit: trillionW).....	151
<Figure 12.13>. KT's long run plan of synchronization, mass customization and openness.....	152

List of Tables

<Table 1.1> A Rise of New Regionalism	22
<Table 1.2> CBRs in Europe and Asia	23
<Table 1.3> General Economic Features of KJSEZ	28
<Table-3.1>: The Concerning Data about Japan's Natural Gas in 2008.....	60
<Table-3.2>: Data of Gas (Korea, 2008)	63
<Table 6.1>: CO2 Emission by Sector (1990-2007).....	81
<Table 6.2>: Vehicle Specifications (BEV)	87
<Table 7.1>: The Share of Intra-regional Trade	94
<Table 7.2>: Trade Dependency of Each Country on Northeast Asian Economies	95
<Annex Table 7.1>: Share of Intra-regional Trade between China, Japan and South Korea.....	103
<Annex Table 7.2>: Share of Intra-regional Trade of China, Japan and South Korea	104
<Table 10.1> Paid-up and Callable Ratios of the Major Multilateral Institutions	124
<Table 10.2> Equity Ratio of Six Member Countries in NEABCD	126
<Table 12.1>. Companies' different role strategies categorized by Iansiti & Levien.....	141

Introduction and Highlights of the 18th Northeast Asia Economic Forum in Busan

The Northeast Asia Economic Forum (NEAEF), in partnership with the Busan Metropolitan Government, convened the 18th annual Northeast Asia Economic Forum meeting in Busan, Republic of Korea, on 27-28 August 2009. Representatives from the People's Republic of China, Japan, Republic of Korea, Russian Federation, Mongolia, EU and the United States met to take steps toward greater cooperation and integration among Northeast Asian nations. Busan, Republic of Korea, a port city with a long tradition as a vital economic hub for Northeast Asia, served as an excellent backdrop for discussing the opportunities for Northeast Asia to reemerge from a global crisis. The annual conference attained another milestone toward a common goal of regional integration through discussion of critical regional issues and opportunities.

Dr. Lee-Jay Cho, Chairman of the Northeast Asia Economic Forum officially opened the 18th Annual NEAEF Conference with acknowledgments and sincere appreciations to the host organization, the Busan Metropolitan Government and cooperating institutions. Mayor Hur Nam Sik delivered the welcoming remarks on behalf of the city and people of Busan.

The dynamic opening ceremony included a statement delivered on behalf of President Lee Myung Bak of the Republic of Korea and noted the importance of the work of the Northeast Asia Economic Forum in providing direction for future regional economic development, especially the potential for NEAEF to act as a catalyst for concrete achievements in multilateral cooperation. A statement by Dr. Nakayama Taro, Member the Diet and Former Foreign Minister of Japan underscored the importance of cross border infrastructure development and institutional arrangements for regional cooperation and recognized the central role of the NEAEF in the effort of institutionalizing a regional multilateral mechanism for development financing. Dr. Jiang Zhenghua, Former Vice President of the National People's Congress acknowledged the historic initiative of the NEAEF in pioneering the functional cooperation and its concrete accomplishments, especially in laying foundation for regional financial cooperation. The statement from President Tsakhaiaigiin Elbegdorj of Mongolia appreciated the work of the NEAEF and officially invited the 19th Annual Forum Conference to be held in Mongolia. Other congratulatory remarks followed from Russia, the EU and USA (Former Governor of the State of Hawaii George Ariyoshi).

The keynote address was delivered by the Chairman of the Korean International Trade Association and of the G20 Summit Coordinating Committee of the Office of the President of the Republic of Korea, who stressed the importance of Northeast Asia's role in bringing rapid stability to the global economy.

The session on Cross-Border Transportation and Logistics Cooperation clearly identified the role that cross-border transport plays in localized regional development in the area. Talks on highway and rail transport underscored the need for greater financing to improve cross-border transport links, to develop regional transit hubs, and to standardize transit tariffs and documentation, and the U.S. has leading technology and experience to share.

The session on Energy Cooperation in Northeast Asia showcased the opportunity for cross-border cooperation created by economic recovery conditions. Global factors such as restructuring of energy markets, the problem of carbon emissions and global climate change, and a new U.S. administration with a green energy and environment agenda suggest a significant opportunity to

develop regional strategies to diversify sources of energy resources to meet a diverse profile of energy needs.

The session on Green Energy Cooperation and Partnerships in Energy Efficiency and Conservation informed the participants about the new Green Growth Policy of the Republic of Korea; provided information on the tangible recent achievements within China in energy efficiency and reduction of greenhouse gas emissions; and featured technological solutions, specifically the use of electricity within Japan, as a significant pathway for energy efficiency and emissions reduction. Energy storage and smart-grid technology were identified as areas of particular promise. The U.S can benefit from interaction and cooperation with Northeast Asia for better energy use.

The session on Financial Cooperation and Development highlighted the role a Northeast Asian bank would play in the region in attracting sufficient capital for cross-border projects for Northeast Asia. It was noted that Northeast Asia is the only region in the world without a multilateral bank to serve it. A major topic the participants discussed throughout the conference was the timing, structure and financing requirements for establishing a Northeast Asian Bank for Cooperation and Development. The regional bank is seen as an ideal regional and multilateral vehicle for capitalizing cross-border infrastructure development projects as underscored by former Executive Vice President of Asia Development Bank, Stanley Katz of the U.S., a principal architect of the proposed regional bank.

The session on Communication and Contents Industries in Northeast Asia, an industry that has exploded as an engine of growth for the region, featured a new direction for the NEAEF annual forum. The U.S., a leader in this sector, can certainly become a major partner in the future.

Opening Ceremony

Statements from:

- the President of the Republic of Korea
- Country Representatives
- Keynote Address

***Remarks by His Excellency President Lee Myung Bak on the Occasion of the
18th Annual Conference of the Northeast Asia Economic Forum***

Please accept my sincere congratulations for the opening of the 18th Annual Conference of the Northeast Asia Economic Forum. I would like to extend my warm welcome to the participants, speakers, commentators and distinguished guests from far and near.

As you all well know, in Northeast Asia, different countries and peoples with rich culture and heritage have competed as well as cooperated over the centuries. And particularly during the past 100 years, it has experienced major conflict and wars. This region, moreover, includes one of the last divided countries, and is thereby continued to be viewed as an area of conflict and tension.

Nevertheless, in overcoming economic crises, it has emerged as one of the most dynamic economic center in the world.

I believe that if we can achieve regional cooperation in Northeast Asia, we will be able to realize our potential for becoming a region of tremendous opportunities.

Since its establishment in 1991, the Northeast Asia Economic Forum has in the course of 20 years, proposed constructive policies aimed at regional harmony and development.

The forum, starting with the proposal of the Tumen River Area Development, has engaged in substantial discussion on important topics such as a Northeast Asia energy community, development of an efficient transportation and logistics system and environmental issues among others.

In recent years, the forum has taken specific steps toward developing a regional, financial cooperation mechanism that would facilitate implementing various major cross-border efforts. The forum's activities are greatly appreciated for this.

Moreover, discussion on the subject of low carbon green-growth is timely and most appropriate.

"Functional Cooperation in Northeast Asia," a theme for this annual conference program, as was in the past, will contribute to generating creative approaches toward stability and cooperative development in Northeast Asia. I am confident that the substance of these discussions during this Forum conference and its recommendations will serve as valuable foundations for bringing about peace and prosperity in Northeast Asia.

I attach great significance to the fact that this conference is hosted by the Busan Metropolitan City. Busan is endowed with a geographically strategic location. Citizens of Busan should actively participate in its great effort in making Busan into a global transportation and logistics center.

I look forward to creative ideas and suggestions for designing, developing and expanding Northeast Asia's functional infrastructure for regional cooperative development.

I extend my sincere appreciation to Mayor Hur Nam Sik of Busan Metropolitan City and Dr. Cho Lee-Jay, Chairman of the Northeast Asia Economics Forum for providing this occasion.

Once again, I wish everyone a very successful annual conference.

Thank you very much,
Lee Myung-Bak, President of the Republic of Korea.

Remarks by Jiang Zhenghua, Former Vice-Chairman, Standing Committee of the National People's Congress of China, Honorary Chairman of the Research Center for Financial Cooperation in Northeast Asia

Mr. Chairman Lee-Jay Cho of the Northeast Asia Economic Forum, the Honorable Mr. Hur Nam-Sik, Mayor of Busan, distinguished guests, ladies and gentlemen,

I am delighted to attend the 18th Northeast Asia Economic Forum in the beautiful city of Busan. For the past twenty years, Dr. Lee-Jay Cho, Chairman of the Northeast Asia Economic Forum, together with many distinguished researchers, has initiated communications and exchanges of ideas via the platform of the annual Forum meeting, consistently promoting Northeast Asia's economic cooperation and peaceful development. This work not only conforms to the trend of the era, but also demonstrates the existence of Northeast Asia as one of the most active economic regions in the present-day world.

Different countries have been getting more and more inter-dependent in today's world. Achieving win-win solutions through greater communication and strengthened cooperation has become a main theme in the conduct of international affairs. Northeast Asia is an important region that plays an important role in the peace, security and development of the Asia-Pacific region as well as the whole world. We are building a colourful and harmonious society in Northeast Asia of mutual respect in politics, along with harmonic differences; a society of mutual trust in security, along with mutual conservation; a society of mutual benefits in economics, along with joint development; and a society of mutual esteem in culture, along with reciprocal borrowings. Such a Northeast Asian society would be profoundly beneficial for the region's countries and even for the evolution of the global political landscape.

Nowadays, the world economy is experiencing an exceptionally severe challenge. How to actively tackle the international financial crisis and promote growth for the recovery of the world economy is a vital task for Northeast Asia as well as all other countries. Topics to be addressed in this Forum—such as cross-border regional communications and logistics cooperation, regional energy resources cooperation, green resources, cooperation in efficient energy utilization and protection, and communications and the information industry—are all important to the healthy and sustainable growth of both the world and the Northeast Asian region. I believe there will be new content in old topics under the new economic circumstances, vividly demonstrating their imminence and operability while providing new decisive support to regional economic cooperation.

This year's forum will continue the discussion of approaches to regional financial cooperation in Northeast Asia, which has been proposed and discussed by the Forum for some years. Through persistent communications, we have reached a common understanding from the non-governmental perspective that it is necessary to create an institution for international financial cooperation institution in Northeast Asia. And this idea has already drawn close attention from regional governments. The creation of a regional international development bank not only can provide funding for cross-border infrastructure development, but also can accumulate experience for exploring new mechanisms for financial cooperation in the region. This is in conformity with the historical trend as well as the fundamental interests of the region's countries.

The global financial crisis has created great difficulties and severe challenges for the Northeast Asian region ever since last year. China decisively deployed an active fiscal policy and a moderately loose monetary policy, as parts of a package plan that targeted an increase in domestic demand and maintaining steady and fast economy growth. These policies have already demonstrated their preliminary effects. The Chinese economy is still able to maintain steady and fast growth, which will have a positive effect on the Northeast Asian regional economy, and even the global economy. I believe that the fundamental goal for Northeast Asia is to achieve long-term mutual development, share development opportunities, jointly respond to challenges, and comprehensively strengthen cooperation. We should persevere in advocating respect for each other's social systems and development models, and in supporting peaceful development. Following the principle of mutual benefits with complementary advantages, we would promote balanced, mutually beneficial and win-win economic growth in the region, for a peaceful and stable Northeast Asia.

To conclude, I would like to express my gratitude to the Busan Government for its warm welcome, and I wish the forthcoming 18th Northeast Asia Economic Forum great success!

Thank you!

***Remarks by Taro Nakayama, Member of the House of Representatives of Japan
and Former Minister of Foreign Affairs of Japan***

Distinguished host, honorable guests, ladies and gentlemen,

I am delighted to deliver my remarks to celebrate and convey my sincere respects for the co-organizers of the 18th Northeast Asia Economic Forum.

Northeast Asian economy is on the verge of major changes. However, many serious issues in this region remain to be tackled. We are seeing a shortage of energy and raw materials and fluctuation in their prices. In terms of energy, Japan depends mostly on imported oil and gas. We are looking more and more toward environment-friendly resources, however, their share in energy supply is still limited at the moment. Previous cooperation on energy issues has been remarkable, but we must see to what extent countries will be able to work together. We should seek more regional and inter-regional contribution, beyond our previous achievements, to the solution of these issues.

Development of physical infrastructure as well as institutional framework is essential to promote further energy-related cooperation in Northeast Asia. The Northeast Asia Economic Forum has been playing the central role in an effort to establish a regional development financial institution.

We can expect dramatic changes in Asia in the future. Considering coming major development and unsolved problems in Northeast Asian economies as mentioned above, we must start thinking of the Asian region as a whole. My hope is that in our conference here and in our future efforts, we will be able to work more towards this. I am very much looking forward to the result that this conference is going to produce.

Thank you very much.

Statement from Tsakhiagiin Elbegdorj, the President of Mongolia

Dr Lee-Jay CHO, Chairman of the Northeast Asia Economic Forum,
Esteemed participants of the 18th Meeting of the Northeast Asia Economic Forum,

I extend my warmest greetings to the Northeast Asia Economic Forum's 18th Meeting in Busan.

On behalf of the Mongolian government, I would like also to extend our congratulations to the accomplishments of the Northeast Asia Economic Forum, since its establishment in 1991, in promoting regional economic cooperation in Northeast Asia, in conjunction with the launching of the Tumen River Area development proposal.

Mongolia as the nation in the Northeast Asia has been actively promoting the concept of integration and regionalism in the Asia Pacific, particularly in Northeast Asia in the interests of peace and common prosperity. With its vast land and rich natural resources but remote from international seas, Mongolia attaches great importance to developing cooperation with countries in Northeast Asia toward building infrastructure in energy, transportation and financial services. At the same time, being conscious of protecting environment and preventing negative consequences of climate change, Mongolia has fully committed itself to fulfilling its obligations and duties under the regional and international cooperation framework.

On this occasion of the 18th NEAEF conference in Busan, Korea, we are pleased to invite the Forum to Mongolia for the 19th Forum Conference in the year 2010. We very much appreciated hosting the 7th Forum Conference in Mongolia in August 1997, which we consider as a historically important stage for discussion of constructive ideas for regional economic cooperation such as the Northeast Asian Energy Community, integration of transportation networks and a Northeast Asian Development Bank for cooperation and development.

I wish productive and genuine discussions at the Meeting in Busan on issues unfolding today before our region- Northeast Asia.

With our best wishes.

Tsakhiagiin ELBEGDORJ
PRESIDENT OF MONGOLIA
Ulaanbaatar, August 21, 2009

Statement from Vyacheslav Shport, Khabarovsk Territorial Governor of the Russian Federation

Dr. Lee Jay Cho

Chairman of the Northeast Asian Economic Forum

Allow me to congratulate you on carrying out another annual meeting of the Northeast Asia Economic Forum. Already eighteen times, members of the scientific community, the business community, legislators and executive government officials from the countries of Northeast Asia have gathered to discuss issues of economic cooperation and institutional relations concerning this important region of the world. Over its almost 20 years of its existence, the Forum has transformed into a meaningful place at which actual problems of economic development of Northeast Asia are discussed.

The current 18th Northeast Asia Economic Forum is particularly relevant because of the deep economic crisis that is affecting the world economy and seriously creating difficulties for the countries of Northeast Asia. I am certain that the members of the forum will contribute significantly in finding paths to mitigate and overcome the consequences of this crisis.

I wish the 18th Northeast Asian Economic Forum good fortune in its work and its participants fruitful discussion.

V.I. Shport

Governor of Khabarovsk Territory

Russian Federation

***Keynote Address: “Global Economic Crisis and Northeast Asia”, Dr. SaKong Il,
Chairman & CEO, Korea International Trade Association; Chairman, G20
Summit Coordinating Committee, Office of the President, Republic of Korea***

Good morning, distinguished guests and ladies and gentlemen. It is indeed a great privilege for me to participate in this important and timely forum. I would like to thank Chairman Lee-Jay Cho and the Northeast Asian Economic Forum for inviting me. My purpose this morning is to put Northeast Asia into perspective of the current global financial and economic crisis.

After suffering from the worst crisis since the Great Depression of the 1930s, the global economy now seems to have stopped its free fall. In fact, the Northeast Asian economies appear to enter into a recovery stage, although anemic. China grew nearly 8% in the second quarter of this year which far exceeds consensus forecasts in the recent past. Korea's GDP growth also turned into positive in the first quarter of this year and it expanded by 2.3% in the second quarter to make it the fastest growth among all OECD economies. After five consecutive quarterly falls, the Japanese economy, too, reversed its course by posting a GDP growth of 0.9% during the second quarter.

You would agree with me to say that the global economic recovery seems to have started earlier than many predicted when the crisis began. Many experts thought that the current financial and economic crisis could be almost as severe as the Great Depression of the 1930s. Some economists described the current crisis as “depression-sized,” if not depression.

However, what made the current crisis different from the Great Depression of the 1930s, in my view, is definitely the global economic policy coordination, especially through the G20 Summit process.

Indeed, there are many factors blamed for causing the current financial and economic crisis. Some point to the lack of supervision and prudent regulation. They go as far as to say that the current crisis is caused by “the greatest regulatory failure of modern history.” Still others point to the excessive greed on the part of financiers and their excessive risk-taking and over-leveraging. Some others point fingers at low interest rates, exceedingly accommodating monetary policy, and global imbalances as culprits. Certainly, no one factor should take all the blame. These factors are all interrelated and they are in most cases causes and consequences of each other. Therefore, it is not easy to single out the main cause of the crisis. I am sure that numerous PhD dissertations, articles and books will be written on the subject in the coming years.

This forum is not the place to get into details of the causes of the current crisis. However, if I may, I would like to argue that global imbalances are the fundamental cause of the crisis. In fact, “rebalancing” is the topic most frequently discussed in the international forums nowadays.

Obviously, the discussion on rebalancing cannot leave out Northeast Asia because of its persistent current account surpluses. Naturally, to correct global imbalances it is argued that the Northeast Asian economies have to rely more on domestic demand. Its corollary is that American consumers cannot continue to spend beyond their means.

I am sure that this very issue of global rebalancing will have to be discussed at the forthcoming G20 Summit in Pittsburgh next month.

This leads me to draw your attention to the G20 Summit process in which I am closely involved since the first G20 Summit in Washington last November.

At the early stage of the current crisis, that is, when the US government dealt with the Bear Stearns problem in March 2008, not even leading experts then foresaw a severe global crisis in the making. Many of them put the problem aside as a national or a specific sectoral one. Similar views were shared by policymakers of most countries. Accordingly, their policy responses were mostly national without seeking international cooperation or policy coordination.

However, the Lehman Brothers bankruptcy in September 2008 enlightened the global community to come to terms with the seriousness of the crisis which requires concerted global responses. Consequently, leaders of the G7 and systemically important emerging economies gathered together in Washington on November 15, 2008.

At the G20 Summit in Washington, fortunately for the world, the leaders agreed to take coordinated policy responses. As I previously alluded to, these globally coordinated policy responses certainly contributed towards differentiating the current crisis from the Great Depression of the 1930s, preventing the current global recession from becoming another prolonged depression.

At this point, I just want to remind you of the fact that the world leaders did meet in London in 1932 with similar purposes but they failed to reach an agreement on exchange rate policies. You know the rest of the story of their competitive adoption of the “beggar-thy-neighbor” policy. The G20 leaders mindful of what happened then have been making special efforts not to repeat the same mistake of their predecessors by agreeing on concerted macroeconomic policies and a standstill and rollback of protectionist measures.

As you know, the three major Northeast Asian economies – Korea, China and Japan – are actively engaged in the G20 Summit process. Korea, in particular as a member of troika for the London Summit and the forthcoming Pittsburgh Summit, has been playing a leading role in setting the agenda and making sure to produce deliverables at both Summits.

With these G20’s endeavors, the world economy now seems to be bottoming out of the crisis, albeit fragile, as I previously mentioned. Considering the fragility of the recovery, I would argue it is still too early to talk about exit strategies at this stage. However, I do believe that the leaders in Pittsburgh should recognize the necessity of preparing well-sequenced exit strategies to be implemented in the coming months.

Instead, it is my view that the issue of rebalancing, which certainly has critical policy implications for the Northeast Asian economies, needs to be put on the Pittsburgh G20 Summit agenda. Fortunately, Korea, China and Japan already started efforts to rebalance their economies by stimulating domestic demand and positive outcomes are already being detected. I suppose one can say that the Northeast Asian economies are contributing to not only the global recovery out of the current crisis but also correcting the global imbalances. It is needless to say that as US consumers try to deleverage their balance sheets and save more, the Northeast Asian economies have to rely more on domestic demand.

Another achievement of the G20 Summit process so far is the reform of international financial institutions (IFIs), particularly their governance to reflect the changed economic realities of

today. As a result, the voice and representation of China and Korea at the IFIs will certainly be enhanced. It is also noteworthy to know that Korea and China are invited to join the expanded Financial Stability Board. It is another welcome outcome of the G20 Summit process. Yet another notable achievement is the leaders' agreement on merit-based, rather than nationality-based, selection of the heads of the IFIs.

At this juncture, I would like to say a few words regarding Korea's role in the G20 process as a member of troika. First of all, it was Korea's President Lee Myung-bak who made the standstill proposal in Washington which was unanimously supported by the leaders. Undoubtedly, the G20 leaders' agreement on standstill is considered one of the major achievements of the Washington G20 Summit.

Korea's effort continued into preparing the London Summit in April. We did our best in close coordination with the UK, the Chair country, to balance the agenda of globally concerted policy efforts to quickly overcome the current crisis and the future-oriented reform of the international financial architecture. Secondly, Korea exerted its leadership in making the G20 Summit not just a feast of rhetoric but a global policy forum for producing deliverables and implementable measures. Toward this end, Korea initiated effort to bring the IMF and the WTO into the process for their provision of expertise and analytical bases. Thirdly, Korea strived to bridge the gap between the industrialized and the emerging and developing world and to support the causes of these economies. Although Korea is a member of the OECD, it still has a first-hand experience of development and in our collective mind Koreans still have a vivid memory of absolute poverty and developmental pains. In any case, Korea made its utmost efforts to support the interests of non-G20 emerging and developing countries. The G20 leaders in London agreed on replenishing the IFIs with additional 1.1 trillion US dollars, primarily to assist emerging and developing countries.

But no matter how good the global community level cooperation may be, it would be wise for regions to have their own cooperative arrangements to supplement the global cooperative endeavors.

As we know well, it was not until the Asian financial crisis of 1997-98 that the countries in the region started to take concrete actions to institutionalize financial and economic cooperation among themselves.

After the Asian financial crisis, a number of initiatives of regional cooperation have been taken, either bilaterally or plurilaterally. For example, Korea, China and Japan decided to engage in feasibility study of a three-nation FTA. Korea-Japan bilateral FTA talks, currently stalled, were also initiated.

On the front of financial cooperation, immediately after the outbreak of the Asian financial crisis of 1997-98, the Chiang Mai Initiative (CMI) was agreed to be set up within the framework of the ASEAN+3. The CMI was initially established as a network of bilateral currency swap arrangements among the ASEAN+3 countries. The region also introduced the Asian Bond Market Initiative (ABMI) for developing efficient bond markets in Asia for the intermediation of their own savings in the region.

Recently, these efforts seem to gain some momentum. For example, Japan and Korea agreed to have working-level discussion on their bilateral FTA to pave the way for resuming formal talks. I just hope that in near future that Korea-Japan FTA talks will resume and be successfully

concluded with this endeavor. At the same time, China, Korea and Japan should also set the medium-term goal of establishing a three-country FTA perhaps with the vision to expand it into an East Asian FTA by merging with the Southeast Asian FTA.

A big stride has already been made regarding the CMI. The ASEAN+3 finance ministers who met in February and May this year decided to expand the CMI with its reserve currency pooling amounting to 120 billion US dollars, with the 80% contribution to be put up by the three Northeast Asian economies. The finance ministers of the three countries agreed to launch the multilateralized CMI within the year and to allow participating countries access to the CMI funds when needed from next year.

I am particularly delighted to see the CMI expanded and multilateralized. I for one have been on various occasions advocating for making the CMI evolve into a full-fledged regional monetary facility by first expanding and multilateralizing currency swap arrangements, provided its modus operandi will be made consistent with that of the IMF.

At this juncture, I must say that the progress made so far on the financial cooperation front is commendable. Going forward, however, I would like to propose again the establishment of a “financial research and training institute” which would carry out research for the regional financial stability, engage in training financial managers, supervisors, regulators, credit analysts, etc., and facilitate dialogues among policymakers of the region to share their valuable experiences of both successes and failures. Perhaps this institute could be incorporated into the CMI when it becomes a full-fledged regional monetary facility.

There are other areas the region can have closer cooperation, e.g. infrastructure development, green growth, energy source development and logistics among others. The establishment of a Northeast Asian development bank which has been consistently advocated by this very forum may have direct relevance in facilitating cooperation in these areas.

Before I conclude, I just want to emphasize my view that Northeast Asia will continue to remain the most dynamic source of the global economic growth throughout coming decades. Therefore, I would say that closer cooperation and policy coordination in this region not only contributes to the region’s growth and prosperity but also to a sustainable and balanced global growth and prosperity.

It is my sincere hope that the severe current global crisis will provide further impetus to have a closer regional cooperation and for the region to take a global leadership for a sustainable and balanced global growth. I am very sure that this forum will continue to facilitate the region’s stronger cooperation and closer policy coordination process.

Thank you.

Session I: Cross-Border Regional Cooperation: Transportation and Logistics

1. New Regionalism across Korea-Japan Strait: Cross-Border Region between Busan and Fukuoka

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I. Introduction

Regionalism is a product of time. The paradigm for regional development changes by time. The goal is simple and clear but the ideology and the model is differed by time and environment. The 21st century observes a new regionalism against an old regionalism in various characteristics (Table 1). The power and role of nation state declines and the function of regions is augmented. In this case region means not only sub-regions under statehood but also trans-national entities like the EU and other forms of organization. In old regionalism a power of centripetal forces like security and macro-economy is stressed. In new regionalism a power of centrifugal force comes into operation and openness of region is emphasized (Figure 1).

The above argument recently resulted in the development of the mega-city region (MCR) and MCR is a new key word of current urban development. Another important product of new regionalism is the concept of cross-border region (CBR). As the power of central government weakens cross border regions tend to seek more trade and cooperation in order to maximize economic benefit and to pursue their own development objective. Europe and other regions in the world have witnessed the formation of CBR in various forms. For example, the EU implements strong CBR policies under the program of INTEREG to assist the forming of CBRs (Table 2). The INTEREG is a regional policy to facilitate the economic development of peripheral regions.

CBR is rather a new program in Northeast Asia region because of geo-political situation in the region when we define the region as Korea, China, Japan and Russia Far East. Nevertheless a cross-border economic cooperation program started from the early 1990's in the Tumen river area and three regional economic cooperation programs including Yellow Sea Rim, East Sea (Japan Sea Rim) and Korea-Japan Strait are suggested (Kim 2005, for example). All these efforts are a result of new regionalism.

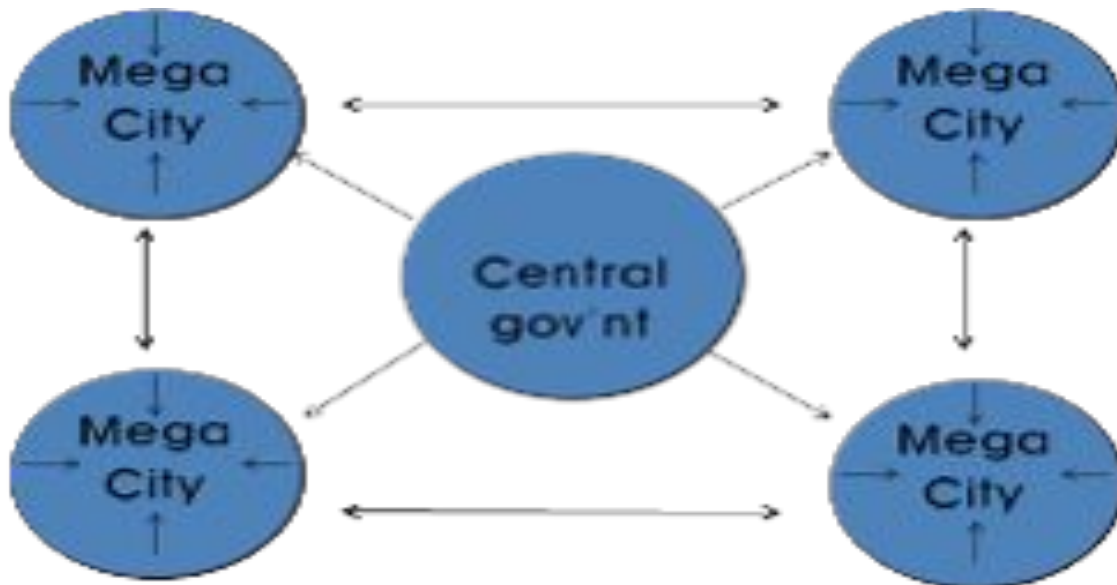
This paper discusses a cross-border region between Busan (Southeast Korea) and Fukuoka (Kyushu). It is the first real program of CBR in Northeast Asia (NEA). A theoretical consideration on the CBR is discussed first. The background and condition of Busan-Fukuoka (Bu-Fu) CBR is introduced next. The development of Bu-Fu CBR is introduced next. Suggestions and implications as a conclusion follow.

<Table 1.1>A Rise of New Regionalism

	Old Regionalism	New Regionalism
Action space	International region	Transnational region
Actor	States and international bodies (collective characteristics)	Non-state actors (collective, social, local, and individual characteristics)
Goal	Concrete cooperation in security and economy (centripetal and protective characteristics)	Comprehensive and multi- dimensional societal procedures (centrifugal and open characteristics)
Characteristics of international order	Cold War and bipolar system	Globalization and multi-polar System
Characteristics of governance	Top-down, policy-led Processes	Bottom-up, market oriented processes

Source: Based on Lee Chul-Ho (2007), p. 100.

<Figure 1.1>: Mega city region and its relationships



II. CBRs in Globalized Economy

In the process of economic spatial reshaping, cities and regions play leading roles. Their alliance and collaboration armed with centrifugal force have turned into a new development strategy that promotes economies of scale and scope. Its domestic process is a force of agglomeration, while its overseas process amounts to the formation of super-agglomeration, that is, cross-border region (CBR). This double regionalization, both internal and external, is in effect the two faces of microscopic changes of spatial use within a macroscopic, integrated economy such as the European Union.

In this context, the scheme of “5+2 economic regions (or wide economic region)” envisaged by the new administration of Korea is highly significant. Above the wide economic region a super-structure named trans-economic region is suggested. This concept could be matched a cross-border megacity region (MCR). As far as it aims at a regional economy which is able to cope with global competition, it has the potential to develop into a formation of CBR. In particular, the creation of Dongnam (Southeast) Economic Region around Busan and its resultant cross-border cooperation with Fukuoka and Kyushu in Japan are expected to be a touchstone of the new administration’s regional policy. Cross-border cooperation between Busan and Fukuoka, which is dramatically accelerated recently, is the first step toward creating a Korea-Japan Strait Economic Zone (KJSEZ). The proposed alliance between the two cities has signaled the beginning of a very difficult task requiring much effort and time in order to realize a cross-border economic region.

< Table 1.2> CBRs in Europe and Asia

	Europe	East Asia
Name	Euroregion: EUREGIO, Transmanche, Øresund, etc.	Local Economic Zones: South China Economic Zone, China-Taiwan Economic Zone, Yellow Sea Rim Economic Zone, East Sea Rim Economic Zone, Korea-Japan Strait Zone Growth Triangles: SIJORI Region, Tumen River Region
Characteristics	Total opening of borders	Selective opening of borders

	Product of supranational policy	Product of an international agreement or open door policy
	Policy plays a key role	Markets play a key role
	Top-down governance Structure	Bottom-up governance structure

1. CBRs in Northeast Asia in Early Days

CBR, spotlighted in East Asia in the 1990s, has been understood in diverse ways. Watanabe Toshio (1991) first used the expression "local economic zones" and viewed them as a comprehensive outcome of external eruptions driven by economic motives of regional countries having different ideologies. A new economic map of East Asia was being drawn by local economic zones, where the Newly Industrialized Economies have played a main role.

Robert Scalapino (1991) called them "natural economic territories," where the international division of labor is available between production elements beyond the barrier of border line and ideology. Ohmae Kenichi (1993; 1995) viewed them as "region-states." With the understanding that a nation-state is not proper for managing the nomadic forces of capitalism such as investment, industry, technological information and consumer trends, he suggested the region-state as an alternative unit for economic development and cooperation for the information age.

Since the 1990s regional economic cooperation along the Yellow Sea Rim has been suggested, and cities in this area tried to cooperate as an expression of willingness of economic cooperation (Kim 2005). The format was mostly a bilateral agreement between two cities. Kitakyushu initiated a meeting of six cities of Japan, Korea and China to promote cooperation in the fields of logistics, environment, manufacturing and tourism. The meeting expanded to ten cities afterwards – Kitakyushu, Fukuoka and Shimonoseki in Japan, Busan, Ulsan and Incheon in Korea, Tianjin, Dalian, Yantai and Qingdao in China. And the name of meeting was changed to Organization of Northeast Asia Development. However, this meeting is not a multilateral CBR by any means.

Pearl River delta (PRD) could be a case of CBR. But all regions are in China's territory, even though Hong Kong and Macau keep different social systems.

The Tumen River free economic zone connecting North Korea, China and Russia could be a true CBR in NEA. But the project has been stalled for twenty years by North Korean unwillingness. Even if it had succeeded to be a CBR the project might have been a national project instead of regional cooperation in essence.

2. CBRs in Europe

Europe promotes microscopic regionalization centering on CBRs under the goal of "Europe of Regions" in order to solidify macroscopic regionalization toward a kind of "United States of

Europe.” While macro-regionalization is the process of state-centric governance based on supranationalism incorporating nations, micro-regionalization is the process of polycentric governance based on trans-nationalism led by non-state actors (companies, local governments, NGOs, epistemic community and individuals). The latter is understood as the new regionalism.

According to the Association of European Border Regions, there are about 115 CBRs in Europe. The proliferation of CBRs in Europe is natural. Given that regional integration is completed when border lines disappear, CBR is the best way to remove border lines. As a matter of fact, all of the EU’s borders and the areas surrounding them are changing into CBRs.

The weakening of border lines provides significant meaning to local actors. A border line becomes a means of development for the cities and regions in the border areas, while it is a target of invasion or ignorance for transnational actors at the global level. Since the centrifugal force of local actors is basically related to economic development projects, now “a border line is a passing point around which an exchange space is created (Postel-Vinay 1996, 210-211).”

3. CBRs in Other Areas

CBRs are found in many border areas throughout the world. As Scalapino (1991) defined, they could be natural territories beyond national boundaries. In order to realize economies of scale and transaction cost. We can find CBRs in all continents (Perkman 2004). Most of them, of course, are adjacent areas sharing common border lines of surface or river. Sometimes the border is separated by sea like Oresund CBR of Denmark and Sweden (Lim 2009).

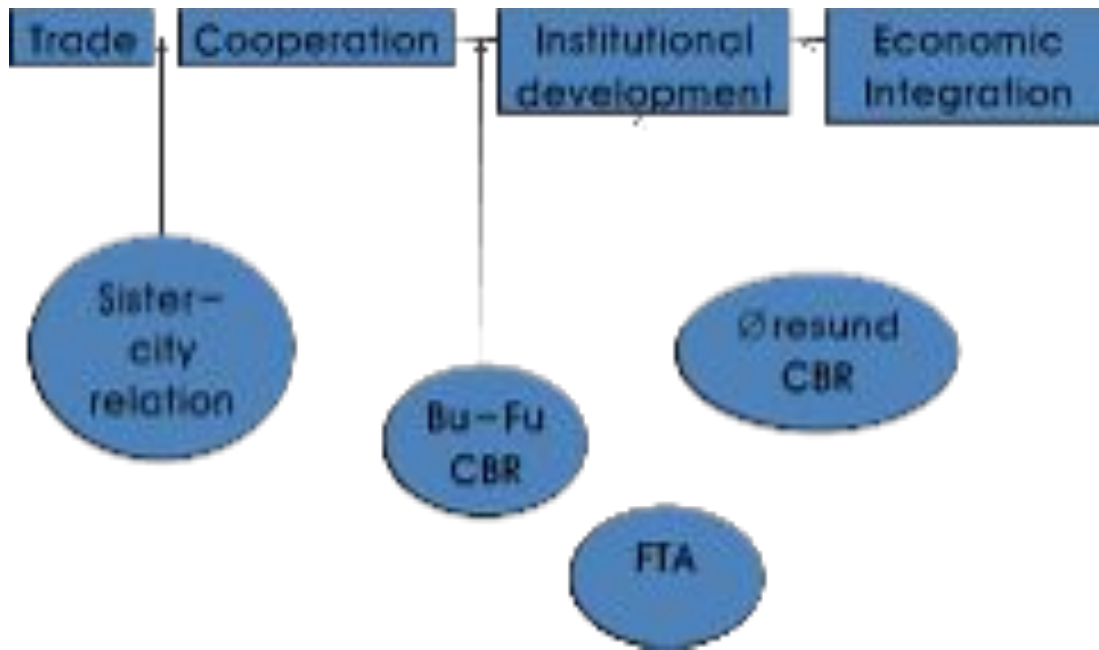
The CBR discussed in this paper is rather an unusual case. Busan and Fukuoka is separated by a sea of 200 Km. Until recently a visa was required to cross the border. However, the geo-political and geo-economic condition has changed significantly. Transportation technology made the distance not very far as explained in the next chapter. In the past Korean economy was far behind Japan so that Korea established free export zone to attract Japanese manufacturing companies in 1960s like the case of the US-Mexico border. Korean economy has grown to a level to seek the economy of scope and economy of scale and other benefits of cooperation with Japan. On the other hand, Japanese economy and the economic situation in Kyushu seems to have lost the vitality it used to have in the past. The visa was abolished between Korea and Japan to remove an institutional barrier for cooperation. China has surged as a big power in NEA even though its economy is in the stage of fast growing. The environment for regional cooperation and economic integration in NEA seems to be maturing. For real economic integration there are many more to solve including labor market in the future. But the initiation of Busan to form a CBR with Fukuoka and Kyushu is an important step.

4. Development Stage of CBR

If we define the development stage of Bu-Fu CBR it will still be in the beginning stage as shown in Figure 2. A trade between countries and regions is the very beginning stage. An institutional arrangement like sister city relations between foreign cities could be the next step. An institutional development like FTA between countries will be the next stage. Economic integration like EU will be the last stage before becoming a unified state or federal state. The present stage of Bu-FU CBR is in between cooperation and institutional development. The

Oresund CBR is quite an advanced case with favorable conditions sharing common labor market and welfare system in both countries.

<Figure 1.2>: Development Stage of CBR



III. Busan-Fukuoka Cross-Border Region

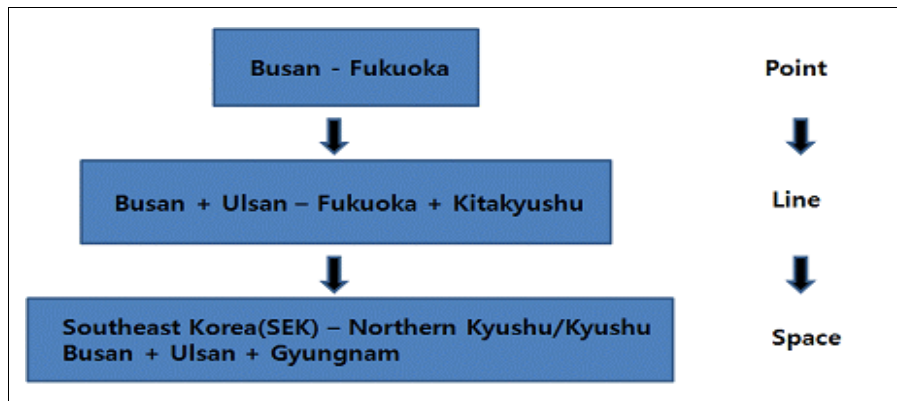
<Figure 1.3>: Busan-Fukuoka (Bu-Fu) CBR



1. Geo-economic Condition of the Korea-Japan Strait Economic Zone (KJSEZ)

The regional economic integration across the Korea-Japan Strait is conceived as a step by step process in terms of geographical range. Figure 4 indicates the spatial process of the formation of the KJSEZ developing from point to space.

<Figure 1.4>: Spatial layers of economic integration of KJSEZ



If we consider Southeast Korea (SEK) and Kyushu as one country, its population would be the 45th highest worldwide and its area 122nd largest worldwide, and its GDP would be the 17th

highest in the world. This exceeds Taiwan and is similar to the Netherlands. In 2005, the combined gross product of the KJSEZ was 1.4% of the world GDP. Thus the KJSEZ as a region is in the top 1% of the world economy. In effect, many manufacturing industries are concentrated in the KJSEZ, where materials industries (steel, petrochemical) and assembly and processing industries (cars, semiconductors, general machineries, electric machineries and shipbuilding) are clustered in this region.

The global enterprise has arranged a large number of major industries on a wide scale: Nippon Steel and POSCO in the steel industry; Toyota Motor Corporation in Kyushu, Nissan Motor Co., Hyundai Motor Co., and Renault Samsung Motor Co. in the automobile industry; Sony, Kyocera, Toshiba and LG Electronics in the semiconductor and electric machinery industries; and Mitsubishi Heavy Industries Co., Hyundai Heavy Industries Co., Samsung Heavy Industries Co., Daewoo Heavy Industries and Hanjin Heavy Industries & Construction Co. in the shipbuilding industry.

Between SEK and Kyushu, interspersed with the factories of their similar enterprises, both regions have the potential to become leaders in the global manufacturing industries in the future through mutual cooperation, trade, technical exchange and investment exchange.

However, the direct investment of the enterprise and the outreach of commercial establishments have been relatively inactive so far. It is difficult to say that vigorous exchange is taking place. The reason for this is that most Japanese enterprises have been focused on China and Southeast Asia, due to the dramatic increase in labor costs in Korea after 1987. Among the Korean enterprises that expanded into Kyushu the majority of them are in the travel industry of the transportation industry, such as airline companies. From the point of view of Korean enterprises, Kyushu market has been less appealing than other major cities of Japan. However exchange of human resources has been very active in this area.

<Table 1.3> General Economic Features of KJSEZ

	Busan	Fukuoka	SEK	Kyushu
Area	763 km ²	340 km ²	12,342 km ²	42,177 km ²
Population	3,620,000	1,350,000	7,940,000	13,350,000
GRDP	48,849million dollar	71,710million dollar	119,321 million dollar	407,300 million dollar
Industrial Structure	Primary 1.0% Secondary 18.0% Tertiary 81.0%	Primary 0.1% Secondary 15.2% Tertiary 84.7%	Primary 2.4% Secondary 41.6% Tertiary 56.0%	Primary 2.4% Secondary 21.3% Tertiary 76.3%
Major Industries	Harbor, Logistics, IT,	Automobile, Foods, Robot,	Busan: Harbor, Logistics,	Fukuoka: Automobile, IT,

	Visual Arts, Tourism, Shipbuilding parts machinery, etc.	Recycling, IT, Semiconductor, Bio, Environment etc.	Machineries Ulsan: Automobile, Shipbuilding, Chemical Industry Gyeongnam: Machine parts, Aerospace	Bio Kitakyushu: Steel, Machine, Ceramics Nagasaki: Shipbuilding, Electron, Machinery Kumamoto: Electricity, Foods, Metal
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2. Assets and Opportunities of the KJSEZ

1) 'Bottom-up regionalization' and intercity cooperation

Major cities and regions of the KJSEZ form multi-layered interurban networks. First, the East Asia City Conference, which started with the Yellow Sea Rim Six City Conference in 1991 and expanded in 2000 to include 10 port cities (Dalian, Qingdao, Tianjin, Yantai, Incheon, Busan, Ulsan, Kitakyushu, Fukuoka and Shimonoseki), grew into the level of a ‘city alliance’ by establishing the Organization for East Asian Economic Development aimed at forming the Yellow Sea Rim Economic Bloc. Second, the Local Government Meeting for the Korea-Japan Strait Zone, established in 1992 between four prefectures of Northern Kyushu (Fukuoka, Saga, Nagasaki and Yamaguchi) and one metropolitan city and three provinces in Korea’s southern coast (Busan, South Gyeongsang Province, South Jeolla Province and Jeju Island), boasts of a competitive proximity. Third, the Northeast Asia Regional Government Association, with the participation of six Northeast Asian countries (Korea, North Korea, China, Mongolia, Russia and Japan) of 40 cities and provinces, is a city club established on transverse logic rather than proximity.

Bottom-up regionalization centering on urban networks is the basis for "governance without government." Although the interurban cooperation is focused on human and cultural aspects rather than economic aspect, it may contribute to nurturing a sense of community with the potential to reach a regional norm, which compensates the limits of East Asian formal regionalism lacking inter-government oversight. Confidence is a cornerstone by which such a cross-border cooperative body can adopt an open-door policy and maintain a flexible stance, thereby eventually forming a governance structure loyal to cross-border agenda (Perkmann 2004; Grix 2001).

2) Excellent proximity and development of logistical networks

The KJSEZ is located on a platform that could approach two local economic zones (Yellow Sea Rim Zone and East Sea Rim Zone) and two development axes (Seoul-Busan and Fukuoka(Kyushu)-Tokyo). The region's proximity, although it is rather too small to achieve complementarities compared with other local economic zones, provides advantageous assets such as reducing logistics costs.

The ultimate goal of the cross-border region is to form an integrated local economic zone or a cross-border free trade area. In such a case, one of the suggested specific strategies is to establish network-linking free economic zones. Unlike the Yellow Sea Rim Economic Zone, the KJSEZ may make it relatively easy to create an integrated, cross-border free trade area through spatial relocation of industries because the region has relatively well-developed transportation and logistics networks and symmetrical, free economic zones. Besides, it could be a good factor for possible systematic integration if key trade harbors can use their existing bonded functions to lead a localized network of free zones because the East Asian CBRs themselves have a vague spatial scope, and it is difficult to establish a legal status for such an area (Kim et. al. 2005, 473-483).

<Figure 1.5>: The passenger transport network across the Korea-Japan Strait

	Line	Times per week	Total
Ferry	Busan-Hakata	14	26
	Busan-Moji	12	
Express Boat	Busan-Hakata	68	80
	Busan-Tsusima	12	
Airplane	Busan-Fukuoka	28	128
	Jeju-Fukuoka	6	
	Seoul-Fukuoka	64	
	Seoul-Nagasaki	6	
	Seoul-Kumamoto	6	
	Seoul-Oita	6	
	Seoul-Miyajawa	6	

		Seoul-Kagoshima	6	
	Total	Busan/Jeju-Kyushu	140	234
		Seoul-Kyushu	94	

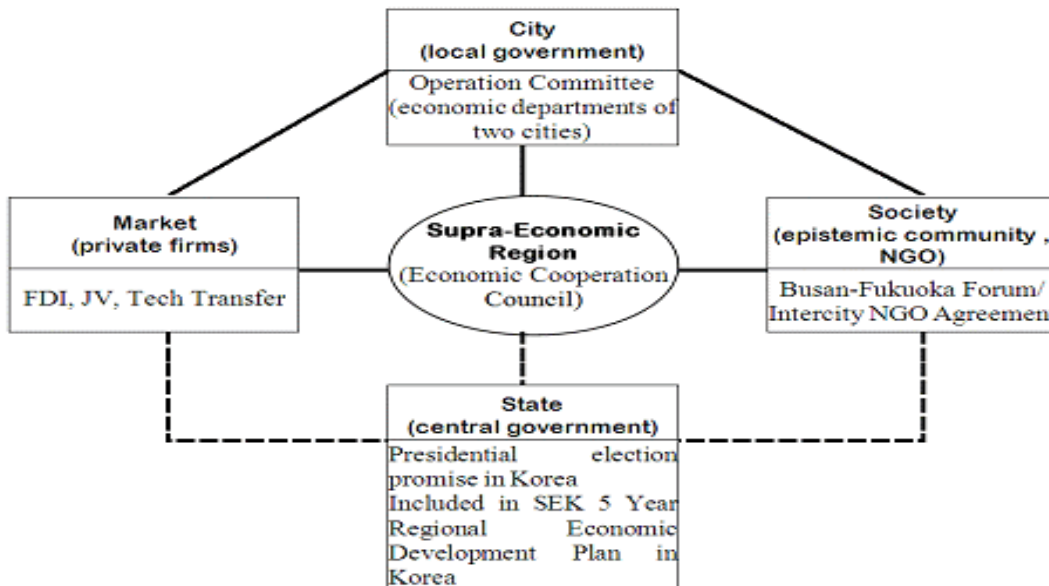
Source: Korea-Japan Joint Research (2008)

3) Soft Infrastructure and Private Sector Cooperation

Northeast Asian new regionalism will make progress through an association of local government-private enterprise-epistemic community. Private enterprise and the epistemic community are two factors of soft infrastructure. In fact, the soft infrastructure of the KJSEZ is most advanced, as the contemporary relationship between the two countries has made progress.

On the one hand, inter-business exchanges in the KJSEZ have increased through the Korea-Japan (Kyushu) Economic Exchange Meeting established in 1993 and the Meeting on Exchange of Economy and Technology in the Yellow Sea Rim, which started in 2001, although the central governments play a key role. The Economic Cooperation Council of the Busan-Fukuoka Region, established on October 20, 2008, is a real cross-border cooperation body in NEA. At the inaugural meeting, the two cities agreed to hold a commemorative forum to promote joint research for the formation of a cross-border region and to facilitate economic exchanges. They also organized the Asian Gateway 2011 Committee and agreed to promote a joint tourism project for organizing the Northeast Asia Tourism Exchange Bloc (Busan Daily Oct. 21, 2008).

<Figure 1.6>: Governance structure of the Busan-Fukuoka CBR



On the other hand, the Busan-Fukuoka Forum, which began in 2006, is a civilian coalition set up by 11 leaders from the local private sector in each city. The forum was established with the purpose of reviewing and proposing policies in a wide range of sectors to cement friendly and

cooperative relations between the two cities. The forum also became a member of the Economic Cooperation Council of the Busan-Fukuoka CBR. Currently, a consortium of 24 universities in two cities is being established as a bridgehead for human resource exchanges between the two cities.

In addition, the Busan Civic Group Council, consisting of 42 civic groups, and the Nippon Korea Citizen Exchange Network Fukuoka, joined by 29 civic groups in Kyushu, signed the Busan-Fukuoka (Kyushu) NGO Agreement in October 30, 2008. The civic groups of the two countries intend to organize the Busan-Fukuoka Economic Region by setting up a citizen exchange network, running Korea-Japan culture experience programs, expanding home stays and exchange programs for students, and promoting the establishment of a large-scale citizen exchange center to support systematic exchanges.

IV. Challenges for the Proposed Bu-Fu CBR

1. Advancement of Urban Networking and Institutionalization of Cross-Border Cooperation

Bottom-up regionalization includes both the characteristics and merits of cross-border cooperation in Northeast Asia. However, ‘informal regionalization’ carried out without ‘formal regionalism’ faces many limitations. The success of cross-border governance between localities depends on the advancement of urban networking. In order to improve urban cooperation, it is necessary to solve some problems, such as establishing an organizational base, setting common objectives and securing financial and legal autonomy while enhancing networks of information, transportation and innovation (Lee 2006, 338 Lim 2000). Nonetheless, international cooperation between cities can hardly go beyond information exchange and friendship, the first stage of cooperation (Douglass 2000), because high-level cooperation generally surpasses the jurisdiction of the local government, as with legislative cooperation.

In this sense, we have to review the meaning of “light institutionalization” of the Scandinavian Øresund CBR. The reason that cross-border cooperation works efficiently despite weak institutionalization is because the EU exists as a supranational government. However, the KJSEZ tells a quite different story owing to the absence of a supranational authority in Northeast Asia. Markus Perkmann (2004) thinks that if local governments participate in light institutionalization with a certain level of autonomy, “light institutions” can be a powerful means equivalent to formal institutions. In this case, however, the existence of supranational programs is absolutely needed. He argues that although supranational support is not a cure-all measure for encouraging cross-border cooperation, such support is important because it justifies cross-border cooperation activities.

In this context, the reason why logistical cooperation suggested by the Organization for East Asian Economic Development could be evaluated as a successful example for cross-border governance is because it drew supranational support through the China-Japan-Korea Ministerial Conference on Maritime Transport and Logistics, thereby securing legal and financial support for inter-local logistics cooperation. The Korea-Japan Supra-Economic Region should also make efforts to induce cooperation from the central government to secure a legal foundation for cross-border cooperation as seen in the EU case. One of the methods for obtaining legitimate cross-border cooperation without cross-border regime equivalent to governmental authority is to strengthen cross-border cooperation in the social sector. It is efficient to support exchanges of

civic groups of both regions, and, through this, spread a sense of identity of cross-border cooperation among citizens.

2. Seeking Complementarities and the 'Economy of Labor Market'

If the advantage of the Bu-Fu CBR is proximity, the demerit is that the region is somewhat too small to enjoy the gains which complementarities provide. In some respect, Busan-SEK and Fukuoka-Kyushu are similar to each other in terms of industrial structure, and thus, they may have an aspect of competition rather than complementarities. But, the pattern of division of labor across the strait, characterized by the R&D of a Japanese mother company and the production of a Korean subsidiary either in Korea or the third countries, has been changing (Han 2004; Kim et. al. 2005, 195). A new trend of developing and producing new products by branch firms is observed in the semiconductor equipments and automobiles/parts industries. This intensifies the necessity of CBR cooperation and integration. In the case of Bu-Fu CBR the expansion of consumer market including cultural activities could be a new horizon removing the barrier set by the national border. As an example the professional baseball teams of both cities have held a friendship game in turn during summer off-season attracting many spectators.

According to a survey conducted in 2004, there is the widespread recognition that supra-economic regional cooperation linked to the Korea-Japan FTA is necessary for jointly entering the markets of third countries such as China and the ASEAN (Kim et. al. 2005, 153-188). As an efficient way of cross-border industrial cooperation, it is good to make the most of proximity to realize the economy of scale and seek new complementarities by expanding horizontal division of labor. Low logistics costs and geographical and technical proximity make up the competitiveness of the KJSEZ.

In strategic industries, the two regions have in common the automobiles, environment, bio tech, and robotics industries (refer to Table 4). The fields expected to have a synergy are the industries of auto parts, environment, IT, and design. Particularly because the automobiles and relevant parts industries are clustered in Fukuoka Prefecture, horizontal division of labor with the SEK region could expand. Industrial cooperation in the KJSEZ could move toward a combination of ideas, manpower, capital and technology and the expansion of markets, and, through this, it could be possible to enter third countries together (Keum 2008, 118-224).

Furthermore, it is also a method of creating new complementarities to pursue 'economy of labor market' by cultivating and exchanging a skilled workforce and matching it with regional demand, which was adopted by the Øresund Region. To do this, industry-university cooperation should be carried out beyond national borders. Also, it would be meaningful to find a cross-border business model based on an extensive survey of specific forms of cooperation between enterprises of the two countries that have entered the other side of the KJSEZ.

It is the tourism industry that most easily utilizes the advantages of proximity. The conditions for cooperation and a base for the tourism sector have been well established, but the physical, social and institutional foundations that support the facilitation of exchanges also influence this (Lim 2006).

The establishment of hard infrastructure for exchanges is a necessary condition for forming a supra-economic region. To do this, expanding open skies and low-cost aviation, increasing marine transportation and reviewing an undersea tunnel could be considered. Some way to

expand soft infrastructure for exchanges and cooperation should also be found. In addition to institutional approaches, including simpler CIQ procedures, the approaches of strengthening industry-university cooperation, constructing and developing a knowledge database, solidifying a consortium of local universities, and gaining a better understanding of the languages of both regions could, by and large, contribute to facilitating cross-border cooperation.

V. Conclusion

The bottom-up character of East Asian CBRs makes market-civilian forces a key player in the process of post-sovereign spatial transformation around KJSEZ. Therefore efforts should be directed toward the construction of a soft infrastructure for exchanges and cooperation. To do this, it is necessary to internalize cross-border cooperation in the various decision-making processes in regions. It is also indispensable to induce as many decision makers as possible to participate in cross-border projects. As for local governments, the cross-border programs that have been promoted by the existing East Asia City Conference and the Korea-Japan Strait Coastal Governors' Meeting, etc., are suggested to be activated more in addition to the new organization like BU-Fu Economic Cooperation Council.

At present, the biggest limitation faced by cross-border cooperation is that it has a weak base for legitimacy. Although it is premised that "input legitimacy" is secured by the framework of local government-market-civilian governance, the absence of a central government weakens "output legitimacy." Transnational initiatives of local actors should be supported by financial autonomy and legal and institutional legitimacy.

The future development of CBR across the Korea-Japan Strait depends on three dimensions. Firstly, it is necessary to create a specific governance structure of a supra-economic region. On the initial stage, light institutionalization can be a starting point, but a support from the central government strong enough to provide a base for legitimacy should be premised. Secondly, another problem is to induce horizontal strategic integration among various governance entities. It is necessary to figure out a method for adjusting the interests of participants with the single objective of CBR integration. Thirdly, the issue of spatial institutionalization of the power of geo-economic and geo-cultural integration in Northeast Asia, where the force of geopolitical disruptions is strong, eventually triggers the problem of political mobilization. The issue of forming a CBR is a re-territorializing process involving the creation of a cooperative space for cross-border forces (market and society) based on networks, and this requires a process of unprecedented political discussion among actors whose countries give priority to territorial uniformity.

Eventually, the Bu-Fu CBR and KJSEZ will be created through the interactions of these three dimensions. In this context, it is necessary to closely review dynamic correlations between the dimensions, while having infinite imagination for the future of the Bu-Fu CBR and KJSEZ. And this project should be expanded to the Yellow Sea Economic Integration including regions in Yellow Sea Rim.

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2. Development of Intermodal Land Transport in Asia

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Infrastructure Development Institute – Japan (IDI-Japan)

Abstract

The demand of international intra-Asian trade and transport will continue to grow and its solid growth is expected to be much higher than the world-wide average growth. In order to cope with future rapid growth of trade and transport, efficient road and railway networks are essential. But in actuality, many roads and railways in the region are still poorly managed and badly maintained. These infrastructure networks should be innovated and upgraded from regional points of view. In addition to the development of these hard infrastructures, a number of inter-modal interfaces are required to secure efficient inter-modal supply chain connecting rails and/or roads to sea ports.

Thinking beyond borders in making up national plans and policies and coordination among countries' agencies are required.

Introduction

In order to promote economic growth in North-east Asia, efficient transport systems should be established. Present status of land freight transport systems is not sufficient enough for future demand. This paper refers to the present status of road and railway infrastructures in the region and several issues and challenges which we have to face.

Traffic Demand and Land Transport Infrastructure

According to the figure showing estimated full container trade volume in 2005 and 2015 of each of the major trade routes related to Asia, it is expected that the demand of international intra-Asian trade and transport will continue its sustained solid growth of higher than 10% per year, much higher than the world-wide average growth of 7.6%, during the period up to 2015. This means that the volume of container trade will increase by almost 3 times in 10 years. Trans-pacific trade is expected to grow at a somewhat slow rate of around 7%. This estimation can be verified by the latest records showing that Japan's trade with China including Hong Kong in 2004 surpassed the trade volume with its long lasting top partner, the United States, or the fact that international container transport performance using the Trans-Siberian Railway (TSR) in 2004 was 3.2 times the level in 2000. Trade between Asia and Europe will show a strong growth of higher than 9% per year overtaking the trans-Pacific trade of 7%. These figures show the importance of Asian land transport infrastructure development.

<Figure 2.1>: Future container trade



The regional inter-modal land transport networks mainly consist of the Asian Highway (AH), the Trans-Asian Railway (TAR) and transport facilitation. These two networks have been designated in the framework of the UNESCAP program with criteria for identification of routes which provide access to;

- Capital-to-capital links
- Industrial and agricultural centers
- Sea, river and air ports
- Container terminals and depots
- Tourism attractions

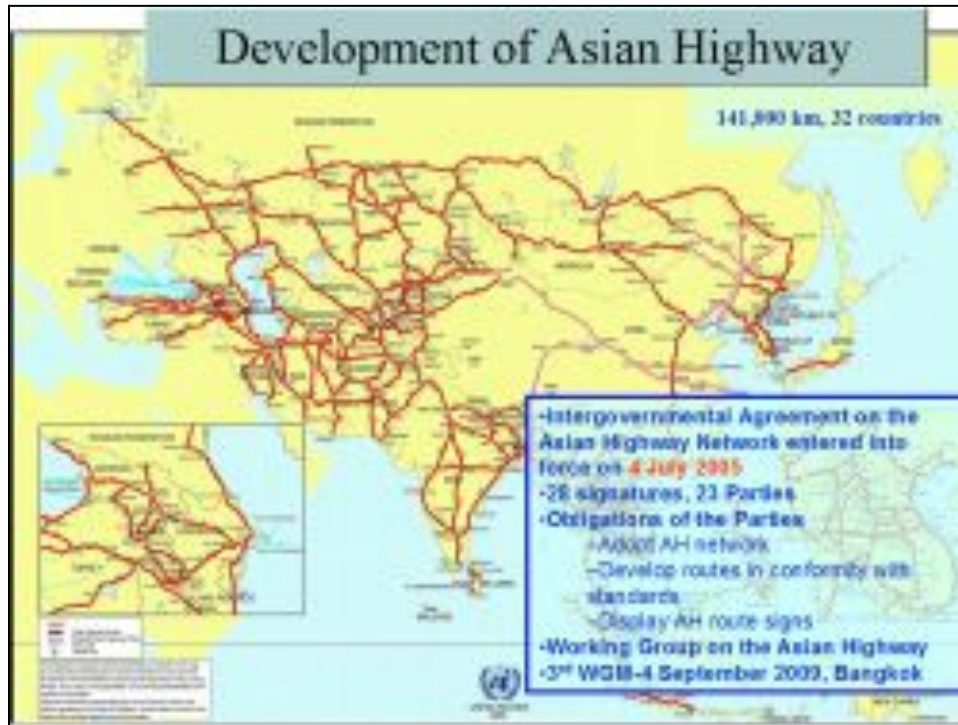
Although it is well understood by ESCAP member countries that maximization of the use of existing infrastructure under well-coordinated development plans is necessary, there are still lots of issues and challenges in these land transport networks in the region.

Many roads and railways are poorly managed and badly maintained. Lots of works for upgrading and good maintenance are required. According to the estimation of expert meetings of the UNESCAP, the investment requirement accounts for 18 billion USD for 121 AH priority projects, 28 billion USD for 8,300 km TAR missing links and 51 billion USD for container terminals. Inadequate funding creates the gap between requirements and allocations. In order to cope with the rapid and massive growth of international trade and transport in Asia, mobilization of not only public funds but also private ones is required. Worldwide experiences show that road users or traders are willing to pay for better quality roads and cross-border facilities.

Asian Highway Network

The Asian Highway Network now comprises over 141,000 km of roads passing through 32 member countries.

<Figure 2.2>: Development of Asian Highway



The Intergovernmental Agreement on the Asian Highway Network was signed in 2004 in Shanghai, and entered in force in July 2005. Up to now, 28 member states have signed the Agreement and 23 countries including China, Japan, Mongolia, the Republic of Korea and Russian Federation, are Contracting Parties to the Agreement. The DPRK has not signed yet. One of the main obligations of the Contracting Parties to the Agreement is to adopt the Asian Highway network as a coordinated plan for the development of highway routes within the framework of their national programs.

The North-east Asian sub-region, which comprised of China, the DPRK, Japan, Mongolia, the Republic of Korea and the Russian Federation, currently has some 51 thousand kilometers, more than 1/3 of the Asian Highway. China and the Russian Federation account for the largest numbers of kilometers and Mongolia and Russian Federation have long non-paved roads to be innovated or upgraded.

<Figure 2.3>: Physical status of the AH network in north-east region

Physical status of the AH network in northeast region(2007)

Unit: km

Country	Total length	Paved		Non paved	Ferry	N/A
		Two Lanes or More	One Lane			
China	26,198	26,166	32	0	0	0
DPRK	1,462	507	0	220	0	735
Japan	1,108	1,108	0	0	0	0
Mongolia	4,286	1,298	0	2,988	0	0
Rep. of Korea	907	907	0	0	0	0
Russian Fed.	17,046	15,295	0	1,751	0	0
Region Total	51,007	45,281	32	4,959	0	735
AH Total	141,244	129,536	1,523	9,240	202	735

Source: Asian Highway Database 2007

Trans Asian Railway Network

The Trans Asian Railway (TAR) is also a project of the UNESCAP. The TAR routes in operation cover a distance of 114,000 km in 28 countries. One of the main corridors will connect China, to Korea, Mongolia, Russia and Kazakhstan. The TAR Network Agreement was signed among 22 related member countries in 2006, and came into force in June 2009 with 8 Contracting Parties.

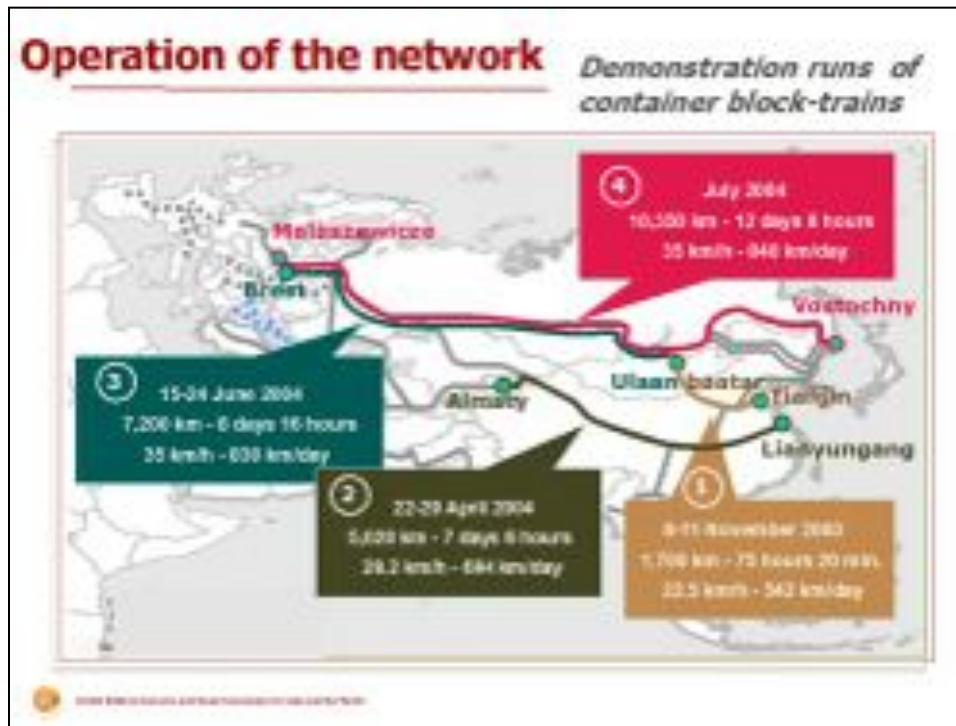
Trans-Siberian Railway covers much of this route and currently carries large amount of freight from Northeast Asia to Moscow on the rest of Europe. Due to the political problem with North Korea, freight from South Korea must currently be shipped by sea to the ports of Russia (Vostochny, Vladivostok, Nakhodka) to access the route.

In this project, there are two crucial infrastructure related issues to be considered. One is the existence of so-called “missing links” making end-to-end movements impossible on some of the linkage. They are in South-East region and Central and South-West region with the length of 8,300 km.

The other is the existence of break-of-gauge points along specific linkages. A break-of-gauge is where a line of one gauge meets a line of a different gauge. As for the Northern Corridor which links Europe and the Pacific, there are 3 breaks-of-gauge at the Polish-Belarusian border, the Kazakhstan-Chinese border and the Mongolian-Chinese border. Mechanized facilities would be built to move shipping containers from train to train at the break-of-gauge. In addition, the “software” aspects of transport should be reviewed with particular attention to tariff related issues and the institutional framework pertaining to the passage of goods across borders.

In order to check and find issues or challenges of railway transport, a series of demonstration runs of container block-trains were conducted by using TAR north corridor in 2003 and 2004 as a project of UNESCAP.

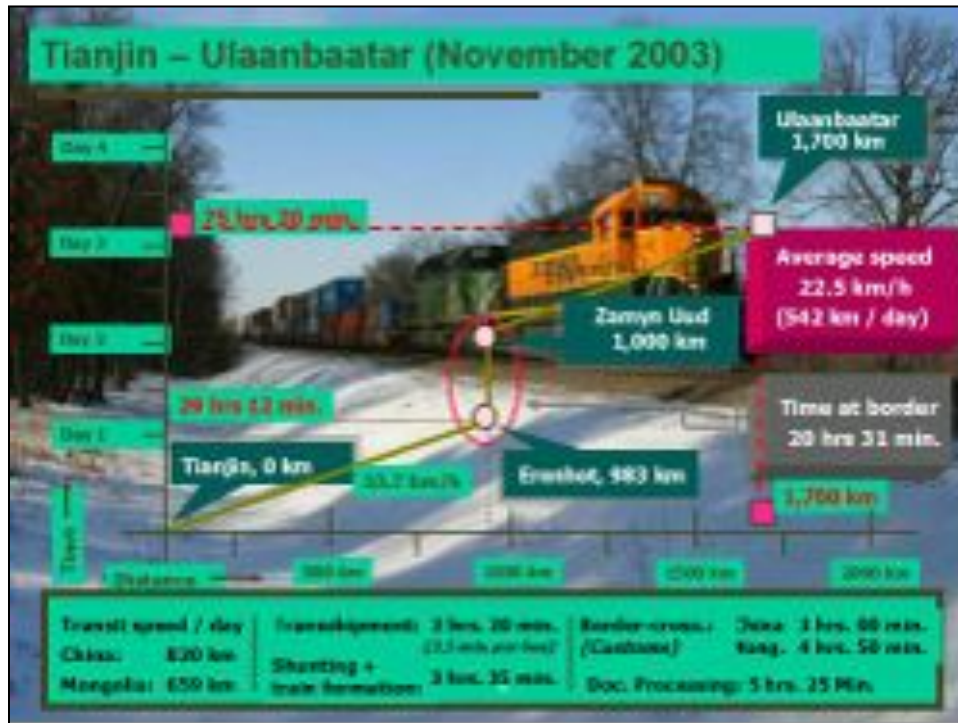
<Figure 2.4>: Demonstration runs of container block-trains



First is the section between Tianjin (China) and Ulaanbaatar (Mongolia) in November 2003.

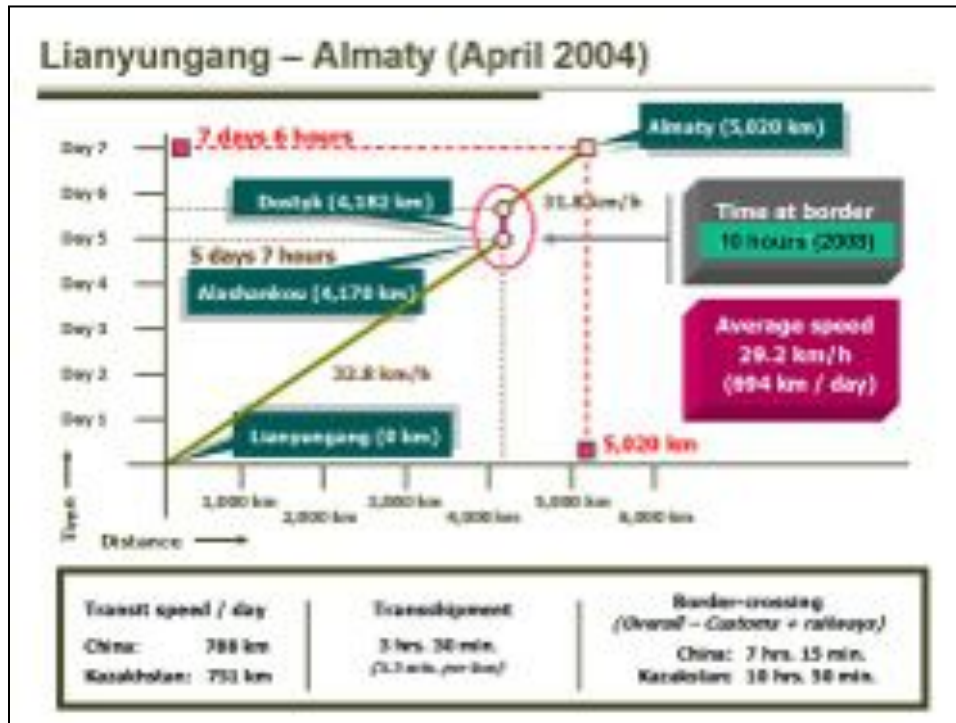
In order to connect 1700km of railways between two cities, it took more than three days, 75 hours 20 minutes. Average speed was 22.5km/h. Since there is a break-of gauge, required time at the border was significant, 20 hrs 31 min for trans-shipment, shunting or train formation, custom clearance and document processing.

<Fig 2.5> Demonstration run between Tianjin and Ulaanbaatar



The second one is Trans-China Railway route connecting Lianyungang, one of the biggest container port in China to Almaty, former capital and the largest economic city of Kazakhstan. The time of 7 days and 6 hours was needed to run around 5000 km of railways between Lianyungang and Almaty. There is also a break-of-gauge at the border, so that trans-shipment is required. Average speed was almost 30km/h and the time at the border was 18 hours in 2004. Since then, the time for border-crossing has been improved. The time at the border in 2008 was 10 hours, 8 hours shorter than in 2004.

<Figure 2.6>: Demonstration run between Lianyungang and Almaty



The third one is the section between Ulaanbaatar and Brest, westernmost city of Belarus, where there is a break-of-gauge between European standard and Russian wide gauges.

The last one is Trans-Siberian Railway connecting Vostochny, where cargos from South Korea, China and Japan are transported, to Malaszewicze in Poland, eastern extremity of European standard gauge.

Intermodal Transport and Integration

In order to cope with the future rapid growth of container trade in Asia, the development of inter-modal freight logistics has become an important policy priority. To implement an effective inter-modal supply chain strategy, a well-functioning rail, maritime transport system with adequate land connections by road is required. Rail, shipping and trucking are competitors, but they are also partners in door-to-door inter-modal operation.

The AH and TAR networks are two major components for inter-modal integration with connection to maritime shipping and ports. Since overseas shipping companies are reluctant to carry cargoes in bulk, the demand for container terminals is increasing. Even products such as rice, wheat and pulses are carried through container carriers.

Efficient inter-modal transport also requires a number of inter-modal interfaces, such as Inland Container Depots (ICDs) and dry ports. Dry ports are inland inter-modal terminals directly connected by roads or rails to sea ports and operating as centers for the transshipment of sea

cargos to inland destinations. In addition to their role in transshipment, dry ports may include facilities for storage and consolidation of goods, maintenance for road or rail cargo carriers and customs clearance services to the exporters and importers of the region at their door steps. Together with the increased trade of landlocked countries, inland areas of China and India are also being emerged as new markets. Therefore, there is an increasing need for faster and more efficient inter-modal connections to these inland locations for container movement. The future network of dry ports and logistic services could and should also be an integral part of an international, inter-modal transport and logistics system in the region.

Conclusion

Future growth of trade within Asia and between Asia and Europe will be faster than that of world-wide average. It means that the demand for improved inland transport network is significant.

We should utilize the regional transport infrastructure for cross-border, transit transport and trade with coordinated upgrading and good maintenance.

In general, public resources are so limited that the role of private sector is increasing in developing of transport infrastructure, provision operation and logistic services.

In the international inter-modal transport, lots of challenges and issues are existing at the points of cross-borders.

Thinking beyond borders in making up national plan and policies, and coordination among countries and agencies are required.

Acknowledgements

Much of the material for making this paper was provided by the Secretariat of the UNESCAP in Bangkok.

Comments

Hiroshi Horikawa

Introduction

Thank you, Mr. Chairperson, for giving me an opportunity to make comments on border crossing transportation. I am Hiroshi Horikawa from PHAJ, The Ports and Harbours Association of Japan. PHAJ's main members are port-managing bodies and municipal governments related to ports in Japan, and PHAJ's main work is proposing port development policies. I am engaged in conducting research relevant to port development and management. Today I will make comments on the need for more fluent cargo flows within the Region from the port planning and transportation point of view. Especially, I would like to state that new transportation modes, coping with high frequency and small lot transportation and contributing to reduction of CO2 emissions should be established for further economic development in North East Asia Region. This kind of transportation mode is not mainstream, but very important. Diversity of the mode is an important key which fuels further economic upgrades within the Region.

Background

As shown in the presentation, container movement between every pair of countries within the region continues to increase. One of the backgrounds of this trend is international sharing of production process and reciprocal supplies of parts and finished products, and this trend seems not to change. Vitalizing and rationalizing production activities in this region by this supply system are essential for expansion of economies of each country.

Therefore, building transport systems efficient and seamless at border crossing is essential. Moreover, to cope with global greenhouse problems, transportation modes which can achieve low-level CO2 emissions should be more developed.

Factors which would block seamless transportation at border-crossing are discontinuation at border; that is, first, as shown in the presentation,

unsuitable infrastructure; port facilities, roads, different train gage, different vehicle standard and second,

different CIQ standard, regulation or procedure

Moreover, security is important factor. Enforcement of the strict security procedures according to ISPS code of SOLAS convention probably imposes more lead time and cost on cargo handling. Countermeasures compatible with fluent cargo movement are required.

Amid increase of cargo flow demand in every country, transportation demand using 12ft containers, smaller units than the regular ones, have grown. Percentage of the demands is small, comparing with those of 20ft and 40ft container. But parts of electric appliances and automobiles are main cargo and have started to consolidate its positions as important mode. As international production process sharing expands, large scale transportation bases near metropolitan areas are being divided into smaller size and relocated to many local areas. These

movements have begun to shortcut hauling distance and lead time, and more frequent and smaller lot transportation demands have begun to increase.

Recommendations

To solve these issues and establish a rational cargo flow system, development of port and railway facilities and related infrastructures is required in each country, and reciprocal certification of regulation related to cargo vehicles and operation. As for CIQ clearance, simplification and unification of procedures and inspection systems are required.

To maintain both port security and smooth cargo flow are essential, and one of possible way to maintain them at the same time is to establish reciprocal certification of AEO (authorized economic operators) system and cargo tracing system using ICT which can easily identify containerized cargo detail.

Moreover, establishment of sea and rail transportation routes for logistic systems which connect Archipelagoes, Seas and Continents each other is essential as shown in the presentation.

Although cargoes other than bulk cargo are carried mainly by vanning in regular containers, we must establish new frequent and small lot transportation system to further vitalize production activities at the same time. This agenda was discussed in Japan-China-Korea transportation ministerial meeting held in 2006. Three important points were agreed in this meeting; first, Construction of seamless cargo flow system, second, Construction of environment friendly cargo flow system, and third, construction of cargo flow compatible with security. And action plan for standardization of 12ft container and cargo pallet in East Asia region were also agreed to step forward.

Cargoes flow not only through trunk line that is, regular container transportation, but also using complementary high frequency and small lot cargo flow systems. Air can serve the cargoes, but this mode should be used limitedly because it costs much both for money and environment. So, new transportation mode need to bridge between demands of air and regular container shipping. And to handle small lot cargo more easily and fast, we need to use new cargo containing cases.

That is why we are trying transportation system using 12 ft container, etc.

Example

Finally, I introduce challenges of new type transportation using smaller units in Japan, China and Korea. They are transportation systems using 12 ft containers and small cargo cases which can be staffed in 12 ft containers. This small unit is called a roll-box. Cargo transportation services by this system are presently operated between Japan and China and Japan and Korea.

The roll-box, a steel pipe frame box with 4 wheels, has around 2.2 cubic meters capacity, can contain 1 tonnage of cargo at most, and regularly 600 kg for easy movement without equipment. We can reduce packing cost and also reduce damage during transportation by using these boxes. If it is on a flat floor, it can be moved easily by manpower and easily vanned into containers.

Between Port of Shimonoseki in Japan and Port of Busan/Qingdao in China, the roll-box transportation services are currently operated using ferry boat service and another service is in preparation between Port of Hakata in Japan and Shanghai using RORO ship.

However, we have several problems to be resolved to familiarize this mode;

First, if platform for flat floor loading is not prepared, truck should be equipped with power-gate or equipment such as forklift is required,

Second, because the roll-box is just covered with pipe steel frame and plastic sheet, you have possible problems with quarantine procedures and this box has not been certified yet as ISO standard

Moreover, because this system can be easily operated in combination with 12 ft containers – 6 roll-boxes fit in one container – we must popularize 12 ft containers and establish train and trailer systems for 12 ft container hauling, and possess sufficient cargo case units in every countries in the region.

In Japan, Korea and China, relevant research has already begun and I hope it will progress successfully. Japan is trying to construct and prepare required infrastructure and regulations as soon as possible with cooperation with related countries.

I would like to conclude this comment saying again that establishment of high frequency and small lot transportation system using new smaller cargo containers such as a 12 ft container and a roll-box is essential for further economic development in North East Asia Region.

Thank you very much.

Session II: Energy Cooperation in Northeast Asia

3. Post-Economic Crisis: Rebuilding Energy Supply & Demand Equilibrium in Northeast Asia

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The global economic crisis of 2008 not only has brought about a heavy loss to the financial system of most economies of the world, but has altered the former structure of energy production and consumption among different regions in the world as well, exerting a strong impact on their energy strategies. This paper attempts to deal with the changes in energy supply and demand in Northeastern Asia under such backdrop; the changes in energy strategies of energy supplying countries and consuming countries in the region. Finally the paper puts forwards some constructive suggestions on the reconstruction of a balanced energy supply and demand in Northeast Asia.

I. The General Changes of Northeast Asia Energy Supply and Demand Equilibrium, Brought by the International Economic Crisis

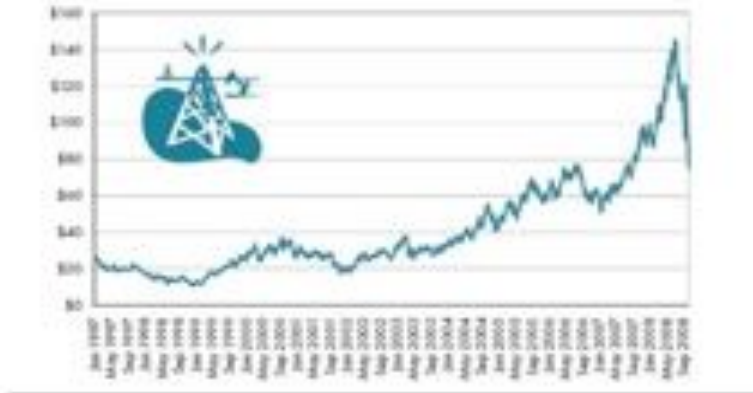
The US sub-prime mortgage crisis of 2007 triggered the global financial crisis of 2008, which in turn has aroused a global substantial economy recession. The deepening crisis now has tremendous impact on the world energy supply and demand. Prior to the crisis, on the whole, there had been a global gradual mismatch of the energy supply and demand and on top of that excessive financial speculations pushed the energy prices high up, intensifying a supply and demand imbalance as a result. However, with the deepening of the crisis the sharp drop in demand led to the change towards excess energy supply from excess demand and a price plunging of major energy products, such as oil, natural gas, coal and electricity.

As a matter of fact, in the years before the crisis, the global economic growth, especially the rise in energy demand by developing countries was making a supply and demand imbalance. The global excess liquidity caused by the continuing weak US dollar and low interest rates gave rise to speculations in energy futures, like oil. The oil price once went up to the historical height of US \$147 per barrel. But with the world economy slowdown driven by the ever spreading of the financial crisis, the global oil price plunged to less than US \$40 at the moment (Figure-1). Due to the economic recession the global energy supply is now over sufficient.

Now, the economic crisis has eased the intensive contradiction of oil and natural gas demand and supply. Northeast Asia, as one of the main parts of world energy market, has also seen an excess supply. In this region excess energy supply has replaced the excess demand and the original balance between oil supplying countries and consuming countries has been transformed very quickly. Such change, on the one hand, has made fundamental and far-reaching impact on the

economy of every country and on the other hand, has influenced these countries' energy development strategies, cooperation strategies and cooperation means among these countries.

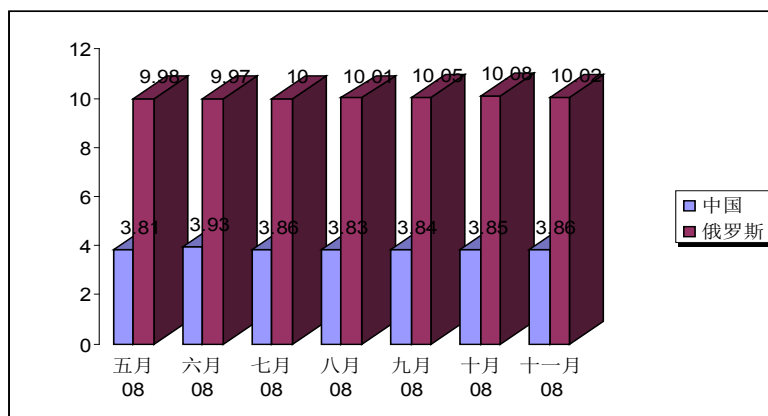
<Figure 3.1>: Global Oil Price Curve



Due to the adverse effect of an oil price decline and economic downturn around the globe and a diminishing domestic manufacturing industry, Russia, the biggest oil and natural gas producer and exporter in the region, has witnessed a decrease in its energy products production and exports. Meanwhile, the three big oil consuming economies---China, Japan and Korea---have cut their oil imports owing to the weakening global economy and their slow domestic economic growth. If it can be concluded that it is the excess demand in the time of high oil price that makes it difficult to reach long term cooperative agreements in energy, then the shift from excess demand to excess supply has lent opportunities of rebuilding the balance between supply and demand and of materializing the potential of having long term cooperation between oil supplying countries and consuming countries in the region.

Although Russian energy industry is hard hit by the decline of oil price during the financial crisis, which broke the balance between supply of and demand for energy, the positive aspect is that Russia is given an important opportunity to readjust its major petroleum exports market worldwide. Before, Russia mainly exported its energy to CIS countries and Western Europe. The single western line energy export market makes it difficult for Russia to stabilize its International oil & gas markets and national interests, leading to constant disputes in International energy, such as Russia's disputes with Ukraine, Europe in natural gas. Due to the financial crisis, Russia's energy markets in CIS countries and Western Europe are shrinking, leading it to resume its focus on the energy consumption markets in Northeastern Asia. The oil price is tumbling world-wide, the decline of Russian energy exports has slowed down the development of the national economy, thus, Russia begins to consider further strengthening its collaboration with major petroleum consumption countries in Northeastern Asia, expanding its petroleum and natural gas exports to the energy markets in Northeastern Asia. The long term cooperation program, signed by China and Russia to exchange \$25 billion worth of loans with 3 billion tons of petroleum, is an important transformation of Russian energy strategy after the financial crisis. This transformation is of important strategic meaning to solve the problems in a short term such as, the decline of exports and government revenue due to the decline of energy exports, also important to diversify its petroleum exports markets in long term.

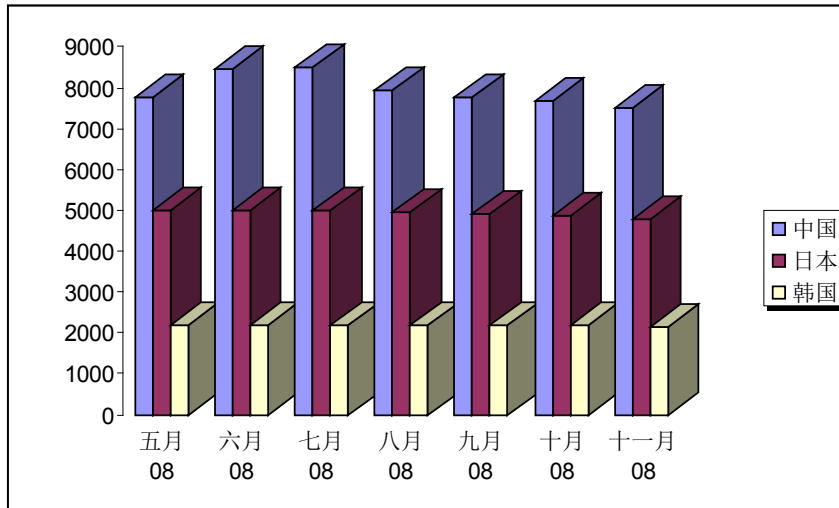
<Figure 3.2>: Comparison between the Aggregate Supply of Petroleum Products in China and Russia Unit kb/d



Although China has the largest coal reserve in the world and comparatively abundant oil and gas resources, dependency of crude oil on import is up to 50% as a result of the demand brought by high-speed development of China's economy. Meanwhile, China is building up a strategic petroleum reserve system. China's current strategic petroleum reserve can only sustain 30 days' use, which is far from the average of 90 days in Europe and the US. China's aggregate supply of petroleum products is less than half of that of Russia, whereas it has a high demand, and it is China's long term strategic goal to accelerate its energy cooperation with Russia. In the context of the financial crisis, the energy cooperation program to exchange \$25 billion worth of loans with petroleum is a sign that China and Russia have stepped up in the energy cooperation process, which is of great significance not only to both the two countries, but also the energy cooperation in the Northeastern Asia in the future.

For Japan and South Korea ---the two major energy consumption countries in Northeast Asia, although their energy demands are shrinking sharply, in long term, they remain major energy consumption countries (Figure-3). The energy consumption markets of the two countries remain extensive. Japan has a huge strategic petroleum reserve which can sustain 160 days' use. But as a country whose petroleum is not self-sufficient, the large petroleum reserves cannot avoid the strategic risks brought about by energy shortage. Japan and South Korea once signed a petroleum reserves-sharing protocol in 2007, which plays an important role in promoting energy cooperation in the Northeastern Asia. In the future, Japan and South Korea will make use of the favorable opportunity that the contradictions between supply of and demand for petroleum will relieve after the financial crisis, to advance the energy cooperation in Northeastern Asia.

<Figure 3.3>: Comparative Oil Products Demand by China, Japan and Korea (Unit: kb/d)



II. Energy Supply and Demand Conditions in Major Northeast Asian Energy Production and Consumption Countries

World financial crisis has made enormous impact on world substantial economy. Energy is the material basis of real economy, and therefore the crisis has brought about large changes in supply and demand setup of Northeast Asian energy market.

Russia

From 2005 to the first three quarters of 2007, Russian oil supply has been growing. As Russian economy has a strong reliance on energy, once world oil price decreases, national economy will be slowed down. The world oil price which was always favorable for Russian economy slumped substantially amid the 2008 international financial crises, which makes the oil production contract and quantity decrease. This can be shown by the declining trend of Russian oil supply from the end of 2007 to 2008 (Figure-4). Although most of Russian domestic oil demands increased in the corresponding period, the rising speed was slackened and there was even negative growth in them. (Figure-5)

<Figure 3.4>: Total Oil Supply of Russia



<Figure 3.5>: Demand by Product, Russia

Russia: Demand by Product

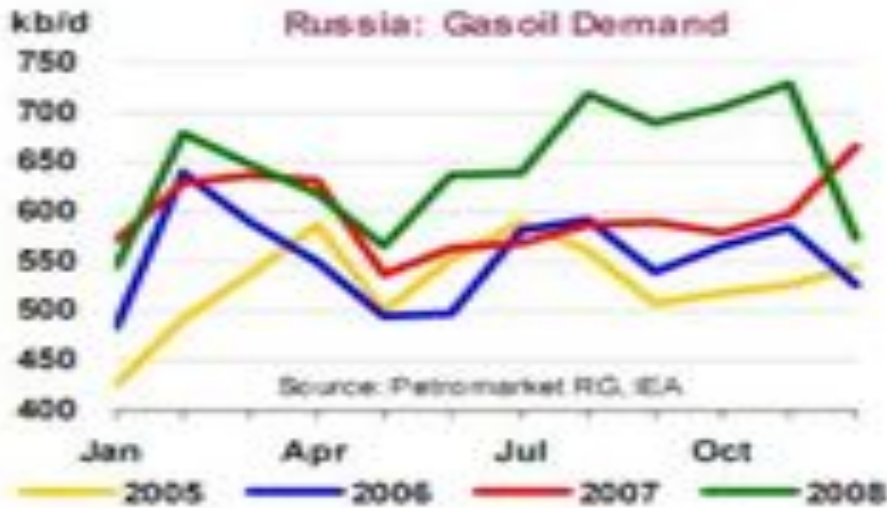
Thousand barrels per day

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2007	2008	2009	2008	2009	2008	2009
LPG & Ethane	304	325	340	21	15	6.9	4.6
Naphtha	254	246	245	-7	-1	-2.9	-0.5
Motor Gasoline	663	724	736	41	12	6.1	1.7
Jet & Kerosene	234	249	244	14	-5	6.2	-1.9
Gas/Diesel Oil	596	645	645	49	0	8.3	0.0
Residual Fuel Oil	304	268	269	-46	11	-15.0	4.3
Other Products	475	482	476	7	-6	1.5	-1.2
Total Products	2,849	2,930	2,957	81	27	2.8	0.9

Source: Petromarket RG, IEA

World financial crisis has also exerted a large influence on natural gas supply and demand. The influence ranges from demand to supply. In fact, natural gas demand in 2008 has increased remarkably compared with the former few years. At the end of 2008, the demand of natural gas plummeted rapidly (Figure-6). Against this backdrop, investors could easily give up investments in this area, which rendered large decrease in natural gas production and contraction in supply.

<Figure 3.6>: Russia: Gasoil Demand

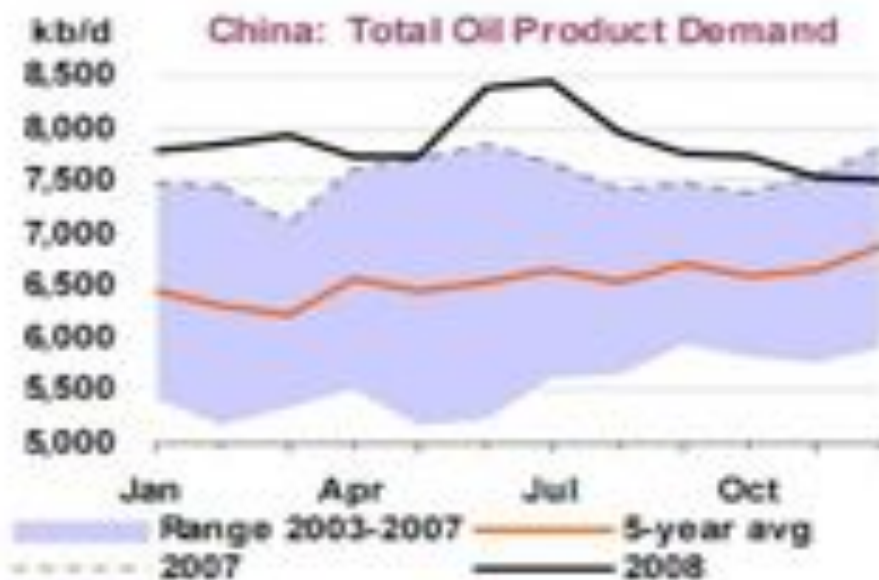


In general, as the most important energy production country in Northeastern Asia, the major energy products, namely oil and natural gas showed a declining tendency in output. Although the demand for major energy products have been slowly increasing in 2008 and 2009, the supply level in 2008 clearly fell behind that in 2007, which demonstrates that Russia is pessimistic on future market demand as the major oil production country.

China

China is the largest energy-consuming country in Northeast Asia. The rapid growth of its economy results in an increasing need for energy. However, the undergoing global recession has slowed down the pace, therefore, relatively decreased the energy needs. Although in the first 10 months of 2008, the oil product demand was higher than past year, till the end of the year it has lower than that of one year ago, fallen from the peak—8500kb/d, to 7500kb/d at the end of 2007. (Figure-7)

<Figure 3.7>: Total Oil Product Demand, China



The domestic demand for processed oil declined as well. The short supply on the first half of the year has switched to an excessive status, and there has even been an overstock in some areas. According to the oil product demand, LPG, Naphtha and Residual fuel oil has nearly increased to negative territory. (Figure-8)

<Figure 3.8>: Demand by Product, China

China: Demand by Product
(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2007	2008	2009	2008	2009	2008	2009
LPG & Ethane	609	619	622	-50	4	-7.5	0.6
Naphtha	812	780	802	-32	22	-4.0	2.9
Motor Gasoline	1,257	1,442	1,448	185	6	14.7	0.4
Jet & Kerosene	280	296	312	16	16	5.8	5.4
Gas/Diesel Oil	2,576	2,863	2,833	287	-30	11.1	-1.0
Residual Fuel Oil	744	603	656	-141	53	-19.0	8.8
Other Products	1,204	1,263	1,248	59	-15	4.9	-1.2
Total Products	7,542	7,865	7,921	323	56	4.3	0.7

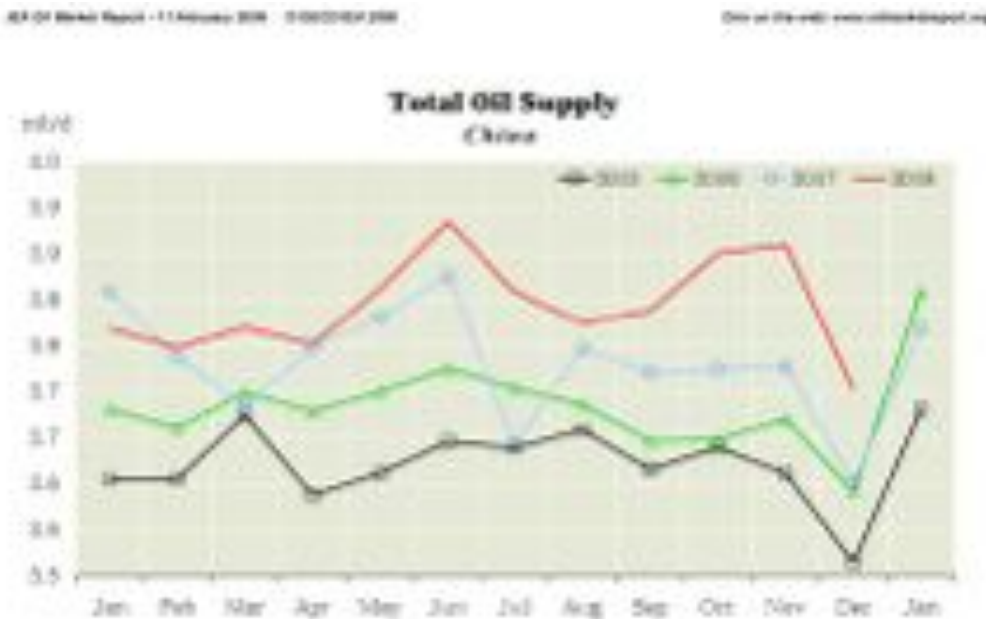
The global economic recession has already taken toll on the economy of China. The demand for oil and gas has dropped, and it is the same with electricity and coal. On a year-on-year basis, the

electricity demand in October has decreased—for the first time since 1999—by 3.7%; the demand continued to go down by 8.6% as last November. The shortage of electricity in summer has been converted. The coal stock nationwide has increased by 19.9% from August to July, which amounts to 17.8 million tons. Meanwhile, the coal stock of the top 5 power plants has gone up to over 5 million tons, which hits the record high with the equivalence to one month's demand.

During the economic crisis, the prices of petrochemical and energy products have descended once and again due to the declining domestic demand. Also, the unbalanced supply and demand of energy in China created lots of obstacles for enterprises of petroleum/ petrochemical, power plants and coal. The domestic market needs fewer processed oil. Consequently the stock goes up continuously, and then turns into unsellable products. Policy-related losses occurred in oil refinery industry. Furthermore, enterprise benefits have been affected severely because the market can not consume all the high price oil.

The economic crisis shadows on the supply to China's energy in the short run as well (Figure- 9). Different from Russia, the level of oil supply in the year 2008 is higher than that of the past 3 years as a whole. However, in June there came the economic slowdown, and then the oil supply of that month in China slashed from 3.9mb/d to 3.8mb/d. Although there was a slight rise in September and October, till November it dropped to the bottom of about 3.7mb/d. Considering that in the year 2009, China will try hard to keep its GDP growing up by 8%, besides manufacturing industries play a critical role in China's GDP, thereby, China needs to maintain the energy supply at an appropriate scale

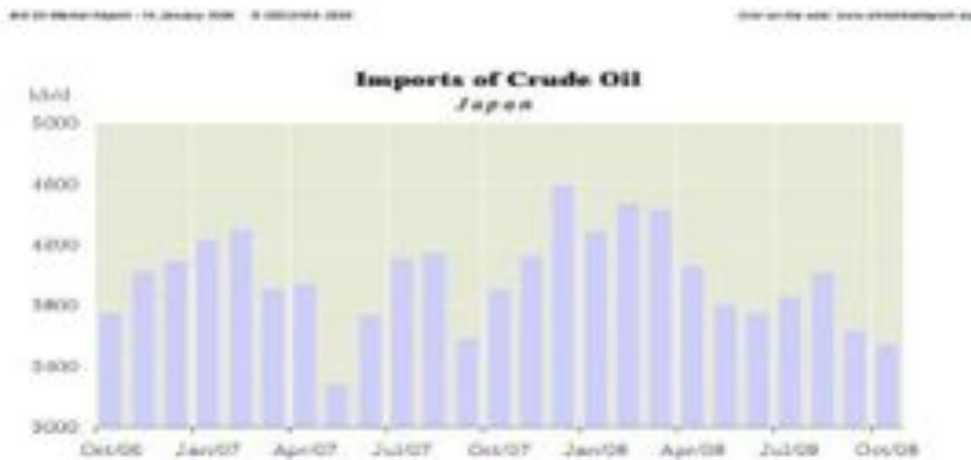
<Figure 3.9>: Total Oil Supply of China



Japan

The petroleum and natural gas in Japan are totally dependent on imports. In the Northeast Asia, Japan's energy consumption is only behind to China, ranking second. Japan has a great influence in the energy consumption market of Northeast Asia. In 2008 before the financial crisis, the imports of petroleum in Japan once hit a new record of the recent years in January, reaching 4600kb/d; besides, the imports of the crude oil remained at a relatively high level and indicated a momentum of growth. However, the imports dropped noticeably since June, merely about 3700 kb/d (Figure-10), tumbled to 3000 kb/d in July (Figure-11). It is quite rare in Japan to see such fierce changes. To some extent, it indicates that a new turning point has emerged for Japan's domestic demand for petroleum, and that the financial crisis has had a great impact on the balance between supply and demand in Japan within a short period.

<Figure 3.10>: Japan's Imports of Crude Oil



<Figure 3.11>: Comparison of Monthly Imports of Crude Oil (Japan, 2002-2008)



From 2007 to 2008, Japan witnessed a constant decline in its total domestic demand for petroleum, unlike China and Russia. At an early stage of the financial crisis in March 2008, the negative growth rate of total domestic demand for petroleum was under control to some extent, remaining about -1%. Compared to the earlier negative growth of -4%-5%, it has been slowed down. After July, however, the demand for petroleum continued to drop, with the decline hitting a new record high (-5%). From the end of 2007 to the end of 2008, Japan's domestic demand for petroleum slipped along with the intensification of the financial crisis, hitting a record new low of the past two years, reaching about 4770kb/d in December 2008 (Figure-12).

<Figure 3.12>: 12 Month Moving Average Demand vs. Y/Y Growth, Japan



Japan's total reserves of crude oil have been declining. For the past five years, Japan sustained an average reserve of crude oil of 132.0mb. Due to the financial crisis, Japanese reserves of crude oil dropped from -5 to -10mb in July August in 2008. In June of the same year, Japanese total reserves of crude oil declined from 118mb to 116mb, and continued to decline after a recovery to 125mb in October (Figure-13).

<Figure 3.13>: Closing Industry Stocks of Crude Oil, Japan



The financial crisis noticeably slowed down the growth of production, imports, reserves and consumption of natural gas (Table-1). The monthly growth of total consumption of natural gas, in particular, declined from the 13% midyear to 5% at the end of the year.

<Table-3.1>: The Concerning Data about Japan's Natural Gas in 2008

absolute magnitude (Million cubic meters)						
Japan	May2008	Jun2008	Jul2008	Aug2008	Sep2008	Nov2008
Indigenous Production	273	276	295	286	275	321
+Imports	7303	7944	8485	7988	8219	7336
-Exports	-	-	-	-	-	-
-Stock Changes	-347	327	270	-248	114	-183
=Gross Consumption 3	7882	8989	9295	8706	9002	8099
% Change Year to Date 2						
Indigenous Production	1.5	1.1	0.7	0.6	0.7	0.7
+Imports	6.1	6.2	6.4	5.2	5.8	3.3
-Exports	-	-	-	-	-	-

-Stock Changes	X	x	x	x	x	x
=Gross Consumption 3	12.9	11.9	12.7	8.4	8.5	5.4

Korea

Korea's per capita energy consumption is ranked ninth in OECD countries. As energy consumer and importers, Korea is second only to China and Japan in the Northeast Asia region. Before the economic crisis, Korea's oil imports had climbed to 2600 kb/d in January 2008, the highest over the past two years, and remained stable and at relatively high levels during the following months. Then oil imports decreased to 2400 kb/d in July, showed a watershed of demand for oil. Thereafter, the oil import had dropped drastically, from about 2400 kb/d to 1500 kb/d. It seriously impacted on Korea's energy supply and demand balance in the short run (Figure-14 & 15).

<Figure 3.14>: Imports of Crude Oil (Korea, 2007-2008)



<Figure 3.15>: Comparison of Monthly Imports of Crude Oil (Korea, 2002-2008)



In terms of Korea's demand for oil, it had a negative growth rate in March 2008; and maintained at about -1 per cent in the next couple of months. Then the negative growth rate increased obviously after August, even leapt to -3.2 per cent in November 2008, reached record high in Korea. The absolute amount of total oil demand had been falling with the aggravating economic crisis, dropped to about 2152 kb/d in December 2008, the lowest over the past two years (Figure-16).

<Figure 3.16>: 12 Month Moving Average Demand vs. Y/Y Growth (Korea, 2007-2008)



Korea's total oil stocks averaged 46.0mb a year in the past five years. After June 2008, its total oil stocks reduced sharply, the decrement rose from one million barrels in May to nearly 600 million barrels in June and July, in October the decrement even climbed to about nine million

barrels. Korea's industry oil stocks had fallen from 43mb in June 2008 to 37mb, which fell back again after a brief rally in October (43mb) (Figure-17).

<Figure 3.17>: Closing Industry Stocks of Total Products (Korea)



Although link relative ratios of Korea's gas output, imports, stocks, and consumption have contrary results (some rise and some fall), year-on-year growth rates of gas consumption, imports, and stocks obviously slowed down, especially the domestic gas output declined substantially (Table-2).

<Table-3.2>: Data of Gas (Korea, 2008)

Absolute Quantity (Million cubic meters)						
Korea	May2008	Jun2008	Jul2008	Aug2008	Sep2008	Nov2008
Indigenous Production	-	-	-	10	16	33
+Imports	2765	1863	2317	2107	2175	3222
-Exports	-	-	-	-	-	-
-Stock Changes	514	58	107	404	228	369
=Gross Consumption 3	2135	1858	2121	1703	1984	3188
%Change Year to Date 2						

Indigenous Production	151.7	40.4	-3.9	-23.1	-29.3	-20.2
+Imports	16.1	16.1	17.3	16.9	14.6	13.2
-Exports	-	-	-	-	-	-
-Stock Changes	x	x	x	x	x	x
=Gross Consumption 3	11.6	9.4	9.5	7.3	7.7	5.4

The above data indicate that Korea's situation is similar to Japan's, the energy supply and demand has dramatic decline under the attack of economic crisis.

III. Grasping at Opportunities for Energy Cooperation during the Economic Crisis, and Rebuilding Regional Energy Equilibrium

In the context of global economic crisis, and based on the energy supply and demand situation of major energy production and consumption in Northeast Asia, how to reconstruct the energy supply and demand balance in Northeast Asia, the suggestions are as follows:

1. Currently, the tension between energy supply and demand in Northeast Asia has alleviated. We should seize the occasion to set up long-term stability of mechanism for energy cooperation in Northeast Asia. Although Northeast Asian countries own great production capacity of energy and broad energy consumer market, there is no effective mechanism to ensure the balance and security between energy supply and demand in this region. The crisis drives countries to resume search for long-term stability of mechanism for energy cooperation. At present, there is a variety of regional energy cooperation initiatives and mechanisms (Japan's Initiative, Korea's Initiative and China's Initiative). We should seek common ground among these initiatives to break the barriers, and establish a unified multilateral intergovernmental energy cooperation mechanism based on the bilateral energy mechanisms. Meanwhile, we should attach great importance to the role of non-governmental organizations, research institutions and enterprises in energy cooperation, and accelerate promotion for building energy cooperation system and mechanism in Northeast Asia, and strengthen contact and cooperation with International Energy Agency, OPEC and other international energy organizations, so as to make them play more important role in international energy market.

2. Accelerating implementation of large-scale cross-border energy cooperation project. Presently, there has been a lot of cross-border energy cooperation projects in Northeast Asia, most of them are bilateral cooperation, relative shortage of multilateral cooperation. For building large-scale oil and gas pipe network, and electricity network in Northeast Asia in the future, there is still a long way to go. In the long term, Russia, China, Japan and Korea face the problem that how to build energy development bases and energy transportation network. Now, the scale is small for

oil and gas cooperation, and electric power transmission. Future cross-border energy cooperation projects should be guided by governments, researched by academic research institutions, and operated by large energy companies, to achieve exchange of views among government, academic research institutions and enterprises, and multilateral cooperation among countries. Northeast Asian countries should constantly enhance their capability with large-scale multilateral cross-border energy projects and cooperation, to cope with impact from unstable factors of world energy market, and keep energy supply and demand balance in Northeast Asia.

3. Northeast Asian countries should use their own advantages to rebuild energy supply and demand balance. Russia, as the largest energy producer in Northeast Asia, should take advantage of its energy resources, to provide more energy products for energy consumption market in Northeast Asia. On the one hand, it can alleviate the impact of global economic crisis on Russia's domestic energy industry and its overall economic development; on the other hand, it supplies the Northeast Asian energy consumer with needed energy. It can play a central role in stabilizing the Northeast Asian energy market. Russia not only owns energy market of CIS (Commonwealth of Independent States) and Western European countries, but also exploits energy market in Northeast Asia, which can avoid the risks of single energy export market. China, as the largest energy consumer in Northeast Asia, has the lowest strategic petroleum reserve in this region. China should seize the chance of lower oil price, make use of its massive foreign exchange reserves to increase the investment and construction programs with Northeast Asian energy producers, and to expand strategic petroleum reserve. Japan and Korea, as developed economies, have common ground on energy consumption. In the context of economic crisis, Japan, as well as Korea, can provide financial support and depend on its operation of mature capital markets, to revitalize its national economy as well as promote formation and improvement of Northeast Asian energy market, by supporting and operating substantial funds of Northeast Asian energy cooperation projects.

IV. Conclusion

In the context of global economic crisis, the economic growth rate of Northeast Asian countries has significantly receded, and energy supply and demand balance has marked reversal, from short supply to oversupply. On the one hand, outputs of major energy-producing countries in Northeast Asia have fallen, and investment and development scales of energy industry have shrunk. On the other hand, the energy demand growth rates of major energy-consuming countries have obviously slowed down. Global energy price reduce, together with global economic crisis, brings major energy producing and consuming countries in Northeast Asia a historic opportunity to rebuild the energy cooperation pattern in this region. Northeast Asian countries should take advantages of the opportunity that conflict between energy supply and demand has mitigated, to build confidence, create mutual benefit and win-win situation, and accelerate promotion of large-scale cross-border energy cooperation projects. Based on their own advantages, Northeast Asian countries should establish long-term energy cooperation mechanism in Northeast Asia to stabilize the energy market and keep energy supply and demand balance in this region.

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4. Energy Cooperative Activities in NEA under the Greater Tumen Initiative

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Greater Tumen Initiative (GTI) at a Glance

The *Greater Tumen Initiative* (GTI) (originally known as the *Tumen River Area Development Programme – TRADP*), is an intergovernmental cooperation mechanism in Northeast Asia (NEA), supported by the United Nations Development Programme (UNDP), with a membership of five countries: Democratic People’s Republic of Korea, People’s Republic of China, Mongolia, Republic of Korea, and Russian Federation.

In 1995, the member governments of the TRADP signed formal agreements to establish the intergovernmental cooperation mechanism, aimed at attaining greater growth and sustainable development for the peoples and countries in Northeast Asia and the Tumen River Area in particular through strengthening economic and technical cooperation in the region.

The core decision-making institution of the programme is the Consultative Commission composed of government representatives from the member countries. An executive office of the programme is the Tumen Secretariat, associated with UNDP.

At the 8th meeting of the Consultative Commission (Sept. 2005, Changchun, China), the governments adopted the *Changchun Agreement* in which they agreed to revitalize and promote TRADP as the GTI, extend the 1995 agreements for another successive period of 10 years and committed to take the full ownership of the GTI through increased contribution in financial and human resources, with the continuous support of UNDP. The meeting agreed on the *GTI Strategic Action Plan 2006 – 2015*, focusing GTI activities on four priority sectors: transport, energy, tourism and investment with environment as a cross-cutting theme.

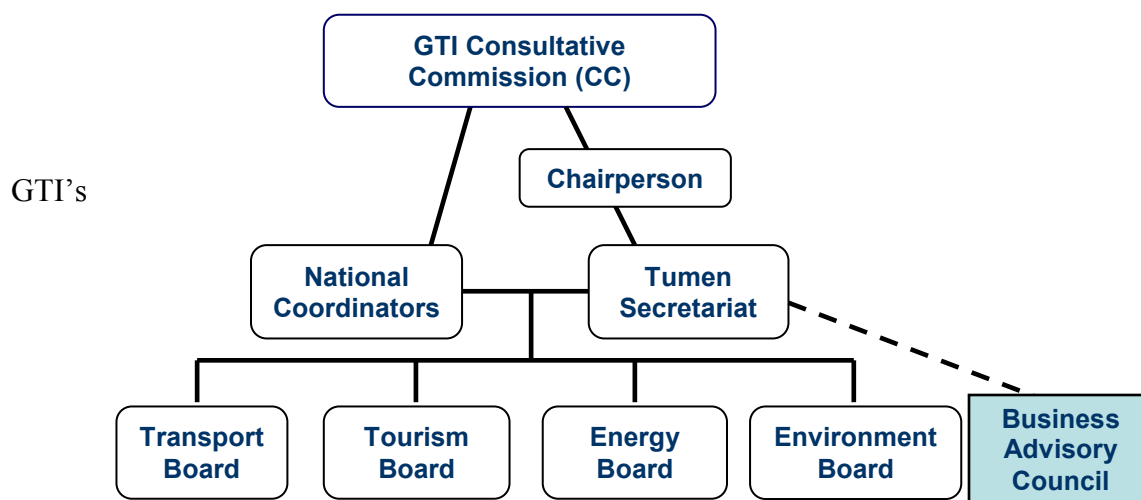
According to the *Changchun Agreement*, the geographical coverage of the GTI was widened to embrace the following: the three Northeast provinces (Jilin, Heilongjiang, & Liaoning) and Inner Mongolia of China; the Eastern Provinces of Mongolia; Rason Economic and Trade Zone of DPRK; the Eastern port cities of the Republic of Korea and the Primorsky Territory of the Russian Federation (see figure 1).

<Figure 4.1>: Map of Greater Tumen Region



At the next meetings of the GTI Consultative Commission, institutional development of the intergovernmental mechanism moved further. At the 9th meeting of the Consultative Commission, (Nov. 2007, Vladivostok, Russia), the Energy Board, the Tourism Board and the Environment Board were established to strengthen regional cooperation in these priority sectors. Also, the Business Advisory Council (BAC) to serve as a private-public partnership mechanism in the region was created. The government participants in the 10th meeting of the Consultative Commission (March 2009, Ulaanbaatar, Mongolia) established the Transport Board in order to develop a proper transport infrastructure and logistical network. The current institutional structure of the GTI is displayed below.

<Figure 4.2>: Institutional Structure of the GTI



Mandate to Promote Energy Cooperation in NEA

Decisions of the intergovernmental Consultative Commission (CC) over the years 2005-2009 relating to the promotion of the cooperation in the energy sector under the GTI are as follows.

8th CC meeting (Changchun, September 2005).

According to the *Changchun Agreement*, the GTI member governments agreed to “shift resources and activities of the Tumen Secretariat to the identification and implementation of concrete regional projects in the agreed priority sectors (transport, **energy**, tourism and investment with environment as across-cutting sector) with great value to Northeast Asia and the Greater Tumen Region in particular.”

The GTI governments agreed on a *Strategic Action Plan 2006 – 2015* (SAP), focusing GTI activities on the four priority sectors: transport, **energy**, tourism and investment with environment as a cross-cutting theme.

In the SAP 2006-2015, the *strategic objective* for cooperation in the energy sector is stipulated as follows: “establish an institutional framework for consultations and policy support at the level of the member governments. This framework should provide an opportunity for a full exchange of information among member governments and the private sector and lay the basis for reducing or removing non-physical barriers to energy trade in the Greater Tumen Region (GTR)”

9th CC meeting (Vladivostok, November 2007).

According to the *Vladivostok Declaration*, “the participants agreed to establish the Energy Board, which will contribute to the improvement of energy security in the Greater Tumen Region (GTR) through regional energy cooperation. The participants acknowledged that the Energy Board will serve as a facilitator for energy-related infrastructure development in order to accelerate GTI area’s economic development”. It was agreed also to establish a non-executive Energy Expert Council with the membership of the well-respected energy experts to offer a professional advice to the GTI Energy Board. At the meeting, *Terms of References (TOR) on the Establishment of the GTI Energy Board* were adopted.

In accordance with the *TOR of the GTI Energy Board*, the main purpose of the Board is to contribute to the improvement of energy security in the Greater Tumen Region (GTR) through regional energy cooperation, and to provide a solid foundation for better overall energy planning in the region during 2006-2015.

The main objectives of the Board include reviewing proposals and making recommendations to the GTI Consultative Commission on the following:

promote the earliest introduction of new energy resources for the GTR,
assist development and utilization of alternative energy sources (solar, wind, etc.),
assist in moving toward energy-efficient consumption and coordinated measures and policies to save energy,
lay the groundwork for reducing or removing non-physical barriers to energy trade,
help accelerate the development of energy-related infrastructure,
provide energy supply options in the existing and new industrial zones of the GTR,
help bring about the earliest possible introduction of multilateral energy cooperation for GTI areas.

Concrete tasks of the GTI Energy Board are as follows:

identify, submit, deliberate on, and approve proposals for GTI energy activities and projects,
undertake practical actions required for the implementation of the activities,
monitor and evaluate the results of GTI energy activities and projects,
provide information on energy policies and relevant energy statistics from each country,
make efforts to mobilize financial resources.

10th CC meeting (Ulaanbaatar, March 2009).

During this meeting, the participants agreed on the next steps for implementing the GTI institutional structures, as created at the 9th CC meeting. They stressed the importance of these structures and reconfirmed their commitment to strengthen economic cooperation in key sectors of the economy (as per *Ulaanbaatar Declaration*). The composition of the *GTI Energy Expert Council* was approved.

GTI Energy Activities: Background and Status

Cooperation in the energy sector is one of the top priorities of the Greater Tumen Initiative (formerly – the Tumen River Area Development Programme). The member countries made this point clear at the 5th meeting of the Consultative Commission in April, 2001 in Hong Kong, and convened the first meeting of the *Tumen Programme Working Group on Energy* in March 2002

in Beijing, China. That meeting defined priorities for regional cooperation in the energy sector as follows:

policy formulation for energy cooperation,
establishment of an institutional framework for energy cooperation, and
reduction or removal of non-physical barriers to regional projects in the region.

This meeting also reached a consensus on the need for a comprehensive study in the energy sector of the North East Asian region as a first step towards meeting these priorities. As a result, the “Baseline study and capacity building for energy cooperation in Northeast Asia” Project was launched in 2005 in the framework of Tumen Programme. The Korean Energy Economics Institute (KEEI) has been commissioned to undertake this project. The final version of the study report, titled *The Baseline Study for Energy Cooperation in Northeast Asia*, was successfully prepared in October 2007 and circulated to the GTI member countries for the utilization of the findings and recommendations made in the course of the study.

The project also included a *capacity-building component* to provide training programmes for DPRK and Mongolia. The programmes were customized to meet each individual country’s needs for technical assistance in the energy sector. The first training program for the DPRK took place in Beijing, China from 30 May to 17 June 2006 and included lectures and study tours. In addition, DPRK energy officials and experts participated in local training during 11-19 July 2006 in Pyongyang, DPRK. The second training program was undertaken for Mongolian energy specialists and officials. The first part of the training program was organized as a study tour (March 17-21, 2008) to energy organizations and facilities in the Republic of Korea. The second part included a domestic training workshop in Ulaanbaatar, Mongolia on 25 April 2008.

To achieve the strategic objective, stipulated at the *Strategic Action Plan 2006 – 2015*, and following the decision of the 9th meeting of the GTI Consultative Commission (Vladivostok, Russia, Nov. 2007), the GTI Secretariat has launched the project *Capacity Building on GTI Energy at regional level*. The project is composed of three sub-projects:

Capacity Building Training Programs for the GTI countries, to give trainees an in-depth understanding on the current situation in the energy sector and its development in NEA countries;

Capacity Building – Creation of GTI Energy Board, aiming at strengthening capacity to review proposals and make recommendations to the GTI Consultative Commission;

Reduction of Non-Physical Barriers to Energy Trade in NEA, to develop a comprehensive insights regarding relevant national institutional environments, address relevant obstacles and provide recommendation toward their reduction or elimination.

1. Capacity Building Training Programs for the GTI countries.

This component of the framework project continues the previous GTI activities in this area. The third training programme focusing on provincial-level participants from GTI countries is planned to be organized by the GTI Secretariat by the end of this year.

2. Capacity Building – Creation of GTI Energy Board.

Both the Energy Board and the Energy Expert Council have been established and composed to date.

3. Study Project of Reduction of Non-Physical Barriers to Energy Trade in NEA.

In its initial stage, this project will focus on description and assessment of existing energy infrastructure, policies, procedures, practices and tariffs/fees, as well as local, national and international laws and agreements related to regional energy trade. In its second phase, the project will examine actual problems with energy cooperation, the costs and causes of utilization of regional energy interconnections, and the applicability of international conventions, and will develop relevant policy recommendations.

The GTI Secretariat, in consultation with the Energy Board and the Energy Expert Council members, will prepare the Terms of Reference on the proposed project and initiate its further implementation.

GTI Energy Activities: Next Step Ahead

The Inaugural meeting of the GTI Energy Board will take place on 16 September 2009, in Ulaanbaatar, Mongolia. Ongoing and new activities will be discussed during the meeting. The *GTI Energy Action Plan for 2010-2012* with indication of the GTI energy priority projects for joint promotion is planned to be adopted at this meeting.

Session III: Green Energy Cooperation and Partnership in Energy Efficiency

5. China's Progress in Energy Saving and Emission Reduction and the Development and Utilization of Renewable Energy

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I. Energy saving is the key measure to cope with climate change.

GHG emission results in global warming and has resulted in serious consequence on natural ecosystem, and the environment for human survival and development. Climate Change has become the hot topic concerned by international community, and is the common challenge to our human society.

From the last century since the late 80's, the international community had been making unremitting efforts to cope with climate change, and **《The United Nations Framework Convention on Climate Change》**, **《The Kyoto Protocol》** and **《The Bali roadmap》** established the basic principle and effective framework of international cooperation to deal with climate change.

Chinese government attaches great importance to climate change. In June 2007, **《The China's National Climate Change》** was officially released to public, which is China's first comprehensive climate change policy paper; The Chinese government set up a national leading group to address climate change, with Premier Wen Jiabao as head of the leading group.

It may substantially reduce CO₂ emissions through saving and reducing the utilization of fossil energy, improving energy efficiency, and developing and making use of new energy including renewable energy. Energy saving is the urgent need to cope with global climate change and is the radical measures to solve the energy environment problems.

II. China attaches great importance to energy saving and emission reduction and has made remarkable progress in recent years

Chinese government attaches great importance to energy saving work and has brought forward and enforced a series of laws/regulations and polices/measures to strengthen our energy saving work.

—On October 28, 2007, **《The China Energy Conservation Law》** was amended and passed, and was put in force on April 1, 2008. In the amended China Energy Conservation Law, it clearly stated that Resource Saving is our basic national policy. China implements the energy development strategy of placing stress on conservation and development and giving priority to energy conservation.

—In 2004, China issued the 《The China Medium and Long Term Energy Conservation Plan》 for the first time.

—In 2005, for the first time, 20% reduction of energy consumption per GDP was set to be the binding target regulated in the 11th Five-Year Plan.

—In 2006, Our State Council made 《The Resolution on Strengthening Energy Conservation Work》 .

—In September 2007, the Chinese government promulgated the 《**The China Medium and Long Term Renewable Energy Development Plan**》 and brought forward that by 2010 the total renewable energy consumption will account for 10% of total energy consumption and by 2020 this proportion will reach around 15%.

—In 2006, NDRC issued 《**The 1000 Enterprises' Energy Saving Action** 》 and determined to conduct the energy saving action towards 1000 enterprises (the enterprises with annual energy consumption of 180,000 tce or more) in 9 energy-intensity industries, including iron and steel, non-ferrous metal, coal, power, oil and petrochemical, chemical, paper making and textile industries. During the 11th Five-Year Plan, these 1000 energy-intensity enterprises will save about 0.1 billion tce.

—In July, 2006, NDRC issued the Notice on Printing and Distributing the Suggestions for Implementing 《**The Ten Key Energy Conservation Projects**》 . These ten key energy conservation projects include Coal-fired industrial boiler (kiln) retrofit projects, District Cogeneration Projects, Residual Heat and Pressure Utilization Projects, Petroleum Saving and Substituting Projects, Motor System Energy Saving Projects, Energy System Optimization Projects, Building Energy Conservation Projects, Green Lighting Projects, Government Agency Energy Conservation Projects, and Energy Saving Monitoring and Testing, and Technology Service System Building Projects. It is expected that 240 million tce will be saved in the 11th Five-year Plan;

—On August 1, 2008, the State Council Order No. 531 and 530 had been announced and these two Ordinances, 《**The ordinance of civil building energy saving (draft)**>》 and 《**The ordinance of public organization energy saving (draft)** 》 had been implemented since October 1, 2008.

By active energy saving policy implementation, from 2006 to 2008, our energy consumption per GDP unit accumulatively decreased by 10.1%, the accumulated saved energy reached 290 million tce. Since 2006, China's energy consumption elasticity coefficient has been down to 0.66, which reversed the situation of higher than 1 several years in a row; From 2006 to 2008, the total emission reduction of SO₂ and the chemical oxygen demand in the first were reduced by 8.59% and 6.61% respectively.

In recent years, China conducts substantial work in adjusting industrial structure and eliminating outdated production capacity and makes remarkable progress. Between 2006 and 2008, 38.26 million kilowatts of small thermal power units was shut down, 60.59 million tons of outdated iron smelting capacity, 43.47 million tons of outdated steel production capacity, and 140 million tons of outdated cement production capacity respectively were eliminated. And from 2006 to the first half of 2009, 7467 small thermal power units was shut down and the total capacity reached 54.07 million kw, which is equivalent to 62.4 million tons of raw coal savings annually, 124

million tons of CO₂ emission reduction, 1.06 million tons of SO₂ emission reduction, one and half years ahead of time fulfilling the target of the 11th Five-year Plan.

In recent years, China's building energy saving and emission reduction achieved breakthrough progress. The implementation rate of implementing mandatory energy efficiency standard for our new building design was increased from 53% in 2005 to 97% in 2007, and the implementation rate of implementing mandatory energy efficiency standard for building construction was increased from 21% in 2005 to 71% in 2007.

In this year, China officially launched **《The Energy Saving Products Patronizing Public Project》**. This project is that through financial subsidies to promote ten kinds of high-efficient energy saving products including air conditioner, refrigerator, flat-panel TV, washing machine and motor with the 1st or 2nd EE rating, and the high-efficient lighting energy production and energy saving and new energy automobile are also included. Implementing **《The Energy Saving Products Patronizing Public Project》** may drive RMB 400-500 billion needs per year, which may make the market share of high-efficient energy saving products improve 10-20 percentage points and reach to 30% above, which may save 75 billion kWh electricity per year, equivalent to less construction of 15 coal-fired power plant of one million kilowatts level of coal-fired power plant level, 75 million tons of CO₂ emission reduction.

The year of 2009 is the decisive year for fulfilling the energy saving and emission reduction target of the 11th Five-year Plan. In order to achieve the binding target of 20% reduction of energy consumption per GDP regulated in the 11th Five-Year Plan, 5% should be reduced in this year and next year, and we should increase the utilization rate of high-efficient energy saving products including air conditioner, refrigerator, and automobile from 5% to 30%, clearly we have limited time but arduous task.

III. China vigorously develops and utilizes renewable energy and has obtained gratifying achievements.

In September 2007, the Chinese government promulgated **《The China Medium and Long Term Renewable Energy Development Plan》** and brought forward that by 2010 the total renewable energy consumption will account for 10% of total energy consumption and by 2020 this proportion will reach around 15%. Of which, 5 million kw in 2010 and 30 million kw in 2020 for the installed capacity of wind power; 0.3 million kw in 2010 and 1.8 million kw in 2020 for the total capacity of solar energy power generation, and 5.5 million kw in 2010 and 30 million kw in 2020 for the installed capacity of biomass power generation.

In recent years, the size of wind power has been doubling increased. In 2000, the installed capacity of wind power was 0.34 million kw. In 2006 and 2007, the added new installed capacity was 3.05 million kw, with the annual average increase rate of 148%. And in 2007, the installed capacity of wind power reached 6.05 million kw, fifth in the world. By the end of 2008, the installed capacity of wind power reached 10 million kw, which had accomplished the target of wind power development regulated in **《The 11th Five-Year Renewable Energy Development Plan》** in advance. Now China is building dozens of large-scale wind power projects of 100 thousands or million kw level and will focus on the construction of three great wind power plant with 10 million kw level in Hexi Corridor in Gansu, Inner Mongolia and northern Jiangsu

coastal. Developing at this speeding rate, it is expected to arrive at 20 million kw in 2010, 100 million kw in 2020, which will greatly exceed the targeted number of 30 million kw.

China is actively developing solar energy power generation and solar thermal utilization. By the end of 2007, the collector area of solar water heater reached 120 million square meters and has been ranking first in the world many years. Presently, the key technology for solar energy power generation is photovoltaic power generation. In 2007, the solar photovoltaic power generation reached 0.1 million kw, the annual production capacity of photovoltaic cells reached 1 million kw, and is the world's largest producer of photovoltaic cells. In this year, Chinese government has launched **《The Plan for Solar Energy Roof》** and **《The Golden Sun Plan》**, which will further advance the application of solar energy photovoltaic technology to urban and rural construction.

China is actively developing its nuclear power. In 2000, the installed capacity of nuclear power was 2.1 million kw, and in 2008, this number increased to 9.1 million kw, accounting for 1.3% of the total installed capacity of power, far lower than the average rate of 16% of the total power generation of the nuclear power plants around the world. And it is expected that by 2010, our installed capacity of nuclear power will reach 12 million kw, which is equivalent to 80 million tons of CO₂ emission reduction. We will strive for the target of 40 million kw, which was regulated in **《The Medium and Long Term Nuclear Power Plan (2005-2020)》**, that nuclear power will account for over 5% of total installed capacity of power in 2020.

Presently, China's biomass power generation mainly includes agricultural and forestry waste power generation, waste generation and methane power generation. By the end of 2007, the installed capacity of biomass power generation was about 3 million kw. Biomass liquid fuel is an important substitute for oil, including fuel ethanol and bio-diesel. In 2005, the output of fuel ethanol ranked third in the world, second only to Brazil and the United States. In 2006, our annual fuel ethanol production capacity reached 1.32 million tons and it is expected that in 2010, the number will reach 5.22 million tons, which will exceed the 3 million tons' target regulated in **《The 11th Five-Year Renewable Energy Development Plan》**.

Vigorously developing methane in rural area, promoting rural renewable energy technologies, such as solar energy and the stoves which consumes less firewood and coal. By the end of 2007, there were over 5000 medium and large scale bio-digesters in China, more than 27 million household biogas digesters, which were mainly used as fuel by farmers, each year it may replace 16 million tce, equivalent to 44 million tons of CO₂ emission reduction.

IV. To strengthen the cooperation among Northeast Asia in energy saving and emission reduction and renewable energy fields.

1. To strengthen the energy saving and emission reduction cooperation in Northeast Asia;

China owns large market with tremendous energy saving potential and China will to enhance comprehensive cooperation with the nations in Northeast Asia in the aspects of EE technology and energy saving service to explore the energy saving potentials. The main energy in China is coal, strengthening the R&D and cooperation in the technology of clean coal could reduce more CO₂ emission.

2. To strengthen the cooperation in R&D and utilization of new energy and renewable energy in Northeast Asia;
3. In order to cope with climate change, all nations in Northeast Asia should strengthen the technology cooperation in mitigation and adaptation.

6. Electrification for Green Future

Inuma Yoshiki

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Introduction

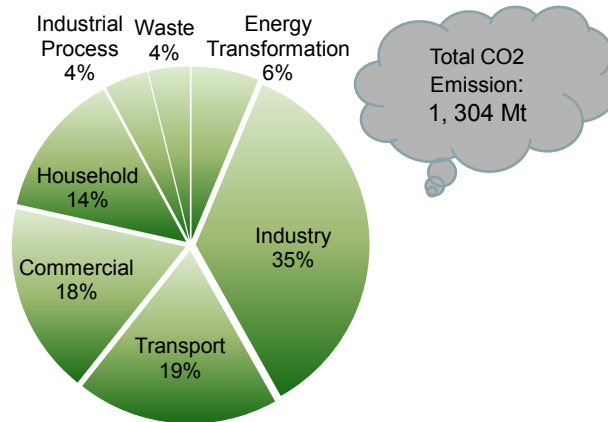
The world faces two unprecedented challenges. One is a challenge involving natural resources. Reflecting the rise of newly emerging countries on global scale, many resource prices have increased recently. For both industrialized countries and newly emerging countries, therefore, securing energy supply is the most critical issue from the energy security perspective. Another challenge is global warming. GHG issues have literally become major concerns for global community.

The purpose of this paper is to characterize Japan's CO₂ emission and suggest electrification as an effective measure to mitigate global warming. Specifically, I will take up heat pumps and electricity vehicles as viable options for not only Japan but also North East Asian countries.

Current status of Japan's CO₂ emission

Japan is the fifth largest emitter of CO₂ in the world. Japan emitted a total of 1.304 billion tons of CO₂ emissions in 2007. CO₂ emissions accounted for 95% of GHG emissions in the same year. Growth in CO₂ emissions has been notable in the household and commercial sectors. These two sectors accounted for 32% of total CO₂ emission in Japan (Figure 1). CO₂ emissions in the residential sector rose by 41.2% compared to their 1990 levels. Commercial sector increased their CO₂ emissions by 43.8% in the period of 1990-2007 (Table 1).

Figure 1. CO2 Emission by Sector (2007)



Source: Ministry of Environment

<Figure 6.1>: CO2 Emission by Sector (2007)

The growth in the household sector is attributable to greater energy consumption by household appliances, which have grown in size and diversified, and an increase in the number of households. In the meantime, the commercial sector increased its CO2 emissions due to greater use of air-conditioning and lighting facilities associated with the expanded total floor space of offices and stores and the introduction of office automation equipment.

The industry sector accounting for 35% in 2007 and the industrial process are the sectors which registered negative growth in the same period. Analysis of reduction of CO2 in these sectors is beyond the scope of this paper. I just point out here that industry efforts to improve energy efficiency and a change in the industry structure are major factors which brought about reduction of CO2 emissions.

Table 1. CO2 Emission By Sector (1990~2007)

Sector	1990 (Mt CO2)	2007(Mt CO2)	2007/ 1990 (%)
Industry	482	471	-2.3
Transport	217	249	14.6
Commerce	164	236	43.8
Household	127	180	41.2
Energy Transformation	67.9	83	22.2
Industrial Process	62.3	53.7	-13.8
Waste	22.7	30.8	35.6
Total	1,144	1,304	14.0

Source: Ministry of Environment

<Table 6.1>: CO2 Emission by Sector (1990-2007)

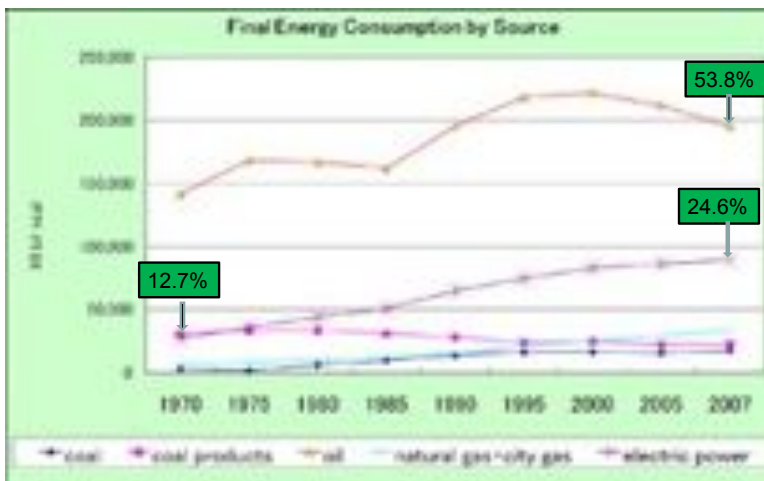
Consequently, household and commercial sectors are now major target in order to reduce CO2 emissions in Japan.

3. Electrification to tackle global warming

There are a variety of ways to reduce CO2 emissions. One way is to electrify economic activities, given clean generation sources like renewable energies and nuclear. Japanese economy still depends on fossil fuels heavily, in particular oil. It still accounts for more than half in total final energy consumption. In this connection, electric utilities accounting for one third of CO2 emission in Japan succeeded in diversifying generation sources after oil crisis in 1970's. Oil-fired electric generation accounted for more than 70% in 1973. It is now less than 10% in generation mix.

Electrification rate for total economies has increased from 12.7% in 1970 to 24.6% in 20078 (Figure 2). It goes without saying that this is due to attributes of electricity as convenient, clean and versatile energy. For the industry sector, the share of oil has been declining. It was 66% in 1970 while being 45% in 2007. Meanwhile, the share of electricity increased continuously from 14.8% to 24.1% in the same period (Figure 3).

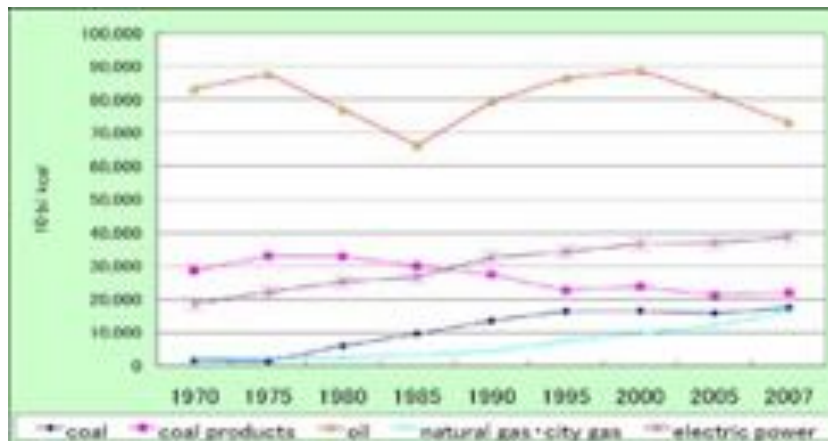
Figure 2. Electrification in Economies



Source: Institute of Energy Economics

<Figure 6.2>: Electrification in Economies

Figure 3. Electrification in the Industry Sector

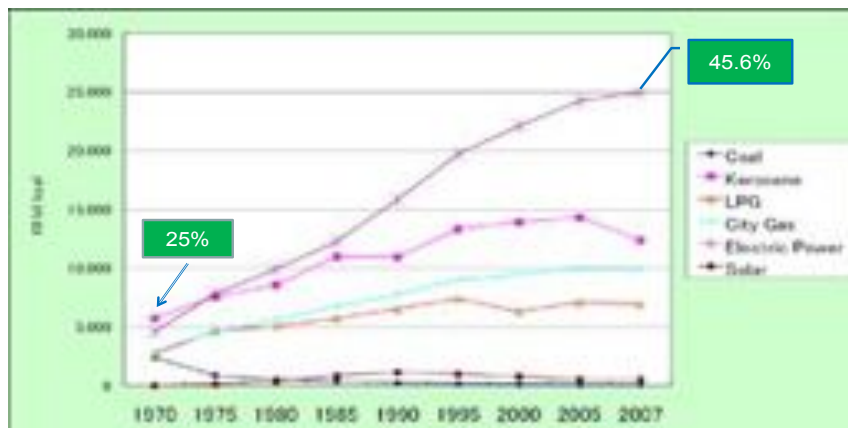


Source: Institute of Energy Economics

<Figure 6.3>: Electrification in the Industry Sector

In the household sector, electrification rate is approaching 50% (Figure 4). This is due to diffusion of various electric appliances. Diffusion of appliances and devices using electricity is going to continue in light of spread of PC and other IT devices. We will also see more all-electric houses and smart houses equipped with IT to control various electric appliances. However, we still use kerosene and LPG for heating, cooling and hot water supply in the household sector. These fossil fuels can be replaced with electricity.

Figure 4. Electrification in the Household Sector



Source: Institute of Energy Economics

<Figure 6.4>: Electrification in the Household Sector

4. CO₂ mitigation by the electric utility industry

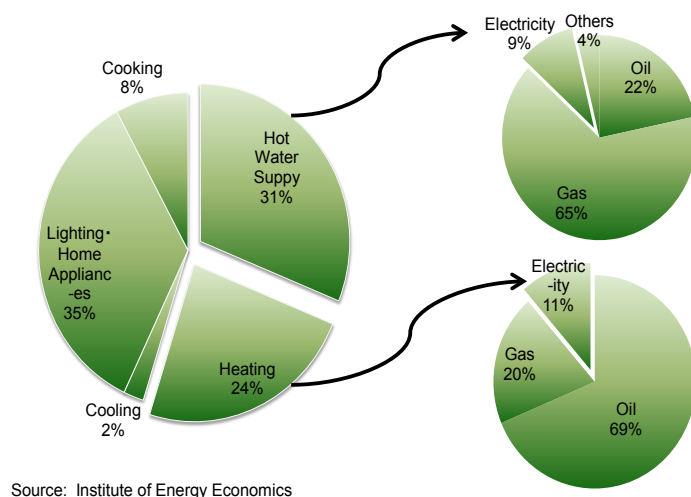
There are two approaches to reduce CO₂ emissions. One is supply-side approach. Another is demand-side approach. Supply-side approach by Japanese electric utility is comprised mainly of use of non-fossil resources such as nuclear and renewable energies. Utilities along with the government have been promoting nuclear energy very actively over the years in light of energy security. Both central and local governments are now very active in diffusing renewable energies such as PV by way of introducing Renewable Portfolio Standard and Feed-in-Tariff. Enhancing generation efficiency by adopting combined cycle and supercritical technologies is another option. Reducing transmission and distribution loss is an effective option too.

Demand-side approach is to reduce CO₂ emissions at the end-use level. Specifically, heat pumps, heat pumps with thermal storage air-conditioning and electric vehicle can reduce CO₂ emissions a great deal by replacing fossil fuels with electricity. There are also untapped energies such as river water and geothermal heat which are heat existing in the nature. Waste heat from incineration plants is another type of untapped energies.

5. Application of heat pumps to the household and commercial sectors

As the above-mentioned, CO₂ emissions in the household sector and commercial sector have been continuously increasing at least over the twenty years. Therefore,

Figure 5. Energy Use in the Household Sector(2006)



Source: Institute of Energy Economics

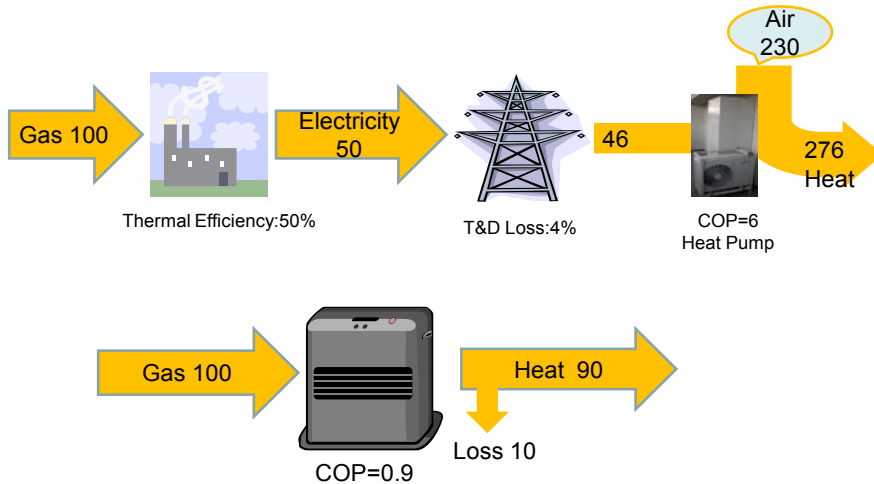
<Figure 6.5>: Energy Use in the Household Sector (2006)

these two sectors are critically important sectors in terms of reducing CO₂ emissions. As the figure 5 shows, energy use for hot water supply and heating accounts for more than 50% in energy use in the household sector. As for heating, oil is a dominant source of heating while electricity accounts for only 11%. Similarly in case of hot water supply, electricity accounts for 9%. If these uses are electrified, then we could reduce large amount of CO₂ emissions.

Heat pump is a device to pump up heat with little electric power. It is defined to be a renewable resource in Japan. EU has included heat pump in the definition of renewable energy in recent so-called Triple Directives. In one sense, grid electricity with heat pump can be considered to be Combined Heat and Power (CHP).

This technology is very efficient because it produces more heat than input. Figure 6 shows heat produced by electricity and heat in the air. Electricity is generated by 100 units of gas in this example. In the process of delivering electricity to end-use level, about half of input is lost. 276 units of heat is produced using 46 units of electricity and 230 units of heat in the air, assuming coefficient of performance is six. In another word, heat pump can produce 6 times of electricity input in this case. In the meantime, if you use fan heater burning 100 units of gas directly, you can obtain only 90 units of heat.

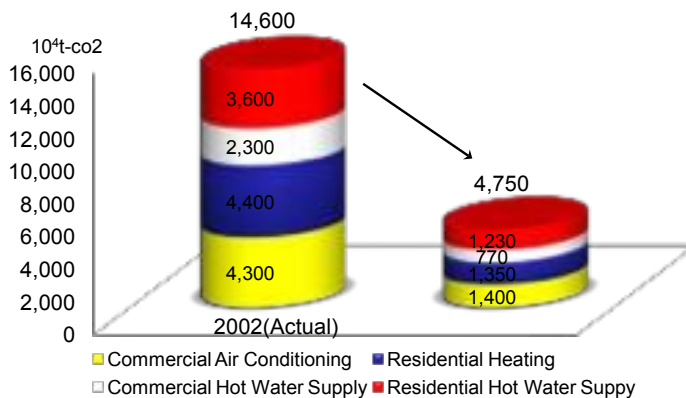
Figure 6. Heat Pump Is Clean and Efficient



<Figure 6.6>: Heat Pump is Clean and Efficient

Therefore, potential reduction of CO₂ emission in household and commercial sectors is enormous by replacing with heat pumps for heating and hot water supply. According to the estimates by Heat Pump and Thermal Storage Technology Center of Japan, it is possible to reduce one hundred million ton of CO₂ (Figure 7).

Figure 7. Potential CO₂ Reduction by Heat Pump

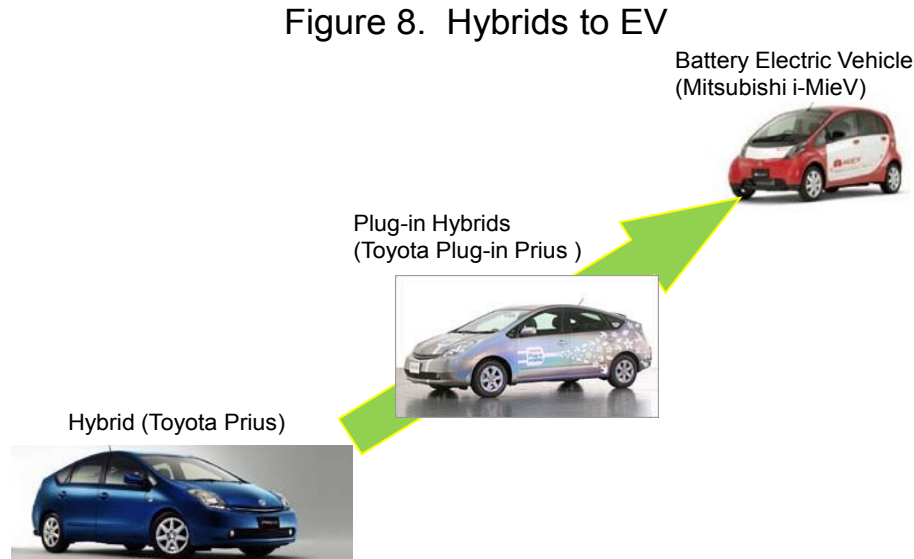


Source: Heat Pump and Thermal Storage Tech. Center of Japan

<Figure 6.7>: Potential CO₂ Reduction by Heat Pump

6. Electricity Vehicle

In Japan, total number of registered vehicle is around 70 million. Registered number of hybrid vehicle is already half million. This year marks the beginning of EV era. Mitsubishi has already begun to sell EV in July 2009 (Figure 8).



<Figure 6.8>: Hybrids to EV

Some features of EV according to estimates by Federation of Electric Power Companies of Japan are as follows:

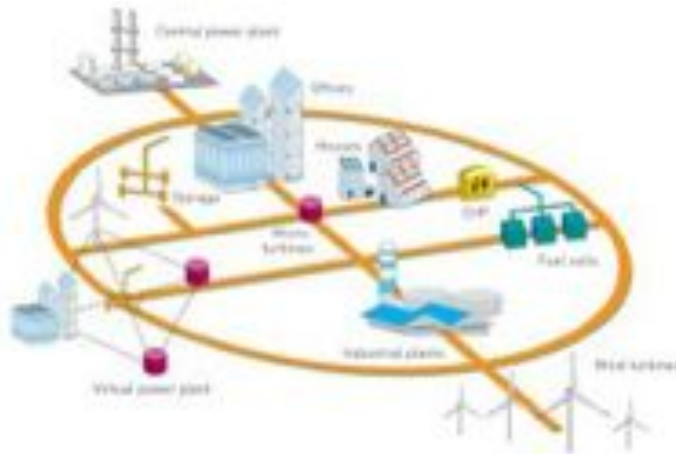
Comparing to gasoline vehicle, EV emits only one-third of CO₂.

The fuel cost of EV is much lower by one-fourth to one-tenth than that of gasoline vehicle.

From the standpoint of electric utilities, PHV and EV can be a new category of electricity consumption. They can contribute to levelize electric load and utilize electricity generated by renewable energies, in particular wind. In addition, EV can be a battery to store electricity to supply to the grid which is called Vehicle to Grid (VtoG). However, we need more sophisticated and digitized grid system called the Smart Grid (Figure 9) in order to accommodate such role as VtoG.

CO₂ emissions by all vehicles in 2007 amounted to 218 million ton which accounted for 16.7% of CO₂ emissions in Japan. Therefore, vehicle electrification can contribute to CO₂ reduction greatly. That is for sure. However, there are a number of barriers confronting with electric vehicles to be diffused. At first, the price of EV is not competitive yet. i-Miev for instance costs around five million yen (US\$50,000, \$1=¥100).

Figure 9. Smart Grid



Source: European Commission, European Smartgrids Technology Platform

<Figure 6.9>: Smart Grid

Battery cost is said to be one-third of the price. Cruising range is very short, one-fourth of conventional vehicles. We need another technological breakthrough from lithium ion battery to new type of battery (Table 2).

Table 2. Vehicle Specifications (BEV)

		
Name	i-MiEV	Stella
Manufacturer	Mitsubishi Motors Corp.	Fuji Heavy Industry Ltd.
Length-Width-Height	3,395-1,475-1,600 (mm)	3,395-1,475-1,660 (mm)
Weight	1,080 kg	1,060 kg
Passengers	4	4
Max. Power	47 kW	40 kW
Max. Speed	130 km/h	100 km/h
Cruising Range	160 km	80 km
Type of Battery	Li-ion	Li-ion
Battery Capacity	16 kWh	9.2 kWh
Time to Recharge	Normal 14h / 7h	Normal 8h / 6h
Normal AC100/200	Fast 15min (Up to 50% SOC)	Fast 15min(Up to 80% SOC)
Fast Charger	30min (Up to 80% SOC)	
other		Based on R1e

Source: Mitsubishi and Fuji

<Table 6.2>: Vehicle Specifications (BEV)

7. Concluding Remarks

In sum, we need both demand-side and supply-side options in order to mitigate CO₂. In light of CO₂ emissions in the household and commercial sectors, however, electrification on the demand side is an effective measure to reduce CO₂ emissions. Heat pumps are in particular a viable option and proven technologies are already available. Vehicle electrification is another promising means for a low carbon society though there remain a number of hurdles to cope with from now on. Japan is vanguard in the development of energy-saving technologies. These leading edge technologies can be key options for CO₂ reduction in North East Asian countries.

Energy Session Conclusions: International Expert Workshop for Northeast Asian Energy Cooperation

Two energy sessions were held at the NEAEF Annual meeting. This was the session on *Energy Cooperation in Northeast Asia*. This session showcased the opportunity for cross-border cooperation created by economic recovery conditions. The second session was on *Green Energy Cooperation and Partnerships in Energy Efficiency and Conservation*. The second session informed the participants about the new Green Growth Policy of the Republic of Korea, provided information on the tangible recent achievements within China in energy efficiency and reduction of greenhouse gas emissions, and featured technological solutions, specifically the use of electricity within Japan, were offered as a significant pathway for energy efficiency and emissions reduction.

In the first session, presentations included significant detail about Global factors such as restructuring of energy markets, the problem of carbon emissions and global climate change, and a new US administration with a green energy and environment agenda suggests a significant opportunity to develop regional strategies to diversify sources of energy resources to meet a diverse profile of energy needs. . These strategies should promote stability for the Northeast Asian region and continue to support the region's position as the fastest growing region of the world. It was proposed that Northeast Asia would likely continue to have growing demand for energy resources and that this demand would require significant investment in infrastructure in order to take advantage of real efficiencies in utilizing energy, as well as gaining access to new sources of energy.

In addition to a summary about green growth in Korea and energy conservation in China and Japan, the second session concluded that energy storage and smart-grid technology was identified as areas of particular promise. At the same time at the session, there was a key presentation concerning the Green Growth Policy of the Republic of Korea. Specifically, that Korea proposes a new pathway, via Green Growth Policy, that provides a solution to the issue of climate change, energy vulnerability and economic recovery. Finally, it was recognized by the second session that Northeast Asia should feature its strength as a leader in Green Growth that is broadly defined as an approach that simultaneously promoted economic growth, quality of life, job creation and concern for the environment, especially the role of emissions in global climate change.

International Expert Workshop for Northeast Asian Energy Cooperation Results

Both sessions had very specific and detailed discussion of policy, technology and likely outcomes in redefining issues of energy, green growth, conservation and energy efficiency.

Dr. Zhang reported that in the context of global economic crisis, the economic growth rate of Northeast Asian countries has significantly receded, and energy supply and demand balance has marked reversal, from short supply to oversupply. He added that with the global energy price reduction, together with global economic crisis, that major energy producing and consuming countries in Northeast Asia had an historic opportunity to rebuild the energy structure in this region. Dr. Zhang stated that Northeast Asian countries should take advantage of the opportunity that conflict between energy supply and demand has mitigated, to build confidence, create mutual benefit and take advantage of an environment of a win-win situation. That this

environment could accelerate the promotion of large-scale cross-border energy cooperation projects. Based on their own advantages, Northeast Asian countries should establish a long-term energy cooperation mechanism in Northeast Asia to stabilize the energy market and keep energy supply and demand balance in this region.

Dr. Tichotsky summarize the Obama Administration's "Guiding Principles" and related President Obama Administration's press statement "To take this country in a new direction, the President is working with Congress to pass comprehensive legislation to protect our nation from the serious economic and strategic risks associated with our reliance on foreign oil and the destabilizing effects of a changing climate. Policies to advance energy and climate security should promote economic recovery efforts, accelerate job creation, and drive clean energy manufacturing....," and further that the Administration would begin by investing \$150 billion over ten years in "energy research and development to transition to a clean energy economy." Dr. Tichotsky pointed out that these goals were rather unrealistic given the scale of foreign imports, especially from places close to home like Mexico and Canada, and that \$150 billion is dwarfed by the actual scale of the oil and gas industry. He made detail references to the North American gas market, as well as the potential role of pipeline natural gas from Alaska and Arctic Canada. In general, he added, that financing the capital investment in new energy sources, new energy infrastructure or new energy technology requires conditions that are not being met and pointed out that probably, the most effective place for revolutionary technology development is with entrepreneurs, yet that is not the focus of government funding.

Dr. Gulidov presented the work related to energy as part of the Greater Tumen Initiative. Specifically he described the Tumen Initiative's *Energy Policy Coordination and Co-operation*. The intention is to develop the GTI Energy Board as effective regional energy cooperative mechanism. In addition, there is an effort to identify and further promote new and ongoing GTI energy cooperative activities. *There is also the attempt to expand Capacity Building* through further assistance to GTI member countries in human capacity building through education and training programs, joint studies and workshops. Also the GTI program attempts to help in *reducing non-physical barriers through the support of the transparency of the institutional environment in the GTI member countries*. Moreover there is an attempt to work on *Partnership Building* through the creation of an effective cooperative network among energy companies, think-tanks, financial institutions and other relevant organizations and establishment and promotion of a region-wide database on energy-related information.

Mr. Toh presented a very effective keynote address about Green Growth and Korea. In his address he related the importance of Green Growth for the Korean government. Green Growth is not "Plan B," it is "Plan A" for the Korean government. It is the strategy of change that jumps over the chasm and problems of climate change and energy costs. It is also a concept of creativity that opens all possibilities. He gave quite a detailed set of strategies that would be used by the Korean government to implement the Green Growth strategy. This is outlined in his presentation within this volume.

Dr. Uchida presented the idea that natural gas was a quick way to cut CO2 emissions and to secure energy in NEA. He pointed out that renewable energy supplies, such as solar and wind power, represented an unstable supply. At the same time huge gas fields are close by Northeast Asia, such as Russia Far East, Australia, Southeast Asia and Central Asia. Given that it was likely that almost the entire power generation infrastructure in Japan and Korea would likely need to be replaced. The advantage of replacing conventional coal-fired generation by latest gas

combined cycle could cut CO₂ emissions by more than half. Dr. Uchida noted that for the NEA Energy Community priorities included to start with the integration of infrastructure in energy (gas and electricity), transport and communications in NEA countries. The availability of such infrastructure and efficiency encouraged entrepreneurship and investments, leading to economic prosperity in the region. Dr. Uchida pointed out that climate change is a long-term issue, which will need to be tackled over the next 50 years or more and added that if we delay our actions, our cumulative emissions will require steeper reductions and lead to higher costs. He concluded that any actions to tackle with the climate challenge needed huge investment and international cooperation and that the global energy-climate challenges require a global approach.

Mr. Yoshiki provided a very compelling review of how electrification might be a key to reducing greenhouse gas emissions. He noted that CO₂ mitigation needs both demand and supply options and that electrification at the end-use level is effective measure to reduce CO₂ emission. He further added that Japan is vanguard in the development of energy-saving technologies, especially in heat pumps, and that these leading edge technologies can be key options for CO₂ reduction in NEA countries.

Dr Shen made a presentation on the progress China has made in energy saving and greenhouse emission reduction, as well as the country's achievements in developing and using of renewable energy sources. He noted that energy saving is the key measure to cope with climate change and that China's policy attaches great importance in energy saving and its relation to reducing emission and that the country considered its progress in energy savings and emissions reduction remarkable in recent years. He added that part of China's success is based on the development and use of renewable energy sources. He concluded that to strengthen the cooperation among Northeast Asia in energy saving and emission reduction and renewable energy fields that China could play a significant role since China owns large market with tremendous energy saving potential and China will to enhance comprehensive cooperation with the nations in Northeast Asia in the technology and energy saving service to explore the energy saving potentials. The main energy in China is coal, strengthening the R&D and cooperation in the technology of clean coal could reduce more CO₂ emission. He further hoped that there would be more cooperation in R&D and utilization of new energy and renewable energy in Northeast Asia. Further, in order to cope with climate change, all nations in Northeast Asia should strengthen the technology cooperation in emissions mitigation and adaptation of new technologies.

The overall conclusion from the conference is that significant work on understanding the issues for energy supply and demand, as well as the role of policy, conservation and technological efficiency, in Northeast Asia has been done, especially in 2009. It has been a remarkable year for energy markets, especially prices, given the global financial crisis. The need for a cooperative and long-term strategy in the area of energy, energy infrastructure and financing energy project for the region is likely the key for regional prosperity.

However, much work lies ahead in realizing the overall goals set by Northeast Asia Economic Forum. Specifically, The Forum should accelerate the work on energy, especially as it relates to financing large-scale cross border projects, in the coming year, 2010.

Session IV: Financial Cooperation in Northeast Asia – Steps Towards a Regional Financial Institution for Cooperation and Development

7. Will Northeast Asia's Functional Economic Integration Lead to Formal Regional Economic Integration?

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I. Introduction

In Northeast Asia, functional economic integration seems to have been proceeded rather robustly for the past two decades. The process of economic integration in Northeast Asia economic integration has been one driven by market forces. Although regionalism became a worldwide phenomenon in the 1990s, given factors specific to Northeast Asia including historical legacies, and existence of different political and economic systems, the realization of regionalism in Northeast Asia has long been considered an impossibility.

However, we have recently witnessed new developments in terms of institutional economic integration in the region. In particular, Japan, South Korea and China joined the trend towards worldwide regionalism and began to form bilateral free trade agreements (FTAs). Although there is still no FTA among Northeast Asian countries, given the active FTA policy adopted by the key Northeast Asian countries, institutional economic integration seems to have become a reachable goal.

On the other hand, a closer look into functional economic integration in Northeast Asia shows that some countries and regions have not actively participated even in functional economic integration. Thus, in Northeast Asia, in addition to the gap between functional and institutional economic integration, there exists a gap between the countries in terms of functional economic integration.

Under these circumstances, what can be done to enhance economic integration in Northeast Asia and achieve a region-wide FTA? In this paper, after reviewing the current status of functional and institutional economic integration in Northeast Asia, I will attempt to assess their prospects for Northeast Asia, and propose concrete ways to reduce the dual gap – between institutional and functional integration/ between integration of core countries (China, Japan, Korea) and isolation of other countries (North Korea, Mongolia, etc) - of economic integration in Northeast Asia.

II. Functional Economic Integration in Northeast Asia

Functional Economic Gap in Northeast Asia¹

Northeast Asia consists of three groups of countries and regions. Group A includes three core Northeast Asian countries, namely, China, Japan, and South Korea, Group B comprises China's

¹ Earlier version of this section was presented at the Kanazawa Conference (Lee 2009).

two Special Administrative Regions (Hong Kong and Macao) and Taiwan, while Group C encompasses two countries (North Korea and Mongolia) and the Russian Far East.²

As shown in Table 1, the share of the intra-regional trade among the three countries has risen in general since 1992. It was within Group A that the most visible increase in the intra-regional trade was made. The share of intra-regional trade between China, Japan, and South Korea went up from 14.0 percent in 1992 to 22.2 percent in 2007. During the same period, the trade dependency of Japan and South Korea on Northeast Asian economies increased substantially. Thus, although China's trade dependency on Northeast Asia decreased, when it comes to the three core Northeast Asian countries, functional economic integration seems to have proceeded robustly. When Group B is added, the increase was not very impressive, even though the absolute level of the share of intra-regional trade rose considerably.

<Table 7.1>: The Share of Intra-regional Trade

(Unit: %)

Northeast Asia	1992	2000	2007
Group A	14.0	20.3	22.2
Group A+B	37.7	41.5	41.4
Group A+C	15.3	20.7	23.2
Group A+B+C	37.9	41.1	41.1

Note: In Group C, the trade of Russia was used instead of that of the Russian Far East.

Sources: IMF. 2009. *Direction of Trade Statistics*; Taiwan's Bureau of Foreign Trade [online].

² We may also include Eastern Siberia or the whole of Siberia.

<Table 7.2>: Trade Dependency of Each Country on Northeast Asian Economies

(Unit: %)

	1992	2000	2007
China	58.1	42.6	37.7
Japan	25.6	32.8	37.6
South Korea	31.9	37.3	42.3
North Korea	61.9	38.5	46.4
Russia	14.3	12.1	10.2
Mongolia	80.0	70.0	77.9

Note and sources: The same as in Table 1.

As for Group C, it did not seem to have contributed to the increase in the intra-regional trade. During the same period, Russia's trade dependency on Northeast Asian economies has been low, while the trade dependency of North Korea and Mongolia on Northeast Asia actually decreased, even though the level of their regional trade dependency has remained high. Therefore, it is difficult to argue that Group C countries are integrated with Group A countries.

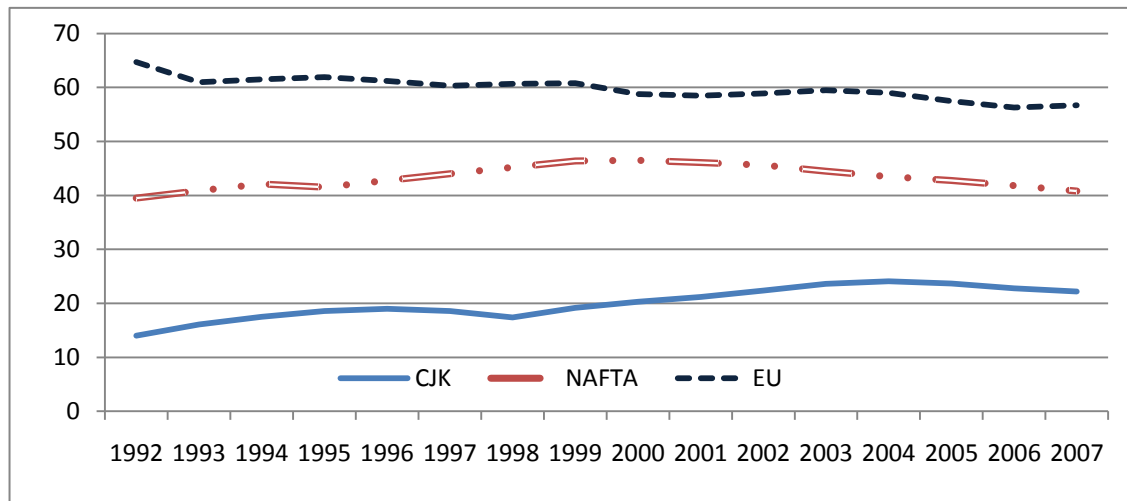
The causes of the low level of integration of Group C countries comprise of many factors: economic factors such as low degree of marketization, low level of foreign trade, lack of infrastructure, and non-economic factors such as security tension (for North Korea), and geographic remoteness (for Mongolia and Russia).

Thus, in terms of trade, China, Japan and South Korea constitute the core group among Northeast Asian countries and regions, while North Korea, Mongolia and Russian Far East do not seem to be included in regional economic integration.

Trade between China, Japan and Korea

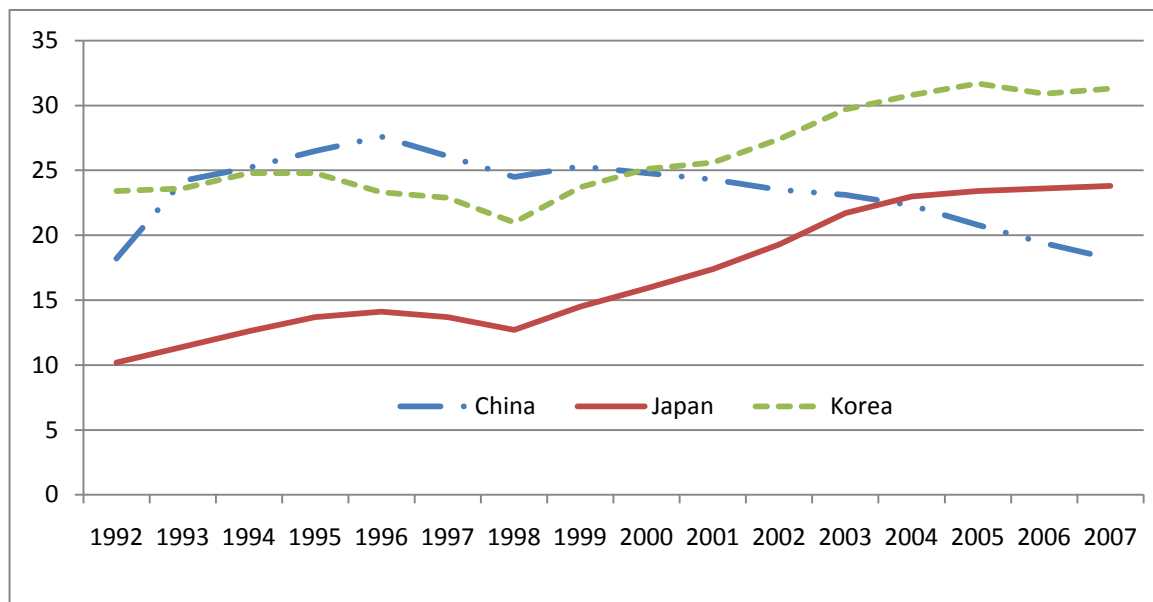
The share of intra-regional trade between China, Japan and South Korea has generally been on the rise. As shown in Figure 1, it soared from 14.0 percent in 1992 to 19.6 percent in 1996 before diminishing during the Asian Financial Crisis of 1997-8. It would increase again and amounted to 24.1 percent in 2004 before decreasing gradually to 22.2 percent in 2007.

<Figure 7.1>: Share of Intra-regional Trade between China, Japan and South Korea



Source: Annex Table 1.

<Figure 7.2>: Share of Intra-regional Trade of China, Japan and South Korea



Source: Annex Table 2.

As for each Northeast Asian country's trade dependency on the other countries, China differs from Japan and South Korea. Japan's dependency on China and South Korea increased from 10.2 percent in 1992 to 23.8 percent in 2007, while South Korea's regional dependency rose from 23.4 percent in 1992 to 31.3 percent in 2007 (see Figure 2). On the other hand, China's regional dependency soared from 18.2 percent in 1992 to 27.6 percent in 1996 before diminishing gradually to represent 18.2 percent in 2007. Thus, it was the weakening of China's regional

dependency that mainly contributed to the recent decrease of the share of intra-regional trade among the three Northeast Asian countries.

III. Institutional Economic Integration in Northeast Asia

Emergence and Proliferation of FTAs in Northeast Asia

Northeast Asia lags far behind other major economic regions in term of regionalism. It was at the turn of the century that Japan became the first Northeast Asian country that concluded an FTA. Then, South Korea and China also jumped on the FTA bandwagon, and all three countries concluded many bilateral and plurilateral FTAs within a relatively short period of time.

Japan signed economic partnership agreements (EPAs) with Singapore, Mexico, Brunei, Indonesia, Malaysia, the Philippines, Thailand, Vietnam, ASEAN, Chile, and Switzerland. South Korea concluded FTAs with Chile, Singapore, the EFTA, ASEAN, the United States, and India. China signed a Closer Economic Partnership Arrangement (CEPA) with both Hong Kong and Macao, and an FTA with Chile, Pakistan, ASEAN, New Zealand, and Singapore.

There are also many ongoing FTA negotiations. South Korea is in FTA negotiations with Japan, Canada, Mexico, the European Union (EU), the GCC (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the UAE), Peru, Australia, and New Zealand. Japan is in FTA negotiations with South Korea, Australia, India, and the GCC, while China is negotiating FTAs with Australia, the GCC, Iceland, and Peru. In addition, there are many FTAs under study or preparation involving China, Japan, or South Korea.

Despite the fact that the three core group countries have pursued active FTA policies, no tangible progress has been made in terms of institutional economic integration in Northeast Asia, and there is no FTA among Northeast Asian countries. In fact, South Korea-Japan FTA negotiations started in December 2003 and have been stalled since 2004, while the official tripartite joint study on a Korea-China FTA, which started in March 2007, has yet to be concluded. Additionally, negotiations on Investment Agreement between China, Japan, and Korea have been under way since March 2007.

Recent Developments related to Institutional Economic Integration in Northeast Asia

The very first mechanism related to Northeast Asian institutional economic integration was created in November 1999. The leaders of China, Japan and South Korea got together for the first time in Manila during the ASEAN+3 (China, Japan and South Korea) Summit Meeting, and Trilateral Summit Meetings took place regularly within the framework of ASEAN+3.³ At the first meeting, the leaders of the three countries agreed on launching a joint study to enhance economic cooperation between the three countries.

Based on this agreement, the Development Research Center (DRC) of China, the National Institute for Research Advancement (NIRA)⁴ of Japan, and the Korea Institute for International

³ In 2005, the Summit was not held due to Prime Minister Koizumi's visit to Yasukuni Shrine.

⁴ Since 2009, the Institute of Developing Economies (IDE-JETRO) is the representative institution for Japan.

Economic Policy (KIEP) began a joint research project in November 2000. During the first two years, the trilateral joint study was focused on issues of trade facilitation and investment among the three countries, and the above three institutions have conducted a series of joint research work on a China-Japan-Korea FTA since 2003. Each year, the three institutions presented the policy recommendations based on their joint research to the leaders of the three countries during the trilateral summit meeting.

In December 2008, a cornerstone for institutional economic integration seemed to be laid when the first independent Trilateral Summit Meeting between the leaders of China, Japan and South Korea was held in Fukuoka, Japan, with the Second Trilateral Summit Meeting to take place in China in 2009. This Summit, which is organized independently from the ASEAN+3 framework, provides the first real opportunity to discuss regional issues in Northeast Asia among the three key countries. In my view, it has the potential to evolve into a framework for regional economic integration.

On the other hand, there is another ongoing economic integration process that seems more active, at least in institutional terms. In the wake of the Asian Financial Crisis of 1997-8, it was East Asia that has become the main arena for regional economic integration. The ASEAN+3 framework has been consolidated with Summit Meetings, Ministerial Meetings and Senior Officials Meetings. It contributed especially to financial cooperation among ASEAN+3 countries with the Chiang Mai Initiative, which was a bilateral currency swap arrangement, and by agreeing on the Chiang Mai Initiative Multilateralization in May 2009. Furthermore, within the ASEAN+3 framework, two joint studies have been conducted by experts from ASEAN+3 countries on an East Asia FTA (EAFTA) following the decisions of the AEM+3 (ASEAN+3 Economic Ministers Meeting)⁵.

IV. Prospects for a Northeast Asia FTA

As mentioned earlier, there are several ongoing FTAs, which are at different stages, pertinent to a Northeast Asia FTA. The Korea-Japan FTA negotiations, which started in December 2003, have been suspended since November 2004, whereas the official tripartite joint study on a Korea-China FTA is under way. With regard to a China-Japan-Korea FTA (CJK FTA), the aforementioned trilateral joint research has been conducted between the three institutes (DRC/NIRA/KIEP) since 2003. In addition, considering that the three countries have been actively pursuing an FTA policy, it is evident that the most likely way to achieve an FTA for Northeast Asia will be through a CJK FTA.

Then how do we bring a CJK FTA into being? There exist several possible scenarios for achieving a CJK FTA. First, the three countries may make a direct attempt for a CJK FTA. In this case, the ongoing trilateral joint research could evolve into an official tripartite joint study followed by negotiations on a CJK FTA. Second, it could be reached through a series of bilateral FTAs. For instance, a Korea-Japan FTA and a Korea-China FTA, when they are concluded, could create an environment leading to a CJK FTA. Lastly, a region-wide FTA in East Asia

⁵ The first Joint Expert Group, initiated by the Chinese government, reported to the AEM+3 in August 2006, and the EAFTA Phase II Study, initiated by the Korean government, is to submit its report to the AEM+3 in August 2009.

could be an additional variable, because an EAFTA could result in creation of a de facto CJK FTA.

Given the current economic and political situation in Northeast Asia, it is not likely that we will see the formation of a CJK FTA in the near future. There still exist various obstacles to institutional economic integration in Northeast Asia. On the one hand, existence of sensitive sectors, such as agriculture, in Japan and South Korea, constitutes a major impediment. Moreover, there are many serious obstacles coming from non-economic factors, such as troubling historical issues, rivalry between China and Japan, and a lack of community spirit. In fact, the Japanese government does not seem ready to pursue a CJK FTA. As for the Korean government, it would be rather difficult to be involved in CJK FTA negotiations in the short-run, because Korea must first get the Korea-US FTA ratified, and finish the negotiations on the Korea-EU FTA. For the same reason, it may not be easy for the Korean government to begin bilateral FTA negotiations with either China or Japan for the time being.

However, since all three countries have already concluded FTAs with ASEAN, if movements towards a region-wide FTA in East Asia gain momentum, an EAFTA may even precede a CJK FTA. Although the three Northeast Asian countries have to decide whether they are willing to pursue an EAFTA prior to forming a bilateral or trilateral FTA among Northeast Asian countries, considering that ASEAN has been in the driver's seat concerning the process of institutional economic integration in East Asia, the formation of an EAFTA may very well depend on the ASEAN countries.

If an EAFTA precedes a CJK FTA, it will be difficult to foresee whether a de facto CJK FTA thus created will be a positive factor for institutional economic integration in Northeast Asia by creating a new momentum, or a negative one by diverting the focus of regional economic integration from Northeast Asia to East Asia.

V. Future Tasks

In this treatise, I sought to find out whether functional economic integration will lead to institutional economic integration in Northeast Asia. A closer look at functional economic integration as well as institutional economic integration in Northeast Asia shows that the answer is so far negative. We have seen that there are still no FTAs between China, Japan and South Korea, in spite of growing trade inter-dependency among them, and that a CJK FTA, which is a key element for institutional economic integration in Northeast Asia, is not likely to be achieved in the near future. Moreover, even functional economic integration has not proceeded smoothly among all Northeast Asian countries and regions. In particular, we noted that North Korea, Mongolia and the Russian Far East remain isolated from ongoing regional economic integration. Therefore, Northeast Asia faces a dual task of seeking a CJK FTA in order to achieve institutional economic integration, and bringing several isolated economies into Northeast Asian functional economic integration process.

As mentioned earlier, there exist both economic and non-economic factors that have hampered institutional economic integration. Considering that sensitive sectors constitute impediments for every FTA and are not specific to Northeast Asia, non-economic factors such as historical legacies, national rivalries and lack of community spirit seem to be the more serious lingering issues to be dealt with for achieving a CJK FTA. When it comes to functional economic

integration, aside from the North Korean issue that is closely linked to the regional security issue, it is the lack of economic infrastructure including market mechanisms and transportation facilities that constitutes the most significant obstacle.

Among these obstacles, there is reason to believe that impediments to a CJK FTA are relatively easier to overcome. In addition to the increasing economic inter-dependency among the three core countries, there are many issues the three core countries should cooperate on at sub-regional, regional and global levels. Thus, the growing need for closer cooperation among them is likely to prevail over remaining non-economic impediments. Especially, if the leaders of three countries acknowledge the fact that the remaining obstacles could be mitigated and overcome by closer economic ties, a CJK FTA may be realized sooner than many people expect.

On the other hand, the task of reducing the gap between the core group and the rest in terms of functional economic integration is likely to take longer, as building economic infrastructure and market mechanism are tasks that require lots of time. Moreover, there is the complex and unpredictable North Korean issue.

Therefore, in order to enhance economic integration in Northeast Asia, our efforts should be focused on institutionalization of regional economic integration, with the CJK FTA being the initial goal. However, our institutionalization efforts should not be limited to forming a CJK FTA. What then should be done aside from working towards a CJK FTA?

Considering that a CJK FTA is not likely to be achieved in the near future and that there is still no region-wide body for economic cooperation, I would like to propose again the establishment of a regional economic cooperation entity called "Council for Northeast Asian Economic Cooperation (CNAEC)."⁶

Given the economic and political situation in Northeast Asia, the council would start first with the core Northeast Asian countries - namely China, Japan and South Korea. At the council, the three countries would discuss various ways to enhance economic cooperation among themselves as well as Northeast Asia as a whole in such areas as trade, investment, environment, telecommunications, transportation, energy, finance and macroeconomic policy coordination. At the same time, the council could serve as a forum where the three countries would exchange views with the aim of better preparing themselves for other regional and multilateral economic fora. This council would not produce any legally binding decisions. It would be a miniature APEC, and being small in size, it would function more effectively by concentrating on the regional issues of interest to all three countries.

Once the council is established and meets its initial expectations, its membership will be open to other regional countries which are ready to join it. Furthermore, for certain areas of economic cooperation like energy development, countries outside of the region could be granted special status and participate in the activities of the council.

Thus, in the short-run, this council would help enhance functional economic integration between China, Japan and South Korea, and could contribute to institutional economic integration by discussing the possibilities of forming a CJK FTA. In the mid-term, it would be instrumental in promoting various investment projects such as energy development and infrastructure building in hitherto isolated parts of Northeast Asia, thus narrowing the gap in functional economic

⁶ This idea was first published in Lee and Hong (1999) and Lee (2000), and also discussed in Lee (2003).

integration in the region. In the long-run, it would help the isolated countries to join a Northeast Asia FTA.

Lastly, the aforementioned independent trilateral summit meeting among the leaders of China, Japan and South Korea could provide a good opportunity for the council to be established in the coming years. The trilateral summit meeting has just been created at a time when the role of the three Northeast Asian countries is becoming crucial in many multi-layered international fora, and a framework similar to the council will be needed to support the summit meeting. If the summit is supported by the council, it will surely contribute to the formation of a CJK FTA, and at the same time to enhancement of functional economic integration in Northeast Asia.

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Taiwan's Bureau of Foreign Trade [online] - <http://eweb.trade.gov.tw>

UNCTAD [online] - <http://www.unctad.org>

<Annex Table 7.1>: Share of Intra-regional Trade between China, Japan and South Korea

	CJK	Northeast Asia	NAFTA	EU
1992	14.0	28.9	39.5	64.7
1993	16.1	28.7	40.9	61.0
1994	17.5	30.0	42.1	61.5
1995	18.6	30.4	41.5	61.9
1996	19.0	30.6	42.8	61.2
1997	18.6	31.0	44.0	60.3
1998	17.4	29.5	45.2	60.7
1999	19.2	30.2	46.4	60.8
2000	20.3	31.4	46.5	58.8
2001	21.2	32.6	46.1	58.5
2002	22.4	34.3	45.6	58.9
2003	23.6	35.8	44.5	59.5
2004	24.1	36.1	43.5	59.0
2005	23.7	35.7	42.8	57.5
2006	22.8	35.1	41.8	56.3
2007	22.2	34.4	40.8	56.7

Source: <http://www.unctad.org>

<Annex Table 7.2>: Share of Intra-regional Trade of China, Japan and South Korea

Year	China	Japan	Korea
1992	18.2	10.2	23.4
1993	24.2	11.4	23.6
1994	25.2	12.6	24.8
1995	26.5	13.7	24.8
1996	27.6	14.1	23.3
1997	26.1	13.7	22.9
1998	24.5	12.7	21.0
1999	25.3	14.5	23.7
2000	24.8	15.9	25.1
2001	24.3	17.4	25.6
2002	23.5	19.3	27.4
2003	23.1	21.7	29.7
2004	22.3	23.0	30.8
2005	20.8	23.4	31.7
2006	19.4	23.6	30.9
2007	18.2	23.8	31.3

Source- <http://www.unctad.org>

8. Northeast Asian Development Finance Cooperation: The New Bank and the Support Network

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&

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Abstract

Northeast Asia needs institutions of development financial cooperation as well as development finance support network. Agencies for development finance cooperation and those for development vision formulation are both obliged to demonstrate in concrete form that investment into Northeast Asia would be profitable and/or bring positive externalities. Without financial resources, no vision or projects can be realized. Without development vision, investment will be deterred. Reasons that the areas with potential development capacity have not received much direct investment from outside the region include (1) the region lacked a “regional grand design,” which should demonstrate in obvious form strategies to construct a Northeast Asian economic network; (2) a comprehensive framework for financial resources to upgrade infrastructure did not exist in Northeast Asia. There are also problems that must be solved to establish a development finance mechanism and to optimize economic development of Northeast Asia. In particular, the DPRK, as seen in the Tumen River Area Development Programme, has posed a “political difficulty” against the creation of Northeast Asian development finance schemes. Here we propose the strategic construction of a development finance support network as a development funding cooperation mechanism with a development vision.

Recent Trend on Financial Cooperation in Northeast Asia

It has been around 18 years since the argument over the foundation of the Northeast Asian Development Bank (NEADB), as well as the design of financial cooperation in Northeast Asia, was addressed. The construction of financial strategies in Northeast Asia has been a long, pending issue regarding the economic development of the area. With the financial crisis originating in the United States, the shape of Northeast Asian development finance cooperation is being explored. The track-one Japan-China-ROK Trilateral Summit was held in December 2008 and a new framework is being sought.

(1) 17th Northeast Asia Economic Forum

In October 2008, amid the global financial crisis, the 17th Northeast Asia Economic Forum was held in Tianjin, where concepts and measures for development finance cooperation in Northeast Asia were extensively discussed.⁷ In the concluding statement of the conference, the establishment of a sub-regional development bank, the "Northeast Asian Bank for Cooperation and Development (NEABCD)", was proposed to have a complementary relationship with the Asian Development Bank, and the "Research Center for Financial Cooperation in Northeast Asia" was proposed to be established at Nankai University in Tianjin, China.

(2) 2nd Northeast Asian Area Cooperation Development International Forum

In June 2009, Northeast Asian Area Cooperation Development International Forum was held in Harbin, China, and proposed on concept of "Northeast Asia Financial Corporation" (NEAFC) establishing a Northeast Asian version of the International Finance Corporation (IFC). The IFC is a member institution of the World Bank Group, and would mostly promote private sector investment by providing guarantees, participating in development finance through co-financing, and even by directly executing equity investment in potentially promising private firms in developing countries.

To make sure that those "new bank" will reflect the genuine needs in Northeast Asia, it is worth looking at the concept and proposals, and examining requirements of development finance cooperation in Northeast Asia

Need for Cooperative Framework in Development Finance

Northeast Asia needs institutions of development financial cooperation as well as development finance support network. Agencies for development finance cooperation and those for development vision formulation are both obliged to demonstrate in concrete form that investment into Northeast Asia would be profitable and/or bring positive externalities.

Without financial resources, no vision or projects can be realized. Without development vision, investment will be deterred. Reasons that the areas with potential development capacity have not received much direct investment from outside the region include (1) the region lacks a "regional grand design," which should demonstrate in obvious form strategies to construct a Northeast Asian economic network; (2) a comprehensive framework for financial resources to upgrade

⁷ Ma (2006) proposes to establish a "Northeast Asia Bank", not "Northeast Asian Development Bank", and to locate its headquarters in Binhai New Area of Tianjin. The operation of the Northeast Asia Bank is proposed to include loan, equity finance, investment co-financing, project trust, and information and technical services, and it is wider than the proposed operations of the NEADB

infrastructure does not exist in Northeast Asia. There are also problems that must be solved to establish a development finance mechanism and to optimize economic development of Northeast Asia. In particular, the DPRK, as seen in the Tumen River Area Development Programme, has posed a "political difficulty" against the creation of Northeast Asian development finance schemes.

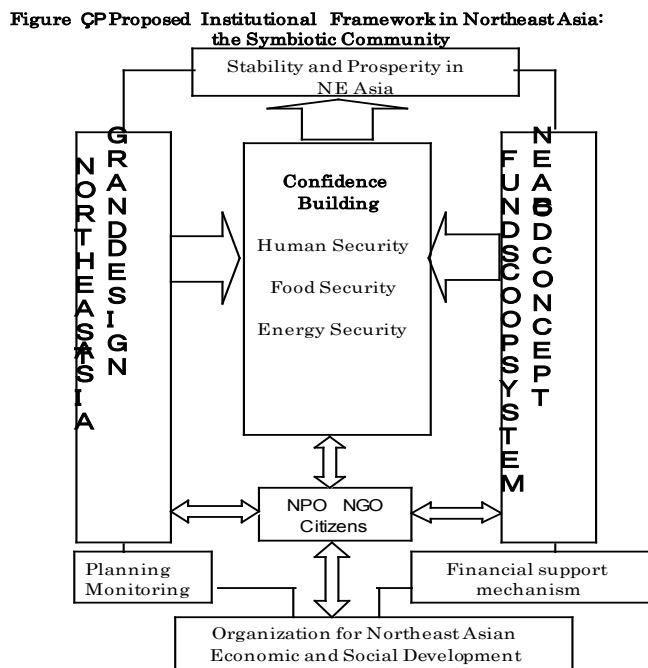
Construction of a Development Financial Support Network

We illustrate the strategic construction of a development finance support network as a development funding cooperation mechanism with a development vision.

(1) Philosophical Framework

The Northeast Asia Symbiosis Area (Fig. 1) presents an ideal design for the future based on peace and substantial financial resources. Three basic conditions in the design are human life security, food security, and energy security. The leading actors to maintain these conditions are the local residents and civil societies. Three components of this design are the "Northeast Asia Development Vision" (the grand design for Northeast Asia), the "Northeast Asian Development Finance Design" (Funds Cooperation System) and the "Northeast Asia Economy and its Social Development Mechanism" (Organization for Asian Economic and Social Development). These provide the complementary supports to the main activities carried out by the local citizens. This fundamental premise was inspired by the view in the "global environmental symbiosis area." The term "symbiosis area" in this paper means the economically cooperative area in Northeast Asia. This presentation proposes a "Regional Development Design by Japan, China, and South Korea" as a possible action plan. It is necessary to re-examine the economic system in Northeast Asia from the aspect of economic rationality based on cooperative security.

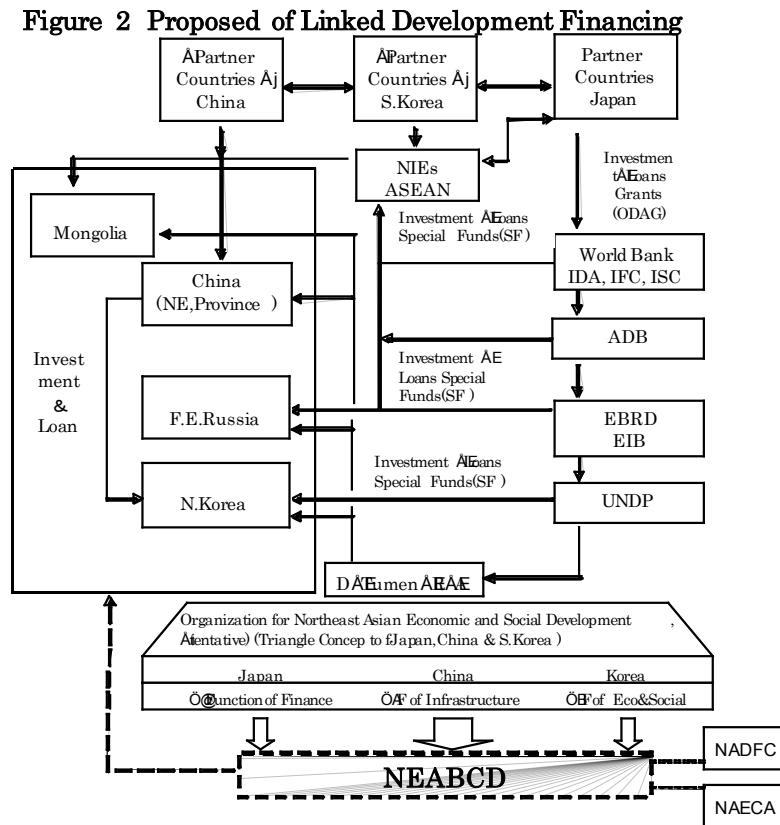
<Figure 8.1> : Proposed Institutional Framework in Northeast Asia



(2) Concept for Linked Development Financing

The theoretical outline of financial cooperation in Northeast Asia (Fig. 2) is a road map for the region. The establishment of the new bank is an essential base for the supply of development fund. The figure indicates that international financial institutions and each government must mutually cooperate. The new bank, illustrated as NEABCD, will play a catalytic role in the development finance project in Northeast Asia, taking advantage of its capital and trust as a regional financial institution. As for a strategy to promote the potential investment demand of Northeast Asia, it is necessary to induce the capital inflow from the private sector by maintaining the loan structure and the technical support system based on the direction of international support organizations.

<Figure 8.2>: Proposed Linked Development Financing



(3) Strategic Construction of a Regional Financial Cooperation Scheme ⁸

In order to implement the grand design for Northeast Asia, we must build a financial support system. Here, we will make some observations concerning what system we could use to obtain financial support. An all-inclusive platform (Fig.3) has to have the functions not only of planning, adjusting, and monitoring, but also of providing financial support, we proposed that the Northeast Asia Economic and Social Development Organization could be established under the all-inclusive platform for grand design promotion. This mechanism can have the following three financial support sub-divisions:

Fund that deals with concessional loans

Facility to deal with private sector capital, investment guarantee, and CDM

Agency that deals with social development, poverty alleviation, and micro-finance

⁸ Discussion on “the Organization for Northeast Asian Economic and Social Development” and “Grand Design in Northeast Asia” was taken from Nakano (2003b) and NIRA (2003).

These subsystems should not necessarily be centralized in headquarters; each can be located in any areas of Northeast Asia, and be supported by the new bank, NEABCD.

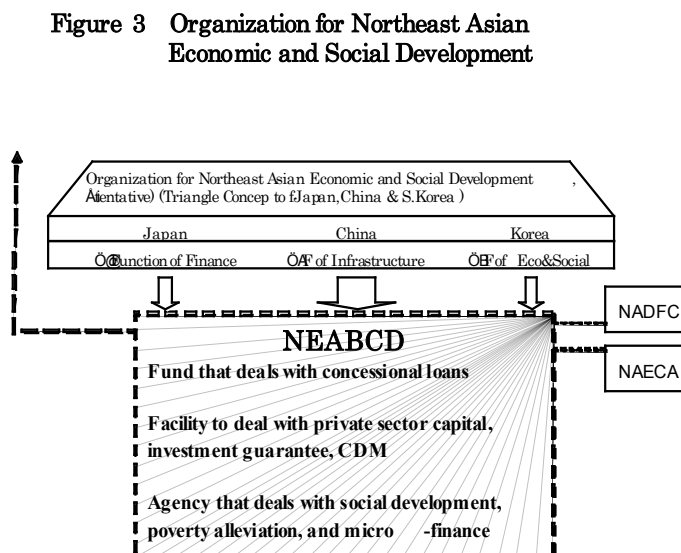
Three major issues need to be handled in Northeast Asia, centered on the Japan-China-Korea triangle. The first is to build infrastructure to improve the developing areas of Northeast Asia (Northeast China, North Korea, Mongolia, and the Russian Far East) where negative effects of the cold war remain. The second is to create a financial system that takes into account the lessons of the 1997 East Asian currency crisis and 2008-09 global financial crisis. The third is to strengthen economic and social functions in order to promote stability on the Korean peninsula

◦

(4) Concept of “Organization for Northeast Asian Economic and Social Development”

One idea is to establish a new international organization to handle these three issues: an Organization for Northeast Asian Economic and Social Development, led by Japan, China, and South Korea. By equally sharing these responsibilities and utilizing their respective comparative advantages, Japan, China, and South Korea could together serve three functions: develop Northeast Asian infrastructure in China, act as a financial mechanism in Japan, and promote stability on the Korean peninsula through economic and social development.

<Figure 8.3>: Organization for Northeast Asian Economic and Social Development



Two organizations for financial cooperation in Northeast Asia should be introduced here: the Northeast Asia Development Financing Council (NADFC) and the Northeast Asia Export Credit Agency (NAECA). NADFC was inaugurated in May 16, 2004, corollary to the minutes of understanding, by Korea Development Bank, China Development Bank, and Mizuho Corporate Bank. NAECA was inaugurated in May, 2005, by Korea Export-Import Bank, China Export-Import Bank, and Japan Bank for International Cooperation. The formation of NADFC and NAECA will become an important step toward regional cooperation. Both are generally regarded as the preliminary components in the NEADB design, as they represent the cooperative system of the governmental banks as well as the private banks in Japan, China, and South Korea. At the same time, these two organizations are expected to play a part in the co-financial system of the future NEABCD project.

Suggestions for Further Discussion

This section aims to suggest the requirements of development finance cooperation in the area under the following headings: (1) new direction for international finance cooperation by Japan, (2) additional beneficiaries for the new mechanism, (3) functions requested for a new bank, (4) investing and financing cross-border projects, and (5) cross-border cooperation organization.

(1) New direction for international finance cooperation by Japan

International finance support of Japan focused on financial market restoration after the end of “subprime lending bubble”.

Ultimately, Japanese economic recovery needs global demand-side recovery.

Japanese financial assistance should go to Asian countries, which may lead the recovery of global demand.

Extra effects expected in Asian countries with development potentials, including the Greater Mekong Development Area, which ADB is supporting actively.

(2) Additional beneficiaries for the new mechanism

Japanese regional economic recovery needed

But cannot rely on subsidies from national government

Need to mobilize fund from financial markets or international sources

Financial methods are limited for local governments

Can local government be beneficiaries of loans and investment from the new bank?

Great news if it is YES.

Motivation for more political support for the new bank

(3) Functions requested for a new bank

Functions should include not only mainstream finance, such as loans, guarantee, and investment, but also technical assistance.

Catalyst function is also needed to urge private sector investment, since projects in Northeast Asian are large.

(4) Investing and financing cross-border projects

Even the World Bank and the Asia Development Bank have limited experience.

A new bank needs to develop technique for project appraisal and supervision for investment and/or loans.

Real-world case studies are needed for this purpose.

(5) Cross-border cooperation organization

“Cross-border cooperation organization” (EU model) for comprehensive cooperation among municipalities, nations, supranational organizations, international organizations, and international NPOs.

EU’s example

Implementation in Northeast Asia

Real-world case study: Ferry route project across Sea of Japan / East Sea

Investment and financing for transportation infrastructure

Private-Public partnership

Investment from local government of four countries and private firms

South Korea 51%, Russia 17%, Japan 16%, China 16%

Model case for the cross-border development initiatives such as Busan-Fukuoka Cross-Border Regional Development for project finance

Concluding Remarks

Without going against market economics and globalization, a control tower can be established to guide the creation of an economic sphere based on Asian values and cooperation among Japan, China, and South Korea—under the “Organization for Northeast Asian Economic and Social Development.” This paper proposes a “Regional Development Design by Japan, China, and South Korea” and “Northeast Asian Development Finance Design” as a possible action plan. It will be more necessary to re-examine the economic system in Northeast Asia from the aspect of economic rationality based on cooperative security. Now is the time Northeast Asia had its blueprint for cooperative security, focusing on multilateral and economic cooperation. Most important, is the creation of a “symbiotic community” that is able to meet the challenges of the twenty-first century.

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9. Global Financial Crisis and Policy Responses in Korea

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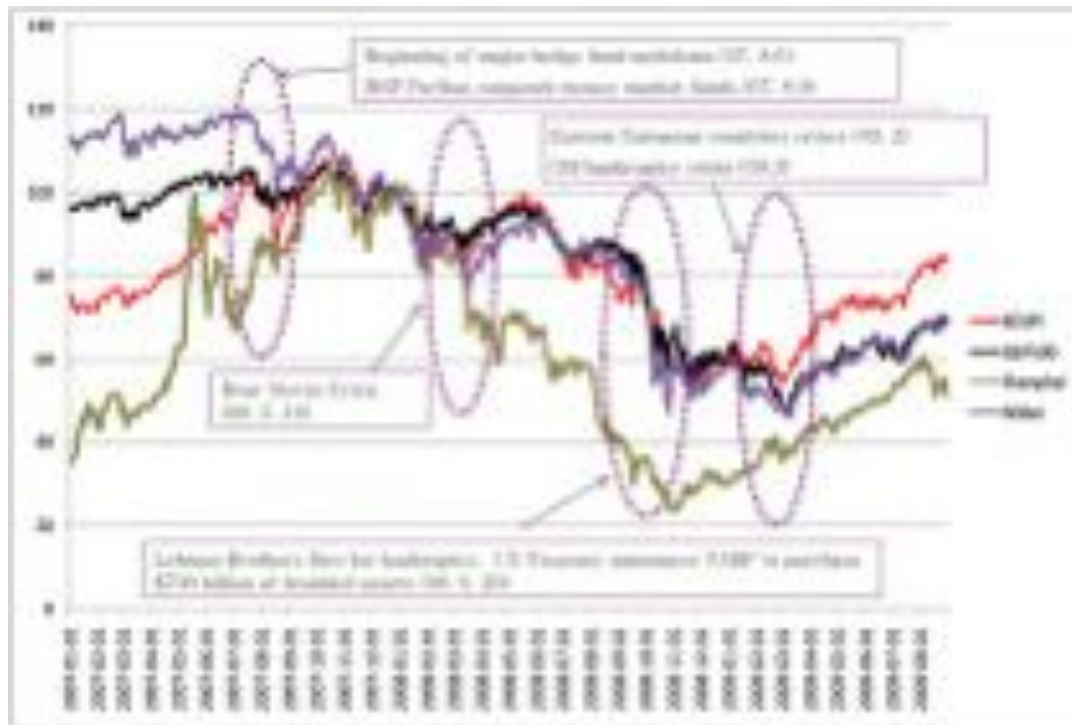
Although the current global crisis has had an adverse impact on the Korean economy, other major countries have been more severely affected. In particular, Korean stock market appears to have suffered from the current crisis but not as severely, in relative terms, as in the United States, Japan and China (See Figure 1). Its stock prices certainly declined, with the KOSPI (Korea Composite Stock Price Index) falling by 44 percent from yearend of 2007 to the end of February 2009. The decline was due to a surge in capital outflow, largely driven by the massive withdrawal of foreign debts by financial institutions. The won/dollar exchange rate consequently fell, the won depreciating by 40 percent between October 2007 and February 2009 to 1,516 won to the dollar by the end of the period. Since March 2009, stock prices and foreign exchange rates have rapidly stabilized, thanks to the increased current account surplus as well as to the expansionary policy by central banks under the global policy coordination. The KOSPI increased by 57.4% between the end of February and the end of September 2009, and the won appreciated by 21.4% over the same period.

Korea's comparatively good performance may be due in part to the institutional reforms taken by the country in the aftermath of the 1997 crisis that led to changes in the financial structure of its corporations and in risk management of its banks. Large corporations managed to actually reduce their debt leverage ratios and improve their debt service capacity. It is not surprising then that the Korean economy has been able to withstand the current global crisis better than other major economies.

Korea did not have as large a housing bubble as the United States. In fact, in 2001-07 the housing prices rose by 6.7 percent on a year-on-year basis and in 2008 they registered an increase of 3.1 percent in Korea. Two factors accounted for this moderate increase in Korea: one was the deflationary effect of economic restructuring after the 1997 crisis (over the period of 1996–2000), and the other was the restrictive mortgage-loan regulations that the government introduced a few years before the current crisis⁹. These mortgage loan regulations contributed greatly to such low delinquency ratio of mortgage loans in Korea as 0.44% in July 2009.

⁹ In 2002, the government began to tighten the loan-to-value (LTV) regulation on apartments in “speculative areas” with ratios ranging from 40% to 70%. In August 2005, the regulation on DTI (debt-to-income ratio, which is the principle and interest payments on total loan to income) was also introduced to reduce the default risk on housing loans. 40% DTI ratio has begun to be applied to “speculative areas.”

<Figure 9.1> Time Line of Crisis and Stock Price Indices in Korea, the US, China and Japan (2008. 1. 1 = 100)



In spite of this relative stability in the financial market, Korea's real economy has suffered much from the current global recession, which has brought about a severe contraction in its exports. As a matter of fact, the monthly exports recorded an unprecedented decline from \$41.0 billion in July 2008 to \$22.6 billion in January 2009, and improved somewhat to \$31.0 billion in August 2009. Between July 2008 and August 2009 Korea's exports to China, the United States, Japan, the EU, and the rest of the world decreased by 14.5, 24.1, 31.4, 34.7, and 25.6 percent, respectively.

As to be expected, this decline in exports has had a direct negative impact on Korea's manufacturing sector: the manufacturing production index fell significantly since November 2008 and its year-on-year growth rate recorded an 18 percent decrease between November 2008 and February 2009. Beginning in March, manufacturing production saw some improvement with minus 6 percent year-on-year growth between March and July 2009. However, during the same period, SMEs (-10%) have continued to suffer more than large firms (-4%).

Korean Government's Response to the Crisis

The Korean government has taken a number of comprehensive and preemptive measures to address the actual or potentially adverse impacts of the crisis. These measures are discussed below, being cognizant that it is too early yet to tell whether they will succeed in solving the problems of the crisis.

(a) Foreign currency liquidity provision

In response to massive outflows of capital—a sum larger than that during 1997 financial crisis—the Korean government and the Bank of Korea have set aside \$55 billion for the purpose of providing foreign currency liquidity (\$21 billion for trade finance and \$34 billion for liquidity provision) during October 2008-February 2009. In addition, in October 2008 the government set up a three-year \$100 billion payment guarantee for foreign currency borrowings by domestic banks. It also made agreements with the United States (November 2008), Japan and China (December 2008) to establish currency swap lines (\$30 billion each/\$90 billion total).

These measures have significantly alleviated the credit squeeze in the financial market. The term-loan rollover ratio has increased to around 90 percent by January 2009 from 50-60 percent in October 2008. In March 2009 the rollover ratio further increased to 106 percent, mainly due to the current account surplus. The banks have secured enough funding to pay off the loans maturing in loans while obtaining long-term funds by issuing bonds.

(b) Policy interest rate cut and liquidity provision

To prevent credit crunch upon post-Lehman fallout (September 2008) the Bank of Korea reduced the policy interest rate by 325 base points—from 5.25% to 2.0%. To assure liquidity it also pumped 23.3 trillion won into the banking system through the purchase of RP (Repurchase Agreement, 16.8 trillion won) and treasury bonds (1.7 trillion won) and the buyback of the Monetary Stabilization Bond (0.7 trillion won).

(c) Large-scale fiscal stimulus package

In response to the fall in aggregate demand the Korean government has adopted expansionary fiscal measures. Specifically, it has earmarked 51.3 trillion won (5.7 percent of GDP) for a stimulus package, which includes investment in infrastructure, provision for social safety net (16 trillion won), and a reduction in corporate and personal income tax rates (35.3 trillion won).

(d) Enhanced support for SMEs

Government credit guarantees to SMEs will increase to 62.6 trillion won at year-end 2009 from 48.9 trillion won at year-end 2008. Credit guarantees maturing in 2009, which amount to 32.5 trillion won, will receive an extension. The criteria for credit guarantee screening will be eased and, moreover, the guarantees that have an upper limit of one fourth or one third of the sales revenue of a firm will be raised to one half. In particular, exporting firms, “green-growth” firms, high-tech firms, and start-up companies will receive full guarantee coverage, up from the current 85 percent coverage. In addition, other SME loans maturing in 2009 will be rolled over.

Since the onset of the global financial crisis, the demand for SME loans has decreased while the credit risk increased, creating a precipitous drop in the supply of SME loans by banks (in December 2008 alone the supply of SME loans decreased by 1.8 trillion won). However, in January 2009, after the implementation of credit guarantee policy, SME loans increased to 3.1 trillion won.

(e) Enhancing the soundness of the banking system

The government has implemented various policy measures, including the Bank Recapitalization Fund to expand the credit supply capacity of banks. The government plans to mobilize 20 trillion won and has used the Fund to buy subordinated bonds, hybrid loans and redeemable preferred stock upon banks' request. The government also plans to establish the Corporate Restructuring Fund of 40 trillion won at KAMCO (Korea Asset Management Corporation) to

purchase bad debts and support restructuring. This fund will conduct a role similar to the Non-Performing Loan Resolution Fund, which was created during the 1997 financial crisis. As of the end of June 2009, key soundness indicators of Korean banks, including the BIS ratio (13.7%) and the NPL ratio (1.5%), are all in good standing.

(f) Support for Household Loan/Mortgage lenders

The Korean government has put in place various measures aimed at easing household burdens, including 1) guarantee of collateral supplementation for depreciated value of housing (maximum guarantee of 100 million won), 2) extension of maturity and grace period of mortgage loans, 3) exemption of early repayment fees on the transfer from floating to fixed rate.

(g) Job sharing

In order to create new jobs and retain employment the government will spend 60% of its budget in the first half of 2009 and launch the Green New Deal Project, which will invest 50 trillion won for the purpose of securing future economic growth and employment. Youth unemployment is a serious problem in Korea and has spurred the government to initiate the Youth Internship Program in order to train unemployed youth for employment in an economy that is becoming more technologically sophisticated. The government also plans to revise labor laws and institutions to make the labor market more flexible and to promote job creation. Specifically, the government will offer tax credits and financial incentives to companies that are devising ways to bring about cooperation between labor and management for job-sharing and improved industrial relations. Also, to address the inequities between regular and non-regular workers, the government is revising the relevant labor laws and institutions—for example, by extending the employment of non-regular workers from two to four years.

Implications on the Restructuring of the Korean Economy in the Post-Global Crisis Era

What will the world economy look like as it emerges from the current global crisis? It will depend very much on what the leading economies of the world such as the U.S., the EU, China, Japan, and India, do. It is difficult to tell what it will be like as we are yet to emerge from the recession and do not know how these economies will be restructured in the aftermath of the crisis.

One thing that seems to be certain, however, is that the US economy will become “de-leveraged” as its saving rate increases and, as a result, its status as the “demander of last resort” that has served as a final destination of exports from the rest of the world will diminish. If this truly happens it will have a profound effect on many economies in Asia that have relied on exports for their economic growth. In that event, these countries in Asia including Korea may not continue with export-oriented policies of the past; they will have to find new growth strategies and these may include relying more on domestic demand and expanding exports to non-US markets.

In anticipation of contraction in the US demand for Asian manufacturing exports and for reasons relating to its own internal economic conditions Korea will have to radically restructure its economy to improve productivity in lagging sectors in the economy. Specifically, it will need to improve the productivity of service industries where small and medium-sized enterprises (SMEs) dominate and turn them into a new export sector. For economic growth of the past four decades Korea has relied mainly on manufacturing exports to advanced industrialized countries. Its service exports have been minimal although in the 1970s Korea thrived on the export of construction services to the Middle East and, in recent years, exports relating to “hanryu”—

Korean movies and TV programs—have seen some popularity in Asian countries. The service sector in general, however, suffers from low productivity and has been a drag on the Korean economy.

It goes without saying that in the post-crisis era the Korean economy will have to become more domestic-demand oriented and to expand manufacturing exports to non-US markets. In addition, its service industries with their many SMEs will have to become more productive and competitive and to become Korea's new export sector.

10. Economic Integration of Northeast Asia and the Function of the Northeast Asia Bank of Cooperation and Development

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The tentative plan to establish the Northeast Asia Bank for Cooperation and Development (NEABCD) was initiated and first proposed by Mr. Nam Duk-Woo, the then-Prime Minister of the Republic of Korea, and Mr. Ma Hong, Director of the Development Research Center of the State Council of the People's Republic of China (PRC) in 1991 during the 1st annual conference of the Northeast Asia Economic Forum. In 1999, the issue of regional financial cooperation was intensively discussed during the 9th annual conference of the Northeast Asia Economic Forum held in Tianjin, and a proposal was put forward as to the headquarters location of the proposed NEABCD, which was to be set in Tianjin. Thereafter, the proposal of establishing the NEABCD has remained an important research topic. In 2003, the Pacific Economic Cooperation Council (PECC) organized a conference in Tianjin, during which a common understanding was reached by the PRC, Japan and the ROK as to co-sponsoring the establishment of the proposed NEABCD. It was suggested that the proposed NEABCD should be a joint-stock commercial bank, with private financial institutions and enterprises as its main shareholders, seeking profit as its business purpose, and “serving for the economic development in Northeast Asia” as its business principle. During the closing of the 17th annual conference of the Northeast Asia Economic Forum in October, 2008, the participants presented “*Tianjin Binhai Manifesto*”, and decided to work out an action plan to prepare the establishment of the NEABCD.

I. Functions of the Northeast Asia Bank for Cooperation and Development

The six countries in Northeast Asia area have strong complementarities in various aspects, such as in natural resources, industries and trade. For instance, China has a fast-paced growing market and low-cost labor resources; Japan and the ROK have a vast surplus capital and advanced technology and management; Russia has an advantage in its technology, natural resources and potential market; and Mongolia and the Democratic People's Republic of Korea (DPRK) are rich in their untapped resources. Therefore, the demands of these countries are different in their process of seeking regional cooperation in terms of investment, financing, and technology. Furthermore, it is highly necessary that there should be a multilateral institution or platform that can balance the interests of the various parties and effectively allocate capital as well.

The Northeast Asia Bank for Cooperation and Development will be charged with the following functions:

- 1) To promote and guide the investment of government capital in order to speed up further development in the Northeast Asia area;
- 2) To provide long-term finance for infrastructure construction by utilizing the Bank's own capital, or through fundraising and obtaining other resources;
- 3) To encourage private capital to be invested in those projects and industries that will be helpful for economic development through collaborated fundraising;
- 4) To cooperate with member countries in making adjustments in their development policies so as to make better use of their resources, and push forward in-depth development among regional countries;
- 5) To provide technological support for the projects in terms of their preliminary work, fundraising, and implementation, including the priority rights given to special projects and the research conducted for project organization.

In addition, the Bank will seek cooperation with countries and multilateral financial institutions outside the region to introduce advanced development and investment experience and technology.

II. Models to be adopted in fundraising for and management of cross-border projects

It is commonly understood that cross-border projects involve many countries in their actual development, which requires the cooperation of several countries. These projects are usually characterized as being large-scale, weak in profit-making ability, and having long-term investment return.

Generally, the fundraising for and management of cross-border projects are undertaken by international or regional cooperative and development financial institutions such as the World Bank or Asia Development Bank. The following is a classification of the main types of fundraising for and management of cross-border projects:

World Bank model: involvement in the projects is usually made through lending and guarantee, to integrate and push forward the project's development.

Asia Development Bank model: its “self-raising fund” model mainly includes ordinary capital resources, Asia development fund, technical support, and innovative instruments. The “co-financing” and “partner fundraising platform” is regarded as its “external” resource channel. Its management of cross-border projects is executed through signing relevant financial aid agreements with governments or organizations who receive the aid, supervising project progress, selecting project advisers, and so on.

American Development Bank model: the American Development Bank usually concludes that cross-border projects should be aimed at eliminating poverty, and accelerating regional integration, with a consideration as well of the project’s total cost and quality. Its fundraising is achieved through: 1) raising funds internationally; and 2) raising funds in domestic capital markets. Its management of cross-border projects has adopted new regulatory approaches, and changed the original vertical monopoly management to horizontal competitive management.

African Development Bank Group model: in addition to its own capital, the funds raised for cross-border projects also comes from ABEDA, IMF, WADB, EDF, and governments. The financial products provided for cross-border projects mainly include loans, risk management products, guarantees, and so on. Its management of cross-border projects is divided into three layers: global layer, country layer, and project layer.

European Development Bank model: its projects serve the political purposes of the European Union. Its funds are mainly raised in international capital markets via bond issuance. Its management of the projects consists of three processes: financial monitoring, physical supervision, and post-project evaluation.

Nordic Investment Bank model: its cross-border investment aims at making loans to developing countries (including countries having trade relations with Nordic countries), and is more inclined to make loans to middle-income developing countries. Its loaned funds mainly include three types: ordinary loans, project investment loans, and environment investment loans. After signing the loan contract, it monitors the risks of projects from time to time, and adopts necessary methods to prevent risk transmission.

Based on the research of determining, financing and managing the cross-border projects, and with reference to the case studies of major cross-border projects, it is firmly believed that the establishment of the Northeast Asia Bank for Cooperation and Development is of great significance both for the fundraising and management of future cross-border projects in Northeast Asia.

III. Governance Structure of the Northeast Asia Bank for Cooperation and Development

Capital and Equity Ratio

The current practice of multilateral financial institutions is to take the total GDP amount of the region as the chief reference to fix the total capital amount, i.e. to fix the ratio of the bank's capital amount to the total GDP amount of all countries in the region. In our case the capital amount of the Bank will be mainly determined by taking reference to the GDP amounts of all countries in Northeast Asia, while the investment demand in the region and the orientation of the Bank will also be considered.

With regard to the following - such as the total GDP amount in Northeast Asia, the current practice of the capital amount determined by the membership countries of multilateral financial institutions, the tremendous investment requirement in Northeast Asia, and the Bank's main objective of supplying funds to the basic facilities construction in the region - we consider setting the ratio of the Bank's total capital amount to the GDP amount of all countries in Northeast Asia at 0.5 percent. Therefore, the Bank's total capital amount will be USD 40 billion.

The equity of the Bank is composed of paid-up capital and callable capital. The paid-up capital, which is the actual capital every member country contributes, is the original capital when the Bank starts to operate; the callable capital are back-up funds which will not be paid unless the Bank is faced with an emergency or operation crisis.

In order to design the paid-up capital ratio, we must not only draw from the experiences of other multilateral institutions, but also take the financing needs and the economic strength in Northeast Asia into account. The following table shows the paid-up and callable capital ratio of the major multilateral institutions.

<Table 10.1> Paid-up and Callable Ratios of the Major Multilateral Institutions

Bank	Paid-up Ratio	Callable Ratio
World Bank	20%	80%
Asia Development Bank	7%	93%
European Development Bank	30%	70%
American Development Bank	4.3%	95.7%
Nordic Investment Bank	10.1%	89.9%

The Bank's main objective is to supply funds for basic infrastructure construction in Northeast Asia. These projects generally require huge amounts of capital and take many years, thus the paid-up capital by the membership countries should be as much as required for completion. In addition, in consideration of the economic strength of every member country, the paid-up capital ratio will be set at 10 percent.

The detailed subscription approach is as followed:

(a) Provided that the Bank's total capital is USD 40 billion, which will be raised by 4 million subscribed shares, each will be worth USD 10,000.

(b) The Bank's paid-up capital ratio required is 10%, i.e. total paid-up capital will be USD 4 billion.

(c) Paid-up capital shall be paid within a number of years. Half of the total amount shall be paid with a freely convertible currency (e.g. US dollar); the rest may be paid in domestic currency.

Two principles are critical to the design of the equity ratio allocated to countries in the Northeast Asia Cooperative and Development Bank: first, equality and mutual benefit; second, the ratio shall indicate the economic development and the potential development of the member countries. To design such a ratio, we must first consider the need to attract funds and import technology from developed countries, so that a certain number of shares should be distributed to those countries outside the region; second, we must put the interest of local countries first, so they should be given the lion's share. With regard to the practice of other multilateral financial institutions and the Bank's principle objective to better serve the member countries in Northeast Asia, the equity ratio of member countries in Northeast Asia shall not be less than 60 percent; the remaining 40 percent shall be subscribed by multilateral financial institutions or countries outside the Northeast Asia region.

In designing such ratios, the World Bank and other institutions use weighted average by taking into account three main economic indicators: GDP, foreign exchange reserves, and foreign trade volume. In selecting the economic indicators as reference for designing the Bank's equity ratio, on one hand, we should consider the factors of GDP, foreign exchange reserves and foreign trade volume; on the other hand, we should focus more on their respective growth rates, which can show each country's investment capability, actual economic condition, and its development potential and interest claim. All of these are essential considerations in designing the Bank's equity ratio to each member country in Northeast Asia.

To design such a ratio, a comprehensive weighted average will be used for the calculation of equity ratio allocated to the Bank's member countries in the region. It takes into account the three economic indicators - GDP, foreign exchange reserve and foreign trade volume - as well as their relevant growth rates. Based on the data from relevant countries in Northeast Asia between the year 2000 and 2005, the calculation is as follows:

<Table 10.2> Equity Ratio of Six Member Countries in NEABCD

China	Japan	Korea	Russia	DPRK	Mongolia
30%	30%	14%	16%	4%	6%

In order to accelerate the establishment of the NEABCD, the assigned governmental representatives of each country in Northeast Asia are strongly advised to hold negotiations on the related issues as early as possible. Considering the urgency its establishment, we can be flexible in negotiation. For instance, the governmental policy-oriented financial institutions of each country can hold negotiations directly with the large publicly-held corporations to quicken the steps for the NEABCD's establishment. The governmental policy-oriented financial institutions in Northeast Asia include the China Development Bank, China Import and Export Bank, South Korea Development Bank, South Korea Export and Import Bank, Russia Development Bank, Development Bank of Japan, etc.

Capital Operation

At the early phase after the NEABCD's establishment, because of the relatively few shareholders and small capital, the main source of funds will be the contributions of share-holder countries, including investment from policy-oriented financial institutions and large enterprises held by government. When the necessary conditions are met, long-term funds and other funds with long-term character of member countries can be absorbed directly.

With the increase of NEABCD's shareholders in number and the enlargement of its capital, apart from submissions from shareholders, other ways such as bond launching, funding and direct loaning can be considered.

At the start period of the NEABCD's establishment, due to its small capital, the main field of capital use is operated by the "agent" model, i.e. the project funds which are to be invested in Northeast Asia from other multilateral financial institutions are consigned to NEABCD. The funds can be received, paid, managed, and used by the Bank according to the institution's instructions or special objectives. The agent businesses include information technology services, loan transferable services, project consigned agent business, etc.

With the increasing channels of the NEABCD's capital sources, other ways of funds operation can be expanded, such as loans, stock investment, joint financing, fund investment, technology aid and grant aid.

IV. Suggestions for Headquarters and Branch Locations of the NEABCD

1) Analysis of headquarters location selection by other multilateral banks

From the headquarters location selection experiences of other multilateral financial institutions, the headquarters site criteria of the Bank should include unparalleled geographical location, convenient transportation and communication, tremendous economic development potential, favorable policy, and a stable financial environment.

2) Tianjin Binhai New Area to be NEABCD's headquarters location

China has made tremendous achievements since its economic reform and opening to the outside world. The market economy system is being established and its open economy continues to develop rapidly. China has been chosen as the primary world manufacturing base in the global work allocation system. Further, China's FDI has continuously reached high levels around the world over the past few years. In the aspect of finance system reform, after entry into the WTO, China has gradually carried out its finance opening policies and has made progress in capital market reform and opening, banking and interest marketing reform, finance regulation system improvement, foreign exchange system and capital account reform, and financial market innovation, which will undoubtedly create a favorable economic and financial environment.

For many years the Tianjin Municipal Government has been supporting economic cooperation in Northeast Asia, actively pushing forward regional economic and financial cooperation, especially in making continuous efforts in the preparatory work for the establishment of the NEABCD. It has successfully arranged meetings and realized the in-depth discussions by organizations from both central and local governments on the possibility of establishing the NEABCD. In 2008, the Research Centre of Northeast Asia Financial Cooperation was set up in Tianjin. Its founding has witnessed the implementation of the *Tianjin Binhai Manifesto* into practice, and will surely play an important role in speeding up the process of the NEABCD's establishment.

Tianjin is abundant with various resources and has a strong footing in the multi-level financial services system, financial regulatory system, and financial product innovation capability, which will provide the NEABCD with inclusive companion services.

Recently, the State Council has just approved the enlarged administrative district of Binhai New Area. The new district government has already listed financial development as a top priority among many goals to be achieved.

In addition to the preferential policies given by Chinese government towards Binhai New Area, the advantageous physical location of Tianjin will facilitate the NEABCD in stretching its business and services easily to all countries in the Northeast Asia region.

3) Locations for NEABCD branches should be decided with suggestions from member countries

In order to achieve for smooth operation and easy communication, there should be offices and branches in many countries, especially in countries where cross-border projects are in process. It is suggested the set up of branches take the model of commercial banks. As to the selection of cities, suggestions by member countries should be respected in line with their vision of financial reform and development.

11. The Northeast Asian Bank for Cooperation and Development: From Rhetoric to Reality

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Introduction

As you all know, a new financial institution for Northeast Asia—the Northeast Asian Bank for Cooperation and Development—was first proposed more than a decade ago.

Since then, much time and effort have been devoted, and by many people, to explaining the purpose of the Bank and the important contribution it can make to the development of the Northeast Asian region.

A great deal of this work was done by, or under the auspices of, the Northeast Asian Economic Forum (NEAF), directed by Dr. Lee-Jay Cho.

The proposal for a new Bank for Northeast Asia—the only region of its size and complexity in the world that does not have a development institution of its own—has gained considerable support and momentum during the past decade.

The Bank is now supported by officials, bankers and private citizens in all countries of this region.

The support of the Government of China and of the Tianjin Municipal Government has been of major importance for the forward progress of the Bank.

But much remains to be done to transform the Bank from “Rhetoric” to “Reality”.

Future Program of Work

One of the most important tasks facing participants in this meeting is to raise the level of understanding and support for the Bank by senior-level officials, Ministers, and the Heads of State of all the countries concerned with the future of this region.

But these officials carry a heavy burden, and getting them to spend their time and attention on the proposed new Bank will not be easy.

And the opportunities will be limited.

So the Bank’s proponents and supporters must be prepared at all times with well-organized briefing materials about the Bank.

As you will recall, the three main briefing points are these:

I. The Purpose of the Bank:

1. To accelerate economic and social development in Northeast Asia by channeling financial resources from overseas to this region for investments in infrastructure and related developmental purposes.
2. To provide technical assistance and advice to countries of the region in identifying and preparing both national and regional infrastructure projects in such areas as transportation, pipelines, energy, and social infrastructure.
3. To mobilize funds for the exploration and development of the vast stores of natural resources—mineral, metals, forest products and others—in China, Japan, Russia and other countries of the region that remain untapped and undeveloped.

II. The Founding Principles of the Bank:

1. The Bank will be organized and will operate on sound banking principles. It will be “Asian” in its basic character. Countries of this region will purchase and hold the major share of the Bank’s capital and they will have the deciding votes in determining Bank policies, programs and direction.
2. The Bank will be multinational, with a minority of its capital shares to be held by non-regional member nations.

III. Other Issues:

More than a decade ago the financing gap for investments in the region’s infrastructure was estimated at \$2 billion a year. That amount has increased since then as new investments in pipelines, tunnels, transport and communication systems, etc. have been identified and proposed for financing.

Substantial amounts of capital have been invested in the region’s infrastructure during the past two decades—in ports, harbors, air and highway transportation, pipelines, etc. But these amounts are far less than the region’s projected needs and capacity to carry.

The Multilateral Development Banks that are active in the Northeast Asian region are the Asian Development Bank and World Bank.

Because of their limited resources and policy reasons, these Banks have been able to finance only a small proportion of the Northeast Asian region’s capital requirements in the past.

They cannot be expected to meet more than a small part the region’s future financing needs

The other main source of financing for the region has been the private sector.

Private sector financing has covered only a small part of the region’s investment requirements.

The private sector cannot be counted-on to increase its infrastructure financing significantly in the future.

Northeast Asia remains the only major economic area of the world that does not have its own financial institution to intermediate capital from surplus overseas capital markets to this region and to provide technical assistance to its region.

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## Changes in the World Economy

Consideration of the Bank's future must recognize that major changes have occurred in the international and Asian economies since the idea of a Development Bank for this region was first raised.

Among the most relevant changes for the perspective of the proposed Bank are the following:

China's economy has experienced unprecedented growth during the past several decades, and China has become an economic and financial powerhouse in Asia and the international economy.

Japan, Korea and China have foreign exchange reserves sufficient to launch the proposed Bank on their own. But they should refrain from doing so.

For the Bank to be successful, it will require broad international support and participation by European, North American and other Asian countries.

America's role in Asia is diminishing, and the U.S. will not play as central role in the region's future economic and financial affairs, or in the new Bank, as it did in the past, e.g., when the ADB was established.

The European Economic Community remains interested in Asia but is presently preoccupied with the current economic situation and its relationships with East European nations.

International capital markets remain highly liquid. But continuing uncertainty will continue to be an impediment to securing funding for a new Bank for Northeast Asia.

This suggests that the Bank's capitalization should include a strong amount of paid-in capital.

## Next Steps

As I mentioned earlier, an important task now facing the Bank's supporters is to raise the level of understanding of, and support for, the Bank to the highest possible level of the region's countries—to senior policy-level officials, Ministers and Heads of State.

They will all be involved both in determining Northeast Asia's economic and commercial future and in deciding on the fate of the proposed new regional development bank.

## Needed: A Briefing Document

As has been the case for the development banks established in earlier years, strong and convincing briefing materials concerning the rationale for new Bank will be essential in order to gain the approval and support of senior government officials from in and outside the region.

A briefing book, entitled e.g., Report on the Proposed Northeast Asian Bank for Cooperation and Development, should be prepared as soon as possible.

The briefing book:

Should identify and summarize the major substantive policy and organizational issues concerning the founding of the Bank.

It should be succinct, comprehensive and well-written.

It should consist of one detailed, factual, issue-oriented volume plus an annex of related topics.

As I see it, the briefing *Report* would serve two main purposes.

The first purpose would be to serve as the basic briefing document for review and approval by Finance and other Ministers, and by the Heads of State of the Big 3 Asian Nations.

Assuming approval of the Bank concept and its establishment by the Big 3 Asian nations, the Ministers of these nations would convene a larger, multi-country *Bank Founding Meeting*.

The Big-3 Ministers would invite their counterparts and other appropriate senior level officials from interested countries from within and outside the region to participate in the meeting to establishing and organize the Bank.

The second purpose of the briefing book would then be for use by the Ministers, et al. of other invited countries for their review in preparation for the *founding meeting* on the Bank.

At the multi-national Ministerial-level *founding meeting*, the Ministers could consider some of the Bank's organizational and policy issues, including, for example:

The total amount and composition (paid-in and callable) of the Bank's capital; and the allocation of shares among prospective member countries,

The location of the Bank's headquarters and of its satellite offices,

The national origin of the Bank's president, Vice Presidents and senior officers; their terms and conditions of office; etc.

#### Roles of NEA Forum and the Research Center

The *North East Asian Economic Forum* is presumably the most qualified organization in terms of knowledge and experience needed to prepare the requisite briefing book.

The *Forum* would, however, require the provision of funds commensurate with this major undertaking.

Meanwhile, the *Research Center for Financial Cooperation in Northeast Asia*, which has been established by the Tianjin authorities, could undertake, under the *Forum's* direction, research and analysis of some of the key issues that will have to be covered in the briefing document.

This research will entail visiting and gathering information from the existing multilateral Development Banks (MDBs), in particular the Asian Development Bank in Manila and the World Bank in Washington.

The priority issues on which the *Research Center* could begin work include the following:

The methods the existing Multilateral Development Banks (MDBs) use to finance projects that involve a blend of their own concessional funds and private sector commercial loans.

The methods by which the MDBs organize and structure projects that involve physical activities across several countries and several sovereign borrowers.

The need for concessionary lending (a "soft window") for the Bank's least-developed borrowing countries.

The number, staffing, role and responsibilities of the MDBs regional offices.

The procedures and operating manuals used by the MDBs for evaluating and extending loans and technical assistance.

The methodology used by the MDBs to monitor the economic, financial and technical progress of their projects, and the economic status of their member countries.

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I will close by observing as I did before. that, there is still much work to be done. But it is very gratifying to see the progress that has been made, particularly during the last several years, in moving the proposed Bank from *Rhetoric to Reality*.

Thank you for your attention. And thank you for your invitation to this meeting.

Session V: Communication and Contents Industries in Northeast Asia

12. Digital Media Platform's Role & KT case - Based on "Keystone" concept

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1. Introduction

The development of the media has been based on huge phenomenon, 'digital convergence.' It refers to the evolution of previously distinguishable digitalized information formats, services, applications, networks, and business models in ways that blend the distinctions. This is really driven by the rapid development of digital technology. This now can be a stimulus within the information ecosystem for creativity, improved productivity, continuous technological innovation, economic growth, societal benefit and greater inclusion. It can facilitate the use of communication technologies across business, government and individuals. It enables the content creation, collaboration, coordination and the interoperability among people, services and applications through enterprise systems and digital networks.

Convergence over the last ten years has referred mainly to the promise of new functionality in ITs that was afforded by the ability to bridge the networks, computing and devices. Its continued evolution has built upon that foundation of network convergence, is connecting people and speeding information flows, and constituting a crucial development in the evolution of enterprises and increasing the potential for enhanced societal interaction.

The convergence can present a huge opportunity for all stakeholders to improve economic efficiency and productivity, leading to innovation, new business opportunities, increased choice and lower prices that benefit all users. It can provide whole world an unprecedented opportunity to participate in the digital economy. Digital information flows have already increased market access and competitiveness by creating greater efficiency and global scope of sales and service. But this has not only expanded, but also complicated relations among companies, leading to increased managerial risk, and eventually requiring a fundamentally new understanding of the business conditions for survival.

Except the primary factors such as digitalization, other factors like cost reductions, increased availability and take-up of broadband and high speed connectivity and networks, and advances in software development tools have facilitated today's media interaction and creative collaboration. This paper concerns with the role of the media platform¹⁰ for that. In this regards, it will firstly examine the role change of the media platform from mass media world (media 1.0) to "Micromedia" world (media 2.0) and discuss "Keystone" concept by Iansiti & Levien (2004) who introduced four different types of platform. Then, new architectures of Media 2.0 will be constructed on the basis of "Keystone." After that, it will suggest new remedy for market growth

¹⁰ Platform is generally understood as the common components like hardware, software, service and also the common rules such as standard, protocol and contracts, employed by network users in most of their interactions. Platform providers are mediating the interaction between the sellers and users by offering the platform.

in the market saturation in Korea. At the end, KT's IPTV role as keystone platform will be introduced as the model case to accept the Media 2.0.

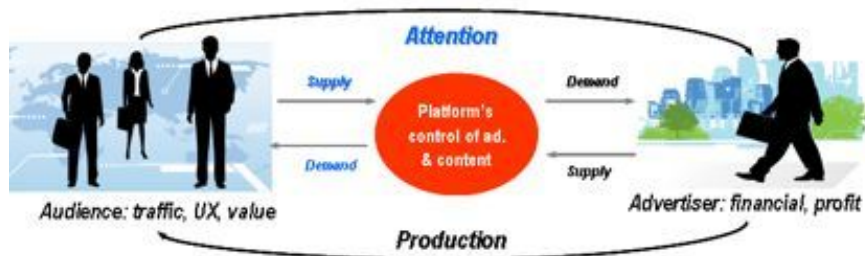
2. Role Change of Media Platform

2.1 Media Platform in Media 1.0

Most old media markets are two-sided. They coordinate consumption by advertisers and audiences. The attention is how we refer to this coordination process. Because of high entry barriers such as regulation, spectrum allocation, old media players have gained strong first-mover advantages. Supply has remained limited on the both side of the two-sided market. For advertisers, price rises, then it is used to subsidize audience growth.

According to Haque (2005: 4), the supply coordinates the demand on the both sides of a two sided market and sets equilibrium prices. Unlike in other markets, the attention is a critical part of the value chain, because it is demanded by advertisers (media platform) and supplied by consumers. On the other side of the two-sided market, production is demanded by consumers (platform) and supplied (funded) by advertisers.

<Figure 12.1>. Media platform in Media 1.0



The traditional mass media industry's first law is 'attention is scarce.' But in fact, attention has remained 'relatively abundant'¹¹ for many years in comparison to recent multi platforms situation. Haque (2005) insisted that in a mass media world or Media 1.0, downstream resources are scarce: Distribution scarcity (Transport/inventory/broadcasting costs), retail scarcity (Spectrum scarcity, limited shelf or screen space), and production scarcity (Infrastructure and human capital costs). On the other hand, upstream resources are abundant. That means, the attention isn't scarce relative to other resources.

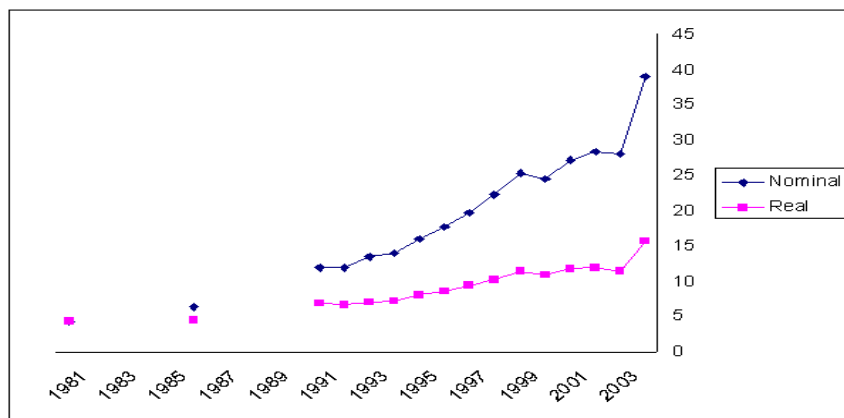
¹¹ Attention is unobservable. But the industry's actions reveal abundant attention. In the US, following deregulation, network TV ad time per hour increased exponentially from 6:48 in 1982 to 12:04 in 2001. Similar figures for radio, newspapers and magazines. While production investment has increased linearly, increasing ad time is equivalent to investing in attention. Because ad time is simply a marketing cost borne by players on the other side of the 2-sided market (Haque 2005).

In the mass media world, the attention scarcity hasn't been a driver of value creation, because barriers to media consumption have been high and limited supply of cinemas, radio stations, newspapers, TV channels, etc. It is implied that in the mass media world, the quality does not efficiently drive the popularity, for the attention has been relatively cheaper than costly production, distribution, ideas, editing, finishing, etc. The value capture of the mass media has been a function of distribution scarcity. That means, whoever controls the distribution channel could exert market power along the value chain, increase market share, and control how value is captured. Retailers and marketers achieve control via consolidation: Acquisitions, partnerships, and alliances which realize economies of scale and scope in marketing. Examples are vertically integrated global media groups like News Corp., Time Warner, Vivendi, Comcast, etc.

Haque indicated that the problem in Media 1.0 is marketers' little motivation or incentive to invest in quality, since production costs don't realize scale and scope economies, but marketing and retail costs do. The quality drives popularity inefficiently. In fact, production costs have grown in output because of the risk acceleration. Films & records have gone 'over budget'. For them, the profit-maximizing strategy is the investment in attention such as the viewing rate of TV, not the investment in production.

As a matter of fact, real marketing expenditure has quadrupled in the US, while real production expenditure has only doubled between 1981 and 2004. That means that the firms have cumulatively invested twice as much in attention as production in the US. Since this strategy has persisted for last 25 years, investing in attention must realize superior returns to investing in production. This strategy has been dominant in a mass media world, because the producers have realized marketing economies of scale and scope, and production diseconomies of scale and scope.

<Figure 12.2>. Hollywood Nominal and Real Marketing Costs, 1981-2004



Source: Haque, 2005:13

According to Haque (2005: 16~30), in the Media 1.0, the dominant strategy is to reuse the same expensive content across as many media as it can be distributed. The film release windows are the good example: Cinema, DVD, Video, TV, advertising, and so on. The promotions can be connected with other industries like food, books, posters, t-shirts. In this world, blockbusters are

a strategy to maximize returns on content. By reusing and leveraging it, marketing economies can be realized, because downstream resources scarce, upstream resources are relatively abundant. This strategy emerges in all mass media.

In a non-networked media world, retail & marketing can capture the most value. Producers and program distributors remain fragmented because production returns don't scale. They don't realize significant economies of scale or scope by consolidating. On the other hand, marketing and retail returns do scale by consolidating. Blockbuster strategies are possible due to the natural economics of mass media: production is costlier than attention, so the dominant strategy is to invest in attention, and economize on production. The result is a smaller and smaller number of concentrated players, who are forced to invest more and more heavily in marketing as attention becomes scarcer. When attention is abundant and production, distribution, and retail are scarce, media player achieve an efficient allocation of scarce production resources, by supplying media valued the most highly to the greatest number of consumers within each retail channel. This is Media 1.0.

2.2 Media Platform in Media 2.0

As the competition among platforms and the broken windows of the film release are main trends, buying attention & marketing economies hit diminishing returns. Each segment is less and less valuable and saturated faster than yet. Marketing wars between blockbuster marketers, each of whom thinks attention will be cheap. This is a "Prisoner's dilemma"¹²: Each is better off marketing less. Quality erodes. Hollywood marketing cost explosion, major label sales declines, magazine subscription erosion are the common phenomena everywhere.

The problem facing current media industry is scarcer attention and a zero-sum game among platforms, because media's grown quantitatively and qualitatively thanks to the technological innovation and deregulation trend, but the attention hasn't. This environment requires a new relationship of the media players and a new role of the media platform.

That "attention would be relatively scarce in the convergence" leads to create new core competence and business strategies. As competition explodes for attention, marketing costs begin to increase. On the other hand, production becomes more abundant and less costly. Thanks to the Internet, there is no clear distinction between professional & amateur media because "atomized" media can be reshaped, remixed, aggregated, filtered, distributed, almost anyway, to any time, at any place consumer prefer (Haque, 2005).

¹² The **prisoner's dilemma** is a fundamental problem in game theory that demonstrates why two people might not cooperate even if it is in both their best interests to do so. It was originally framed by Merrill Flood and Melvin Dresher working at RAND in 1950. Albert W. Tucker formalized the game with prison sentence payoffs and gave it the "prisoner's dilemma" name (Poundstone, 1992; cited in Wikipedia).

<Figure 12.3>. Platform in Media 2.0 and three sources of value creation



This atomized media disrupts the mass media landscape and downstream resources become abundant. Value capture is a function of attention scarcity rather than retail and distribution scarcity, because barriers to media consumption are low: Unlimited supply of TV channels, newspapers, radio stations, everything over IP, etc. Hypertargeted, microdifferentiated content is valuable. According to Haque (2005: 36), it is a “Micromedia” explosion. As “Micromedia” explodes supply relative to demand, equilibrium prices fall. Production, distribution, and retail become relatively abundant and attention becomes relatively scarce. Consumers can afford to consume greater quantities of smaller “Micromedia,” chunks of media. Average returns fall: Falling advertising revenues across mass media, falling circulation in newspapers, etc. The value is appropriated by consumers, who can consume more media more cheaply.

As the attention becomes scarcer, it becomes more costly and the economies of scale and scope in marketing erode because returns fall. On the other hand, as the production becomes more abundant and less costly, it can realize greater returns. Value is shifting. The dominant strategies in Media 2.0 are based on economies of scale and scope in production, distribution, and search. Haque (2005: 97) introduced three sources for value creation in Media 2.0: ① Revelation, ② aggregation, and ③ plasticity.

Firstly, the revelation refers to discovering which content is valuable. It is like finding the new stuff in publishing company. As a result of the expansion of Internet use, ‘more choice’ but ‘less time’ requires the user’s attention. Media consumer would like to crave more trusted brands such as current Google, to filter the glut of choices, but it is also easy for them to rapidly leave brand loyalty, if their needs are not met, or just to try the next more attractive digital media.

Secondly, the aggregation means centralizing and storing the huge amounts of micro-content. It covers the any time and any device distribution. Digital content that can travel across various networked platforms rather than offline will no longer be welded to the specific medium including pipe, device and Internet portal. Therefore, the media business approach will shift

definitely from an offline product-focus to a networked customer-focus (IBM 2004:16; Costa 2008: 60)¹³.

Lastly, the plasticity is to create value by modularizing, standardizing, or extending content. The so called prosumers (producer + consumers) can remix, tweak, cut, merge, split it or cheaply produce complementary goods. It is a matter of the infrastructure through technologies like mash-up capability.

The scarce attention is the basis of Media 2.0 value and those three mechanisms can allocate this attention efficiently. The Media 2.0 users are experiencing online platforms and flexible viewing schedules with affordable devices and applications. In the interactive environment, 'my stuff' is anywhere and users can be also producers of their own programming or authors of their own content. They need digital skills and redefine the amount of time they spend media passively. Thanks to those sources, they can skip the conventional advertising.

In order to focus on connected customers, content companies should open up the way they create content. They should open new ways to manage, store, catalog and break down content into product units¹⁴. The distribution companies also should open up the distribution, delivery, packaging, and availability of the content¹⁵. The device companies could create open, reciprocal relationships with content suppliers and customers.

Successful platform companies will interact with companies that produce content, as well as with users who are able to control, manipulate and configure content on large and small screens and technology will support this interactivity and responsiveness to ever-smaller niches. The future's higher production capacities at more reasonable price will enable smaller businesses to produce content that can be gathered to serve more niches. Skilled editors/content managers can deploy digital multimedia devices to serve such niche markets. As a result, "content will be able to flow more easily upward from the grass roots as well as downward from the media elites, opening doors to fresh creative approaches" (IBM 2004: 17).

3. Platform Types and Keystone Role in Media 2.0

3.1 Types of Platform

According to Iansiti & Levien (2004b: 148), "a platform is a set of solutions to problems that is made available to the members of the ecosystem through a set of access points or interfaces. (...) Platforms serve as an embodiment of the functionality that forms the foundation of the ecosystem, packed and presented to members of the ecosystem through a common set of interfaces. Ecosystem members then leverage these interfaces as a kind of toolkit for building

¹³ The HD-VoD approach is more likely to have success than Sony's pricey Blu-ray DVD business approach. People aren't interested in the boxed collection like *Sex and the City*, *Harry Potter* series and don't watch it repeatedly (Arar 2008: 28).

¹⁴ In March 2008, it is announced that Warner Music Group has joined EMI and Universal in agreeing to drop DRM on MP3 files it sells through Amazon.com except Sony BMG who is still holding out for DRM (Sayer 2008: 24).

¹⁵ Comcast's free site, Fancast has streams of full episodes of current and old TV shows from Bravo, CBS, Fox, NBC, and other networks. It has blogs about TV, movies, and celebrities, and it has marketing for first-run movies, DVDs and downloads (Albro, Edward N "Beta Watch," www.pcworld.com, Mar. 2008. P24).

their own products and think of them as the starting point for their own value creation. The platform is the ‘package’ through which keystones share value with their ecosystems.”

Iansiti & Levien introduced four types of platform (2004b, pp.68-78, see *table 1*): *Keystones*, *dominators*, *hub landlords* and *niche players*. *Keystones* are the kind of companies that serve as enablers and have a great impact on whole system. Firms that follow keystone-like behavior are important in business domains that are characterized by frequent external disruptions. An example is IBM-Microsoft-Intel ecosystem against Apple. For many years, Apple refused to license its operation system and produced a highly integrated product and it failed in the face of MS, IBM and Intel which acted as effective keystones. Because those can preside over significant turnover, and because diversity and responsiveness to change preserve the ecosystem, they improve the survival chances by either directly or indirectly encouraging change. In that sense, keystone strategy cultivates vitality of the ecosystem by sharing assets with partners.

Dominators and *hub landlords* are the kind of organizations that attract resources from the system, but do not function reciprocally. They are different. Apple was one of *Dominators* against IBM-Microsoft-Intel. Sony is another example during the rise of the VHS and Sony’s Beta acted to integrate vertically or horizontally to directly control and own a large proportion of a network. Both of them sought to directly control large parts of what could have been a thriving ecosystem of numerous firms by providing a single integrated product. But, the *hub landlord* is different. It eschews control of the network and instead pursues control of value extraction alone. By taking too much value out of its network, a *hub* can turn itself to a landlord.

Niche players act to develop specialized capabilities that differentiate it from other firms in the network, leveraging resources from the network while occupying only a narrow part of the network itself. Effective leveraging by them serves to enhance the ecosystem health. By avoiding duplication of effort, they implement a more efficient division of labor. This aspect is very important to *keystones* which must encourage *niche players* to leverage whenever they can and dissuade them from duplicating effort in areas of functionality.

Iansiti & Levien recommend a *keystone strategy*, if a firm’s business is at the center of a complex network of asset-sharing relationships and operates in a turbulent environment, not a stable environment. They also recommend a *niche strategy*, if a firm’s business faces rapid and constant change and, by leveraging the assets of other firms, can focus on a narrowly and clearly defined business segment.

<Table 12.1>. Companies’ different role strategies categorized by Iansiti & Levien

Strategy	Definition	Value Creation	Value Capture	Focus/Challenge
Key-stone	Improving the ecosystem and benefits performance of the firm.	Leaving vast majority of value creation to network. Sharing widely.	Sharing value thru network; balancing this with capture in areas	Focusing on creating platforms & sharing solutions throughout network. Challenge is to sustain value creation while balancing value sharing.

Domi- Nator	Integrating vertically or horizontally control network	Responsible for most value creation itself	Captures most value for itself	Focusing on control and ownership – defining, owning, and directing most of what the network does
Hub Land- lord	Extracting as much value as possible from network without controlling it	Creating little if value; relies on the rest of the network for value creation	Capturing most value for itself	Even if they refuse to control their networks, they extract so much value from those networks that they put their existence at risk.
Niche player	Developing specialized capabilities that differentiate from other firms	Collectively creating much of the value in the ecosystem	Capture much of the value they create	Focusing on specializing in areas where they can develop capabilities, while leveraging the services provided by the keystones in their ecosystem.

Source: Iansiti & Levien, 2004b, p.75

3.2 Keystone in Media 2.0

Keystone as smart platform seems to play a crucial role in Media 2.0. Iansiti & Levien (2004b: 82) insist, *keystone strategy* should be an operating strategy which improves the overall health of the ecosystem and, in doing so, benefits the sustained performance of the firm. Effective keystone strategy has two parts: Creating & sharing value (Iansiti & Levien, 2004b: 91-97). *Keystone's* value creation is related to the company's revenue increase and market expansion. In terms of the market expansion, the value can be a physical asset such as Wal-Mart's retail chain of CD/DVD. On the other hand, the intellectual asset like Linux's standard, Google's innovative information search engine and hub, or financial asset like MS's acquisition of Navision can be more related to the revenue increase for growth (Iansiti & Levien, 2004b: 91-97).

The *keystone* makes sure that its value increases rapidly with the number of participants that use it. Smart media platform can rebundle content, information about content. NTT's i-Mode network menu system (top ranked services move to top of menu), Amazon's application, or iPod as device with iTunes are good examples. Rebundling of distribution with content aligned with consumer preferences and expectations, efficiently allocating scarce attention.

Effective *keystone* can couple value creation with sharing it. Some assets can not only create high-value, but also be sharable assets, or leverage direct customer connections, or support uniformed information standards like Application Program Interfaces (hereafter APIs), purchase histories, and demographics. Other assets can establish and maintain performance standards like

Google.¹⁶ Carefully crafted platform architectures like APIs not only embody the value created by the firms, but also package, distribute, and provide access to it. The cost of sharing value with each partner must be low. It means, estimations of operating leverage include the cost of creating the assets as well as sharing them. MS's Windows platform¹⁷ & Google's AdWords¹⁸ strategies are good examples.

Whereas media companies used to be towards *dominator* like Apple in PC (Personal Computer), Sony¹⁹ in VCR (Video Cassette Recorder), or even the hub landlord such as AOL, Yahoo in portal, the value enabler, *keystone* will eventually survive and its business strategy will be the best option to be for most of the media platforms (Iansiti & Levien, 2004b: 91-97). Google is a model of keystone's performance based on Media 2.0. Based on the strong position within the window, Google's AdWords, the search engine based advertising network, works different from its competitor, Overture for Yahoo. Google supports its economy of clicks and links with ads. Those ads appear as small as blogs and as mighty as NYtimes.com. Anyone can join ad network. Google put its ads anywhere.

Google doesn't charge on advertising-rate based scarcity, but charge on performance. Placing higher or lower in Google's system depends on how much the advertiser is willing to pay for the search keyword, as well as its quality score. It is a measure of how successfully the advertisement is able to attract clicks. Consequently, the advertisement that is more popular among users tended to receive more elevated placement on Google engine. The more Google sends traffic to sites with its ads, the more money it makes. The more money those sites make, the more content they can create for Google to organize. Google also helps those sites by giving them content and functionality like maps, widgets, search pages, and Youtube videos. Google feeds the network to make the network grow.

Jeff Jarvis emphasizes new relationship and architecture in terms of the Google's role as Platform in his book "*What would Google Do?*"(2009) He distinguishes "Content Economy" and "Link Economy." The latter refers to "The more connections, the greater the value" and is the Google economy. Google occupies richly connected platform that provides the foundation for creating many niches, regulates connections among media participants, and works to increase diversity and productivity. It provides a stable and predictable keystone platform on which niche players such as application and content provider can depend. Moreover, it ensures its own survival and health by directly acting to improve the health of the ecosystem as a whole.

¹⁶ Google's unchanging performance standards are homepage's "simple aesthetic-clean, uncluttered, and easy-to-use" and the motto, "Don't Be Evil". (Moon, 2007: 285) The keystone can reduce uncertainty by centralizing and coordinating communication, or decrease complexity by providing powerful platforms.

¹⁷ Windows was open for PC application developers so that MS supplied extensive information & tools for creating applications to anyone who wanted and didn't charge any royalties in exchange. As a result, in 1998 ca. 450,000 developers took part in various MS training programs and over 10,000 applications were available for Windows (Hagiu, 2007a: 450).

¹⁸ Google's AdWords works different from its competitor, Overture, which places ads for Yahoo & MSN. According to Moon (2007: 287-288), Overture, along with Google's competitors, relied on auction-based, CPC (Cost Per Click) models to sell advertising. Whereas in Overture systems, the highest bidder for a particular search keyword is deemed the "winner", and its ad is at the top of the ads list, placing higher or lower in Google's system depends on how much the advertiser is willing to pay for the search keyword, as well as its quality score, which is a measure of how successfully the ad is able to attract clicks. Consequently, advertisement that is more popular among users tended to receive more elevated placement.

¹⁹ During the rise of the VHS and Beta acts, Sony integrated its business vertically and Apple now owns a large proportion of an iTunes/iPod platform/network. The both seek to directly control large parts of what could have been a thriving ecosystem of numerous firms by providing a single integrated product (Iansiti & Levien, 2004b: 91-97).

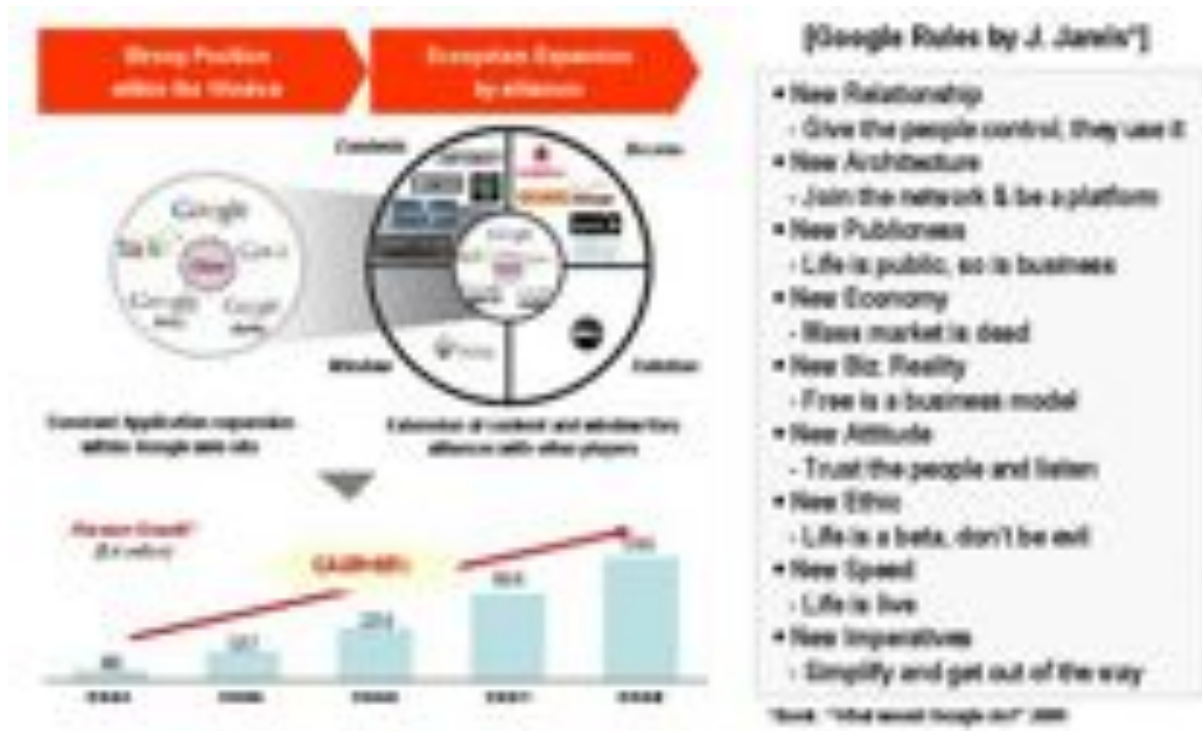
According to the book of J. Jarvis (2009), titled in "What would Google do?" media need to change fundamental structure with Internet, even if media still exists to control and benefit from it. The greatest transformative power of the Internet is not the technology or business. It is about people and making new link among them. The link changes everything. It's all about relationship, "link economy." J. Jarvis consistently insists new relationship and new architecture. New relationship is in many ways possible to invite customers to provide support, to let customers use the company just as a platform to build their own companies.

J. Jarvis said, "Yahoo is the last old media by controlling content & by marketing to bring people in." However, Google's management style is quite different. It manages abundance, does not control scarcity. It's Google economy. According to him, Google is the only company that truly understands how to succeed in the Internet age. He said, "Google is distributed. Google Search, GoogleAd, Googlemap etc..." by alliances.

In terms of new relationship, notion is that nature of brand is changing. "Devalue the content." There is a difference between content economy and link economy. Link gives value added. Google gives more and more value added. Google's platform rule is: "Be a platform others can build upon." "Think distributed." New architecture concerns with "the more connections, the greater the value." He said, Yahoo thinks of itself as an end, Google sees itself as a means. Concerning new Publicness, Jeff said, "Once upon a time, all roads led to Rome. Today, all roads lead from Google. Everybody needs Googlejuice. Fundamental change is publicness. Publicness is about more than having a web site." People have to be public to be found and new societal ethic is publicness. The more public they are, the easier they can be found, the more opportunities they have.

In addition, Jarvis introduced new economy, by saying "Big is still big. But small is new big." It's the post-scarcity economy. Mass market is dead. Google is teaching people to manage abundance. He said gift economy, by urging "join the open-source" The shift from the mass market economy was in Chris Anderson's 2006 book titled in "The Long Tail." Business model is free and Google doesn't want to own the content it searches, but it wants knowledge to be free online so it can organize more of it. Google commodifies things, commodifies the world. Google trusts the people and listen. Google would like to act transparent, unfinished, whereas other companies want to be perfect. Google said, "Don't be evil. Life is a beta." It is Google's new Ethic. Life comes and goes. People need new speed. Life is fast. The last rule of J. Jarvis is new imperatives, saying "Be simple & get out of the way." It means "Don't screw the cashcow."

<Figure 12.4>. Google as Keystone platform & Google Rules by J. Jarvis



4. Media Platform's New Architecture

4.1 Media in Transition

When the media platforms have been positioned and limited in each side of the four quadrants of *Figure 5*, it would lead to a zero sum game in the limited Media 1.0 market. Confronting Media 2.0, leading companies understand how “relatively scarce” attention shapes industry dynamics beyond traditional border. Media consumer would like to consume the media they like best.

But in fact, there are still search costs, transaction costs, coordination costs, etc. A simplistic model of managing a complex reality is content portability. Smart platforms and micromedia platforms can give ways for consumer to broadcast economically. Micromedia platforms can exploit anywhere network, peer production, and coordination economies. The Media 2.0 strategies would be taking place in both parts of production and distribution. In terms of production, they can leverage relatively abundant production resources to cheaply produce microdifferentiated and hypertargeted content.

In distribution, they also can leverage relatively abundant distribution resources to cheaply and intelligently distribute microdifferentiated content to niches. For instance, Comcast's advertising based free site, *Fancast* has streams of full episodes of current and old TV shows from Bravo, CBS, Fox, NBC, and other networks. It has blogs about TV, movies, celebrities, and UGC (User Generated Content), and it has marketing for first-run movies, DVDs & downloads.

<Figure 12.5>. Cross-platform between mass & web media in Media 2.0

Transmission based

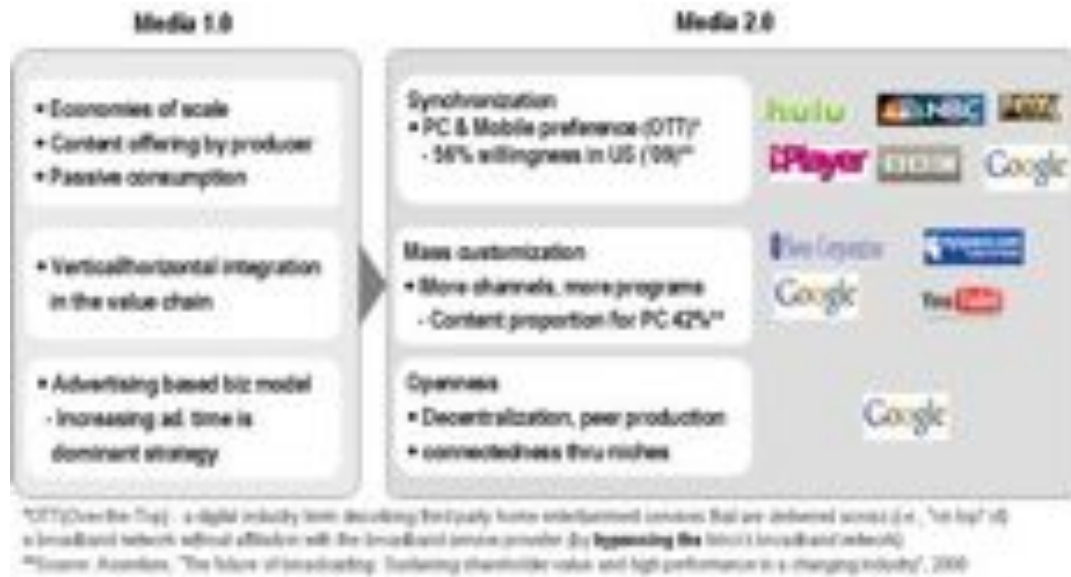
Web based



4.2 New architectures in Media 2.0

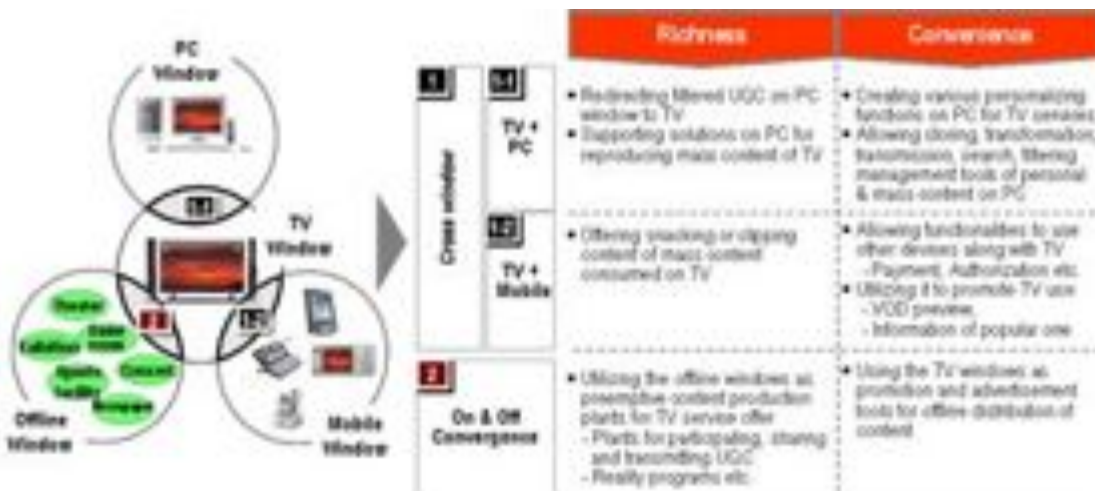
New Architectures of the platform in Media 2.0 are synchronization, mass customization, and openness (See Figure 6).

<Figure 12.6>. New architectures in Media 2.0, comparing to Media 1.0



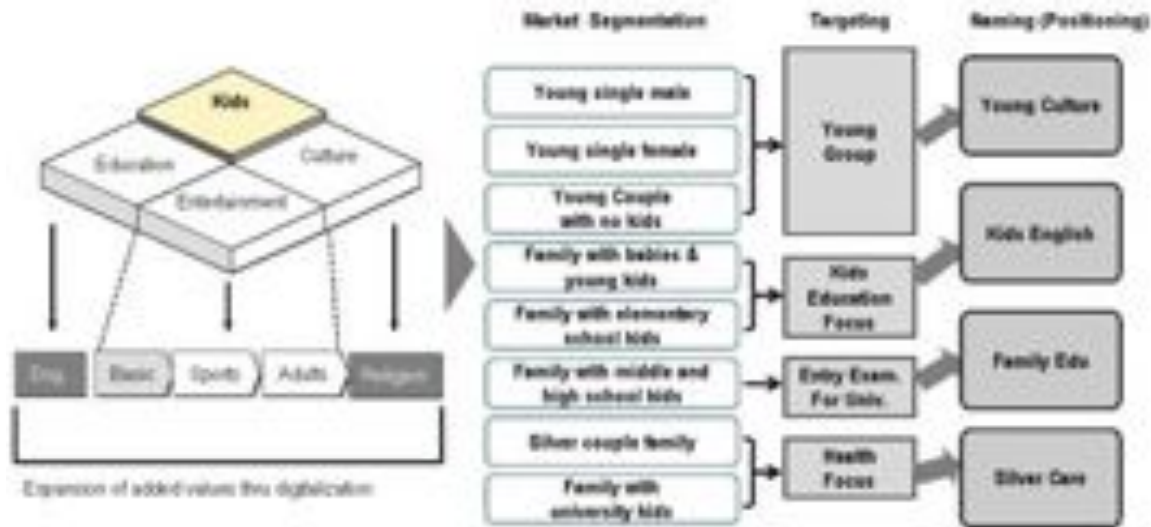
In terms of synchronization, the user wants to use media aggregated and reconstructed in hyper-efficient ways such as OTT (Over the Top). It is related to give value with link rather than content itself. J. Jarvis compared link economy with content economy. It is important in fields of telephone, video and audio where streams of sampled data are manipulated. For instance, it is used for the transfer of content from a computer to an MP3 player connected to it. For instance, Hulu offers streaming video of TV shows & movies from NBC & Fox, BBC launched VoD, iPlayer (Web API), and Reuters Spotlight provides content in the form of articles, pictures, videos and text through a set standards.

<Figure 12.7>. Architecture of Synchronization



In regards to the mass customization, the user wants to consume media in unbundled micro-media. It is about managing abundance rather than controlling content. More flexible viewing schedules with affordable devices & applications make mass market dead. Users can be highly targeted and redefine the amount of time they spend media. J. Jarvis said, “Long live the mass of niches. Some are producing services for more targeted interests, locals and communities: a local sports talk show, mobile weather service, local job fairs, parents’ guides etc.”(2009:)

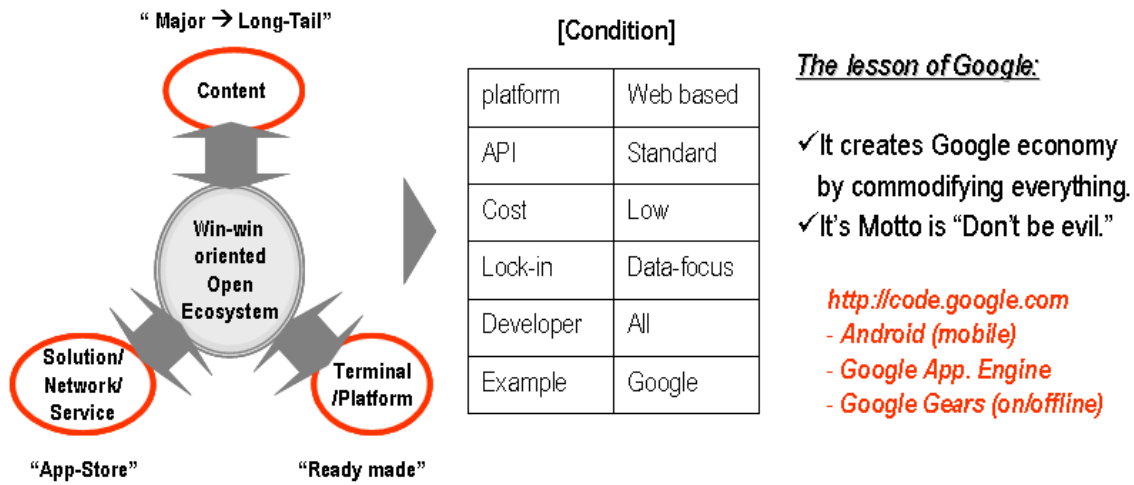
<Figure 12.8>. Architecture of Mass Customization



In terms of openness, the user needs the connected consumption thru niches, not blockbusters. It is important to open up the way they create content rather than offering closed APIs. Warner Music Group has joined EMI & Universal in agreeing to drop DRM on MP3 files. Technology such as the open source supports the interactivity. Innovators are Google, Amazon, Craigslist (community), etc. They know upstream resources become scarce.

Jeff Jarvis said, “Small is the new big. Long live the mass of niches.”(2009) It is same as the Long tail theory of Chris Anderson in 2004

<Figure 12.9>. Architecture of Openness

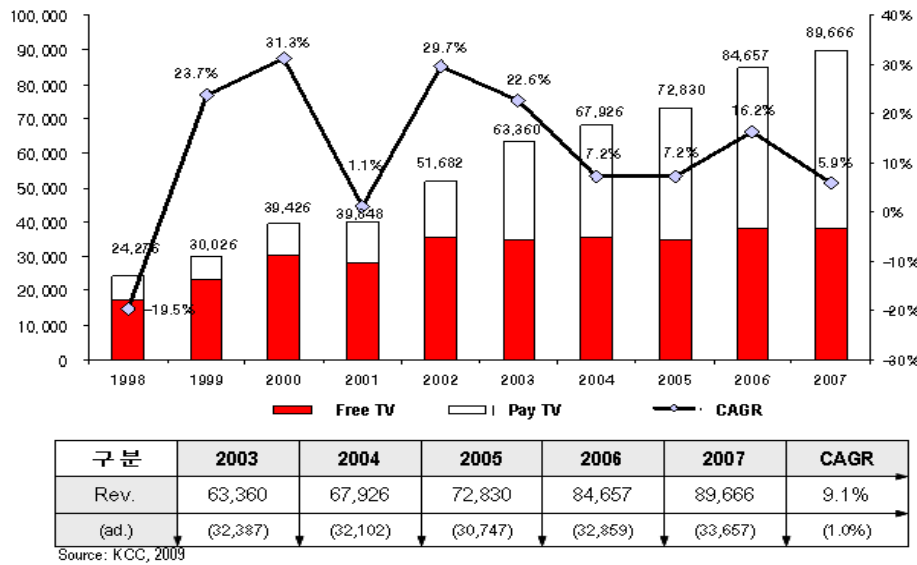


5. TV Market Saturation in Korea & KT Case

5.1 TV Market Saturation in Korea & New Remedy

The total TV revenue growth rate has decreased during 2002 and 2007, even if the volume of the total TV market has grown, for the free TV market has been saturated. Because of that, KBS (Korea Broadcasting System) is now seeking to increase the monthly fee it charges viewers, even as it faces criticism that it has neglected to improve its poor reception. It wants to raise the charge to at least 4,820 won (\$4.15) per month. It has remained at 2,500 won since 1981, due largely to poor reception quality.

<Figure 12.10>. Revenue Growth of free TV & pay TV in Korea



The competition between Internet protocol TV (IPTV) and cable TV is decreasing the ARPU (Average Revenue Per User) and the limitation of pay TV's main revenue source is hot policy issue. The current ARPU of Pay TV in Korea was only 1/7 of Japanese ARPU in 2007. The subscription revenue amounted to 46.4% of the total pay TV revenue in same year.

<Figure 12.11>. ARPU comparison (unit: US\$)

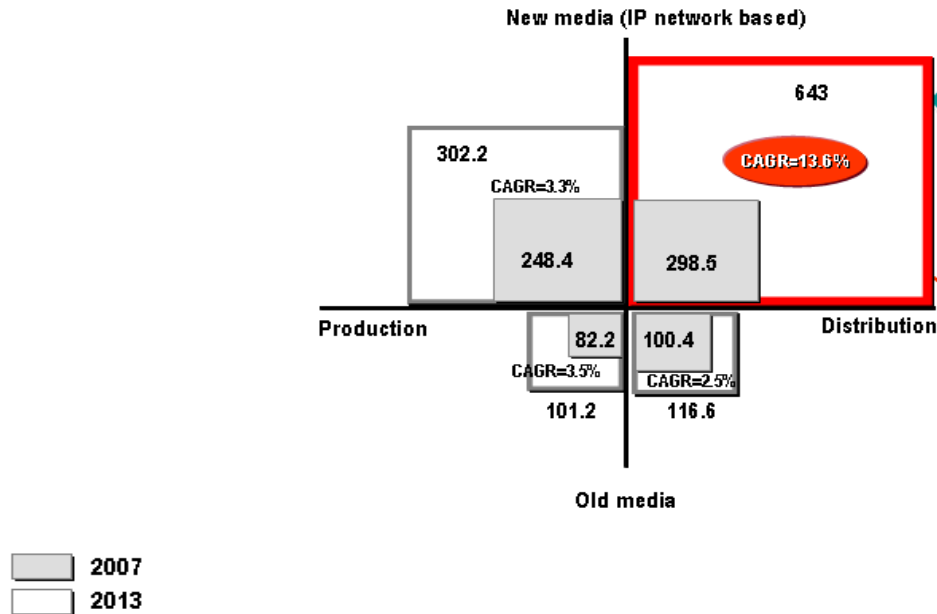


5.2 New Remedy in Media 2.0

It is expected that the competition between IPTV and cable TV will be intensified in coming year, in 2010. IPTV platforms will likely focus on securing subscribers, while cable TV providers will likely try to maintain their subscriber bases. Cable TV started to accelerate its shift to digital Cable TV, thereby planning to push up digital cable TV subscribers from 2.65mn households in 2009 to 3.39mn in 2010. Accordingly, the ratio of cable TV making the switch to digital would rise from 17.1% in 2009 to 22.9% in 2010. Currently, of 103 domestic SOs (system operators), 67 are owned by the top-five MSOs (Multiple System Operator), and 23 independent SOs will likely be increasingly consolidated.

In the distribution & IP media including digital cable TV, the market will grow and in Media 2.0, the content is still a key growth driver for the global media market. It will be won by players who can realize economies of scale & scope in production and distribution (not marketing) to efficiently allocate scarce attention.

<Figure 12.12>. Global media market growth (2007 vs. 2003) (unit: trillionW)



Source : PWC, ATLAS Research

Between 2007 and 2013, the market size in new media distribution sector will grow at the CAGR 13.6%. New direction is in this part, new media (mostly IP network)-based, micro-differentiated content distribution. New market drivers in Media 2.0 will be firstly, the technology & investment of Fixed-Mobile broadband, MPEG, and P2P, secondly, the regulation for fair competition, and lastly, the changing consumer preference such as peer production and connected consumption. The expected volume of global media market in 2013 will be totally W1,163 trillion (US\$1,163bil.).

5.3. KT Case: IPTV Role in Media 2.0

IPTV combines TV and high-speed Internet into one system through a set-top box and it delivers live digital TV channels and VOD contents at broadband speed. With this, a whole new viewing experience is possible. It promises a more interactive TV experience for viewers because they will be able to access a whole different kind of home entertainment. For example, viewers can forward or rewind any part of a show on TV as well as watch TV shows they missed through

VOD. Electronic bank transactions, text messaging, movie downloads and online chat sessions are also possible with this advanced form of television.

Another IPTV feature is e-commerce services. Viewers can choose to shop on home shopping channels and order the products they want to purchase by clicking their remote instead of picking up the phone. And it doesn't stop there. On certain TV dramas or shows, viewers can click on items worn by TV personalities and purchase the items for themselves or get information on where they can buy the items.

In addition to such entertainment, IPTV offers new ways for people to view educational content. Through IPTV, someone who lives in a remote part of Korea and doesn't have access to educational facilities close to home will be able to take part in an interactive lecture with famous instructors. This particular function has served as a crucial point for the government to encourage the spread of IPTV service.

Three telecom operators in Korea, KT, SKT and LGT have launched IPTV in 2008 and have 560,000 real-time IPTV subscribers and 1,500,000 subscribers including only VOD subscribers as of Aug. 2009. They need to develop unique applications for revitalization. For instance, KT launched its own new IPTV pricing plan called "a la carte" this summer and with this plan, KT customers can select the channels they want to subscribe to at a lower price than the full set of channels offered. With such kind of pricing strategy, KT would like to focus on "the Economy of Scale and Scope" in short run. KT is still approaching the traditional dominator type of the network platform and hesitating to exactly meet Media 2.0 paradigm. Big barrier is that there is little differentiation against the digital cable TV.

In long run, KT should adapt the Keystone strategy as the smarter platform, not as dumb piper. KT has recently started to synchronize its content sharing among 4 screens of QookTV, Qook Internet, Show, and Qook Internet phone.

<Figure 12.13>. KT's long run plan of synchronization, mass customization and openness



recently with partnership.²⁰ The iPhone may help boost sales of smartphones which allow users to surf the Web and compose e-mail messages, and increase wireless Internet usage in Korea. On the application store of iPhone, people can store address, share photos, watch TV Series on Demand, and diverse additional applications like schedule update, messenger, etc.

Quickly responding to the launch of Apple's iPhone, KT has released "Show Omnia" smartphone, the world's first smartphone device to provide WCDMA, Wi-Fi and WiBro connections at the same time. This is a fixed mobile convergence, or FMC, product that offers users both mobile and Internet phone services at a reduced cost. It is similar to SK Telecom's T Omnia2, which was launched less than a month ago before the iPhone was introduced. The smartphones allow users to connect to the Internet wirelessly at a relatively lower cost.

Though Korea is often dubbed one of the world's most advanced countries when it comes to IT, smartphones take up only 1 percent of the total mobile market, according to industry sources. To boost the industry, Samsung and KT have been actively promoting their own assortment of smartphone devices with partnership.

Specially optimized UI (User Interface) within each screen can be optimized on the personal level. KT's customized advertising business model 'Clear Skin' (Invisible internet skinned over IPTV) is an example. The viewer of TV content can select interactive advertising and buy the product or service directly with remote control. Reconstruction of digital content makes the user in hyperefficient ways like online stores with "Clear Skin". TV and smartphone user can request for related actor profile & VOD, BGM (Background Music) downloading, Mobile phone purchasing, Restaurant booking, and so on.

KT has also announced to plan opening up new ways to distribute content. It will integrate, manage and protect content, services and business models thru open standard. It will create open, reciprocal relationships with content providers and customers, allowing more access and granting more freedom in available ways to combine content and delivery. With Show Omnia, KT opened its Show App Store, which offers smartphone users various applications. By using Wi-Fi service, consumers can access a host of free content, including information on transportation, shopping, stock prices, UGC, etc.

KT's efforts will focus more on the development of eco-friendly services. The eco-friendly service sectors that KT has chosen are autos, eco-friendly buildings, cloud computing, green Internet Data Centers and green mobile communications and smart grids this year. KT will replace existing wire telephone networks with Internet-based systems to meet their carbon emissions reduction goals by 2013. Meanwhile, KT also announced will launch the Show App Store at the end of this year, its own version of an online applications store similar to Apple's App Store, from which users can download various services and content for mobile devices. SK Telecom launched its own App Web site, the T-Store, earlier this year. However, reception has been lukewarm due to the fact that T-Store apps can only be downloaded through SKT's platform, third generation mobile data network and not through computers or Wi-Fi connections. KT's Show App Store will be made available for Wi-Fi and computer downloads.

²⁰ Korea is the only country other than Iceland among the 30 members of the Organization for Economic Cooperation and Development that hadn't yet introduced the iPhone, which is available in about 80 countries. KT, Korea's largest phone and Internet company, is the first operator to sell the iPhone in the country and has been accepting advance reservations since Nov. 22. The 32-gigabyte iPhone 3G S will cost as little as 132,000 won (\$114) when purchased on a 24-month payment plan, according to KT, which is also introducing the 16-gigabyte 3G S and the 8-gigabyte 3G models. (Joongang Daily, Nov. 2009)

Media 1.0 goods are disconnected in consumption, and centralized mechanisms inform expectations about utility derived from consumption. For instance, local paper reviews books, movies, music bestseller lists, Top charts in Media 1.0. this information distortion mechanisms will disappear in Media 2.0. Short term gains have long term costs. KT's value creation and sharing will be maximized because it will make attention allocation efficiently with synchronization and consumer skepticism decreases with mass customization, and search and transaction costs will also diminish with open platform.

6. Conclusion

This paper discussed the role change of media platform from Media 1.0 to 2.0 and keystone concept by Iansiti & Levien (2004). After constructing three new architectures of keystone platform, KT case was introduced as a model in Korea. Whereas in the past, corporate performance depended heavily on industry attractiveness and organizational competence, a more flexible interdependence and a favorable relationship within the media industry will determine the future business success. Leading global companies including Google, Amazon, eBay and Microsoft as keystone have already often utilized the concept of the ecosystem for their business strategies and coping with environmental uncertainties.

This study emphasized the importance of the new role of the platform related to the current media changes. It explained four different role positions of platforms. In complexity trends, people in media sector know with the wisdom of media history, traditional media content owners or suppliers like TV broadcasting and networks won't shrink and rather exploit more diversified distribution platforms (or channels) and doing so, they could create more value and share it. As IT evolution has built upon that foundation of network convergence and is reducing the importance of distance, connecting people and speeding information or content flows and processes, this phenomenon presents a huge opportunity to improve media-economic efficiency, leading to innovation, new business opportunities, increased media choice and lower price that benefits all media content suppliers and users.

Virtually every service and application delivered over the IP based network incorporates digital media of some kind. This disrupts conventional media-focused dominant players and has pushed the entire value chain to develop innovative solutions that encompass media in some form. Google focuses on harvesting media content, combining the content with its robust search capabilities and communities to broaden its advertising revenue. Telecommunication firms are implementing solutions like IPTV, mobile TV and partnering with content and device companies to deliver the services over their networks. KT's entry into IPTV at the end of 2007 was a very ambitious step. This transformation is a journey from the network-driven and company-led to a content-driven and service-led environment. The most effective transformation programs comprise customer-centric business units.

To be a keystone platform in Media 2.0 to promote the interaction among media customers and partners, KT focuses on new architectures like synchronization, mass customization and openness. In synchronization support, KT aims to make same content, transactional services and applications available across all windows simultaneously, wherever practical and commercially viable, and with a common look and feel. For supporting mass customization, customer segmentation is not just a demographic profile. It will be characterized through needs-based segmentation and put at the center of all businesses and service development. To create more

value and share it, KT will give up some control of assets, then collaborators can remix, add to, and distribute content. As Jarvis said, “Collaboration is co-creation.”

With cooperation challenge, content providers don't need contract partner for revenue share in the one way value chain, but they need partners to help them extend their economies of scale & scope in the global media world. It means that they want the TV platforms also to be their helpers, enablers, keystones, rather than dominators. From this standpoint, in the mid and long term, the keystone approach of TV platforms is more of importance for both, traditional and new media platforms, in whatever stages they are. They must aggressively integrate sophisticated media search, management, integration and personalization capabilities, user-generated and premium content, communications and transaction capabilities that rival those offered by other content & solution suppliers and platforms.

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Conclusion: The Busan Declaration - 28 August 2009

The Northeast Asia Economic Forum (NEAEF), in partnership with the Busan Metropolitan Government, convened the 18th annual Northeast Asia Economic Forum meeting in Busan, Republic of Korea, on 27-28 August 2009. Representatives from the People's Republic of China, Japan, Republic of Korea, Mongolia, the Russian Federation, the EU, and the United States met to take steps toward greater cooperation and integration among Northeast Asian nations. Busan, Republic of Korea, a port city with a long tradition as a vital economic hub for Northeast Asia, served as an excellent backdrop for discussing the opportunities for Northeast Asia to reemerge from a global crisis.

This year's annual conference was particularly important in developing a functional framework for cooperation, in line with continuous efforts that have been made for almost two decades, since the NEAEF launched its vision for a peaceful and prosperous Northeast Asia through regional economic cooperation and development. Much of the discussion in the Forum noted that the current environment provides opportunities to revitalize regional development and facilitate regional economic recovery.

The annual conference also provided another milestone toward a common goal of regional integration through productive discussion of vital themes within the Forum's sessions. The specific sessions focused on Cross-Border Transportation and Logistics Cooperation, Energy Cooperation in Northeast Asia, Green Energy Cooperation and Partnerships in Energy Efficiency and Conservation, Financial Cooperation in Northeast Asia and Steps towards a Regional Financial Institution for Cooperation and Development, and Communication and Contents Industries in Northeast Asia.

A dynamic opening ceremony included a statement delivered on behalf of President Lee Myung Bak of the Republic of Korea and noted the importance of the work of the Northeast Asia Economic Forum in providing direction for future regional economic development, especially the potential for NEAEF to act as a catalyst for multilateral functional cooperation. Congratulatory remarks were delivered by representatives of China (the former Vice Chairman of the Standing Committee of the People's Congress, PRC), Japan (Dr. Nakayama Taro, Member of the Diet and former Foreign Minister), Mongolia (a statement from the President of Mongolia), Russia, the EU and the USA. The keynote address was delivered by the Chairman of the Korean International Trade Association and of the G20 Summit Coordinating Committee of the Office of the President of the Republic of Korea, who stressed the importance of Northeast Asia's role in bringing rapid stability to the global economy.

The session on Cross-Border Transportation and Logistics Cooperation clearly identified the role that cross-border transport plays in localized regional development in the area. Talks on highway and rail transport underscored the need for greater financing to improve cross-border transport links, to develop regional transit hubs, and to standardize transit tariffs and documentation. This would benefit regional efforts to develop more efficient bilateral and multilateral trade relationships and tie into a larger set of global networks for greater economic prosperity.

The session on Energy Cooperation in Northeast Asia showcased the opportunity for cross-border cooperation created by the new post-economic-crisis equilibrium in energy supply and

demand. Global factors such as restructuring of energy markets, the problem of carbon emissions and global climate change, and a new US administration with a green energy and environment agenda suggest a significant opportunity to develop regional strategies to diversify sources of energy resources to meet a diverse profile of energy needs. These strategies should promote stability for the Northeast Asian region and continue to support the region's position as the fastest growing region of the world. It was proposed that Northeast Asia would likely continue to have growing demand for energy resources and that this demand would require significant investment in infrastructure in order to take advantage of real efficiencies in utilizing energy, as well as gaining access to new sources of energy.

The session on Green Energy Cooperation and Partnerships in Energy Efficiency and Conservation informed the participants about the new Green Growth Policy of the Republic of Korea. This policy proposes a new pathway that provides a solution to the issue of climate change, energy vulnerability and economic recovery. The session provided information on the tangible recent achievements within China in energy efficiency and reduction of greenhouse gas emissions. In addition, technological solutions, specifically the use of electricity within Japan, were offered as a significant pathway for energy efficiency and emissions reduction. Energy storage and smart-grid technology were identified as areas of particular promise. Finally, it was recognized by the session that Northeast Asia should feature its strength as a leader in Green Growth that is broadly defined as an approach that simultaneously promotes economic growth, quality of life, job creation and concern for the environment, especially the role of emissions in global climate change.

The session on Financial Cooperation and Development highlighted the role a Northeast Asian bank would play in the region in attracting sufficient capital for cross-border projects for Northeast Asia. It was noted that Northeast Asia is the only region in the world without a multilateral bank to serve it. It was noted that the NEAEF would be the ideal organization to organize and prepare relevant documents for policy makers and the general public. The research center for financial cooperation under the leadership of NEAEF is located at Nankai University. The presentations and comments provided tangible and functional approaches to create a multilateral development bank. There was also discussion about Free Trade Agreements (FTAs) among the countries of Northeast Asia and this how they might affect Northeast Asian economic cooperation.

The session on Communication and Contents Industries in Northeast Asia featured a new direction for the NEAEF annual forum. The communication and contents industries are becoming a significant engine of growth for Northeast Asia and are moving from a regional to a global commodity. Significant synergy may be possible for cooperation within Northeast Asia for the communication and contents industries in the face of technological changes.

A major topic that the participants discussed throughout the conference is the timing, structure and financing requirements for establishing a Northeast Asian Bank for Cooperation and Development (NEABCD). The regional bank is seen as an ideal regional and multilateral vehicle for capitalizing cross-border infrastructure development projects.

It was announced that the Government of Mongolia has invited the Forum to Ulaanbaatar, which will be the venue for the 19th Northeast Asia Economic Forum next year.

Forum participants expressed appreciation for the support provided by the Freeman Foundation and other cooperating institutions for the Young Leaders Program, now in its fourth year, that features Fellows from the People's Republic of China, Japan, Republic of Korea, Mongolia, the Russian Federation, and the United States. The Fellows' attendance contributed to the Forum's goal of ensuring a long-term future of cooperation and integration in Northeast Asia.

The NEAEF expressed its gratitude to the Busan Metropolitan Government for hosting and providing generous support for the Forum's annual conference in Busan. The NEAEF also expressed its gratitude to the Northeast Asia Center for Regional Innovation of Pusan National University, to Dong-A University, and to other cooperating institutions for their assistance with the Forum conference and the Young Leaders Program in Busan.

*Appendix: Agenda***Eighteenth Northeast Asia Economic Forum**

Busan, Korea 26–29 August 2009

Organized by

Northeast Asia Economic Forum
and
Busan Municipal Government

Cooperating Institutions

Korea Energy Economics Institute
Korea Institute for International Economic Policy
KT
Korea International Trade Association
Asian Institute for Regional Innovation, Pusan National University
Busan Development Institute
Ministry of Culture and Sports, Republic of Korea
Korea Asia Pacific Institute
BOGO Economic Institute
• •
JCPAEC and the Ministry of Foreign Affairs, Japan
Japan Bank for International Cooperation
• •
University of California Berkeley, Asia Research Program
University of Hawai‘i, College of Social Sciences
• •
China Asia Pacific Institute
Tianjin Municipal Government

AGENDA

WEDNESDAY, 26 AUGUST 2009

All day check-in

Paradise Beach Hotel
1408-5 Jung-Dong, Haeundae-gu
Busan 612-846 Korea
Tel: +82-51-742-2121
Fax: +82-51-742-2100

18:30

Reception for Speakers and Commentators

THURSDAY, 27 AUGUST 2009

8:30-9:30 Opening Ceremony

Chair: **LEE-JAY CHO**, Chairman, Northeast Asia Economic Forum

Welcoming remarks by **HUR NAM-SIK**, Mayor of Busan Metropolitan City

Remarks by His Excellency President **LEE MYUNG-BAK**, Republic of Korea, presented by **LEE JIN-BOK**, Member of the National Assembly of Korea

Congratulatory remarks by **PARK KWAN-YONG**, Former Speaker of the National Assembly of Korea and Honorary Conference Chairman

Remarks by **JIANG ZHENGHUA**, Former Vice Chairman, Standing Committee of National People's Congress of China

Congratulatory remarks by **GEORGE ARIYOSHI**, Former Governor of Hawai'i and Honorary Conference Chairman

Congratulatory remarks by **Representative of NAKAYAMA TARO**, Member of the Japanese Diet and Former Foreign Minister

Congratulatory remarks by **TSAKHIAGIIN ELBEGDORJ**, President of Mongolia, presented by **DASHDORJ LUVSANDASH**, Public Finance Advisor to the President of Mongolia

Congratulatory remarks by **SHIN JUNG-TAEK**, President of the Busan Chamber of Commerce & Industry

Congratulatory remarks by **VYACHESLAV I. SHPORT**, Governor of Khabarovsk Krai, presented by **PAVEL MINAKIR**, Academician and Director, Economics Research Institute, Far Eastern Branch, Russian Academy of Sciences

Congratulatory remarks by **GLYN FORD**, Former Member of the European Parliament and Chairman, Asia Policy Committee

9:30-10:00 Keynote Speech

SAKONG IL, Chairman & CEO, Korea International Trade Association; Chairman, G20 Summit Coordinating Committee, Office of the President, Republic of Korea

10:00-10:30 Coffee Break**10:30-11:45 Session 1: Cross-Border Regional Cooperation: Transportation and Logistics**

Chair: **GLYN FORD**, Former Member of the European Parliament and Chairman, Asia Policy Committee

LIM JUNG-DUK, Member of Presidential Committee on Regional Development, Director, Asia Institute for Regional Innovation, Pusan National University, Korea

New Regionalism across the Korea-Japan Strait: Cross-Border Cooperation between Busan and Fukuoka

ARAMAKI EIKI, Chairman, Infrastructure Development Institute, Japan
Development of Intermodal Land Transport in Asia

11:45-12:15 Commentators

HORIKAWA HIROSHI, Director, Port and Harbor Research Institute, Executive Director, Japan Port and Harbor Association

GANBOLD BAASANJAV, Director General, Asia Department, Mongolian Ministry of Foreign Affairs

KIM YOUNG JAE, Professor, Pusan National University

ZOU PING, Chairman, China API

DISCUSSION

12:15-13:30 Lunch

13:30–14:30 Session 2: Energy Cooperation in Northeast Asia

Chair: **STEVE COWPER**, Former Governor of Alaska

ZHANG JIANPING, Director, Department of International Regional Cooperation, Institute for International Economic Research, National Development and Reform Commission, China

Post-Economic Crisis: Rebuilding Energy Supply & Demand Equilibrium in Northeast Asia

JOHN TICHOTSKY, Advisor to the Governor of Chukotka Region of Russia
New US Energy Policy: Potential Implications for Northeast Asian Demand and Policy

RUSLAN GULIDOV, Senior Program Officer, Energy & Transport, Tumen Secretariat, UNDP

Energy Cooperative Activities in NEA under the Greater Tumen Initiative (GTI)

14:30–15:15 Commentators

AKAMATSU SHUICHI, Director, Economic Security Division, Ministry of Foreign Affairs, Japan

KIM KYUNG-SOOL, Senior Research Fellow, Korea Energy Economics Institute (KEEI)

UCHIDA MITSUHO, Adjunct Professor, Tokyo Women's University

DISCUSSION

15:15–15:30 Coffee Break

15:30–16:45 Session 3: Green Energy Cooperation and Partnership in Energy Efficiency and Conservation

Chair: PAVEL MINAKIR, Academician and Director, Economics Research Institute, Far Eastern Branch, Russian Academy of Sciences

Keynote Speech: TOH KYUNG-HWAN, Director General for Energy Policy, Presidential Committee on Green Growth, Republic of Korea

SHEN LONGHAI, Director, Energy Management Company Committee of China Energy Conservation Association

China's Progress in Energy Saving and Emission Reduction and the Development and Utilization of Renewable Energy

IINUMA YOSHIKI, Director of Research Department, Japan Electric Power Information Center, Inc. (JEPIC)
Electrification for Green Future

16:45–17:30 Commentators

YAMADA MITSUO, Professor, Chukyo University

ZHANG JIANPING, Director, Department of International Regional Cooperation, Institute for International Economic Research, National Development and Reform Commission, China

JOHN TICHOTSKY, Advisor to the Governor of Chukotka Region of Russia

DISCUSSION

FRIDAY, 28 AUGUST 2009

9:00–10:30 Session 4: Financial Cooperation in Northeast Asia—Steps towards a Regional Financial Institution for Cooperation and Development

Co-chairs: LEE-JAY CHO, Chairman, Northeast Asia Economic Forum and WANG SHUZU, Former Vice Mayor of Tianjin Municipal Government

LEE CHANG JAE, Director, Center for International Development Cooperation, Korea Institute for International Economic Policy

Will Northeast Asia's Functional Economic Integration Lead to Institutional Regional Economic Integration?

CHIBA YASUHIRO, Board Member of Northeast Asian Studies & Exchange Network, Japan, Former Professor of Economics, Akita Keizaihoka University,

Japan and **YAMAMOTO TAKASHI**, Associate Professor of Economics, Akita International University
"Northeast Asian Development Finance Cooperation: The New Bank and the Support Network"

KIM JOON KYUNG, Professor, Korea Development Institute School, Former Vice-President of Korea Development Institute

MA JUNLU, Dean, School of Economics, Nankai University, Vice Director, Research Center for Financial Cooperation in Northeast Asia
Economic Integration of Northeast Asia and the Function of the Northeast Asia Bank of Cooperation and Development

LI WEIBIN, President, Tianjin Branch, China National Development Bank

STANLEY KATZ, Former Vice President, Asia Development Bank
The Northeast Asian Bank for Cooperation and Development: From Rhetoric to Reality

10:30-10:45 Coffee Break

10:45-12:00 Commentators

HONG JAE-HYONG, Former Deputy Prime Minister for Finance and Economy; Chairman, Special Committee on Balanced National Development and Multifunctional Administrative City; Member of the National Assembly, Republic of Korea

ZHANG XIAOYAN, Tianjin Municipal Development and Reform Commission

PAVEL MINAKIR, Academician and Director, Economics Research Institute, Far Eastern Branch, Russian Academy of Sciences

LEE JAI MIN, Executive Director, Financing Department, Korea Exim Bank

DASHDORJ LUVSANDASH, Public Finance Advisor to the President of Mongolia

LEE KYE-SIK, President of Busan Development Institute

ZOU PING, Chairman, China API

CHUL HO LEE, Professor, Pusan National University

12:00-12:30 DISCUSSION

12:30-13:45 Lunch

13:45-14:30 Session 5: Communication and Contents Industries in Northeast Asia

Chair: **RICHARD DUBANOSKI**, Dean, College of Social Sciences, University of Hawai'i at Manoa

PARK SEONGHO, Director, Regulation Cooperation Department, NHN: Next Human Network
Korea's Game Industry

MINZHEONG SONG, Research Director, KT
Digital Media Platform's Role & KT case

14:30–15:00 Commentators

LI HUAI LIANG, Dean of Media Management School, Communication University of China

AOSAKI TOMOYUKI, Tentsu Inc., National Resources Project Office, Social Project Planning Division

DISCUSSION

15:00–15:15 Coffee Break

15:15–16:30 Closing Session

Chair: **LEE-JAY CHO**

Summaries by five Session Chairs

Busan Declaration

Closing of the Eighteenth Forum of NEAEF

18:00-20:00 Dinner Reception

SATURDAY, 29 AUGUST 2009

9:00-11:30 Field Trip - Busan City Port

SUNDAY, 30 AUGUST 2009

Morning Check out of hotel and departure from Busan