

It's Possible

Private Sector Perspective on PPP

Typical issues and experiences for success of PPP
project in Korea

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Daewoo Engineering&Construction

Presenter's Profile



Mr. Yoon, Young-Hoon

General manager

PFI Business Team

**Daewoo E&C LTD, CO,
Seoul Korea**

Academic background

- **Seoul National Univ. Civil Engineering**
- **Purdue Univ. Civil Engineering, West Lafayette, IN**
- **Univ. OF Michigan (MBA), Ann Arbor, MI**

Experience

- **1985 ~ 1986 : Domestic site Engineer**
- **~ 1988 : Overseas site Engineer**
- **~ 2004 : Design Engineer & Proposal Manager**
- **~ 2006 : Leader, Engineering team for GK PJ**
- **~ 2008 : Leader, Operational Excellence TF**
- **~ 2008 : Chief Manager, Civil development PJ team**
- **~ Present : Chief Manager, PFI Business Team**

Contents



Interests of General Contractors in PPP



Key Points to secure success



Risk Hedge



Issues and experiences in Korea

● Case I . Yongin-Seoul Highway (Operation)

● Case II . Busan-Geoje Fixed Link (Construction)

● Case III. Sosa-Wonsi Doubletrack (Negotiation)



Notes for Successful PPP Project

Interests of General Contractors in PPP

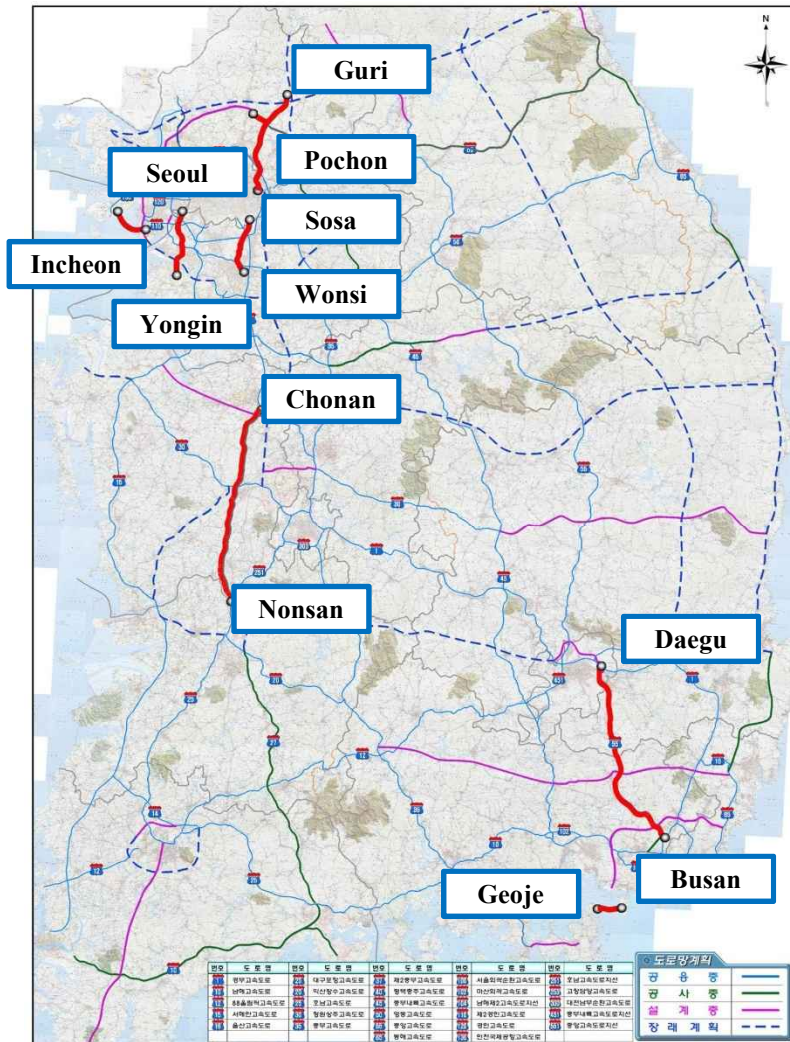
1. Interest of General Contractors in PPP

PPP PROJECT

In-time
Provision of
Project Budget

Work Scope
Expansion

Contribution
to Society



Daewoo E&C

- Yongin-Seoul Highway (2005.10~2009.06)
- Busan-Geoje Fixed Link (2005.10~2010.12)
- Sosa-Wonsi Double Track (Negotiation)
- Guri-Pochon Highway (Negotiation)

Others

- Chonan-Nonsan Highway (1997~2002)
- Daegu-Busan Highway (2001.2~2006.2)
- Incheon Grand Bridge (2005.6~2009.10)

In-time Provision of Budget

- Use of private sector's money secure and expedite progress of project

- Benefits of Stakeholders

CI : - Stable & expectable revenue Plan

- Economy of size : cost saving in procurement and contract

- Incentive of cost saving by early completion of construction

- Reducing overhead cost and capital cost

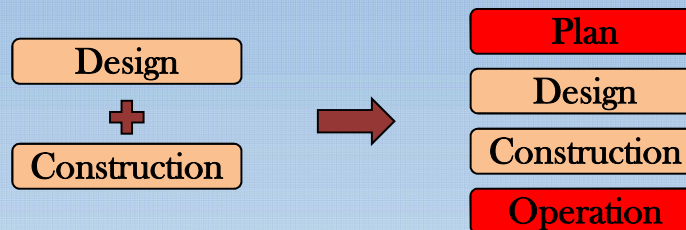
Gov. : Flexibility of provision of Infra-structure, early service to public

FI : Long term high yield big investment project

User: Improve time-value, saving cost in transportation

Work Scope Expansion

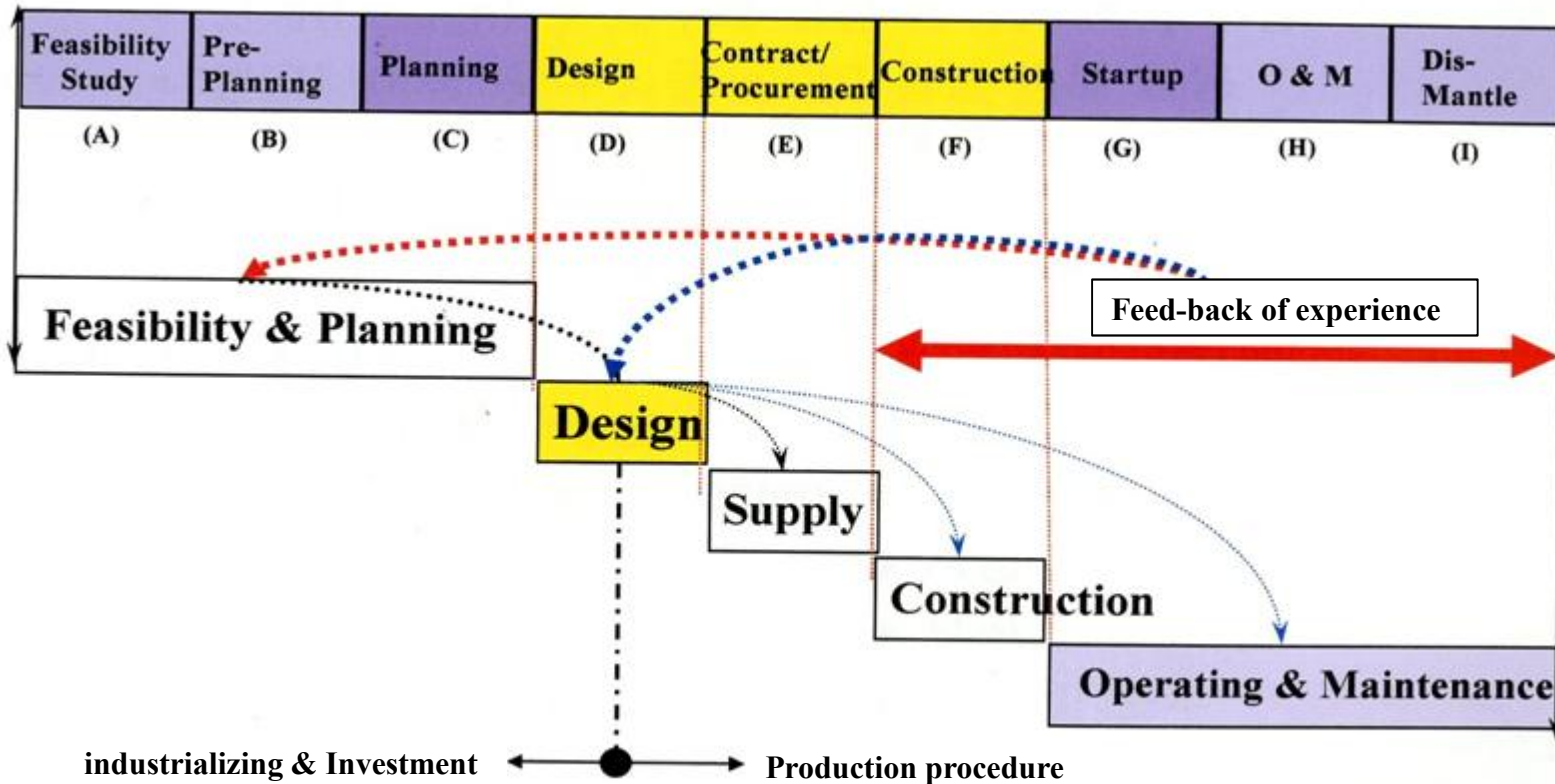
- Development of new projects by using creativity of private sector
(finding Blue Ocean)
- Improvement of management capability to deal with wider scope of work
(high risk, high return)



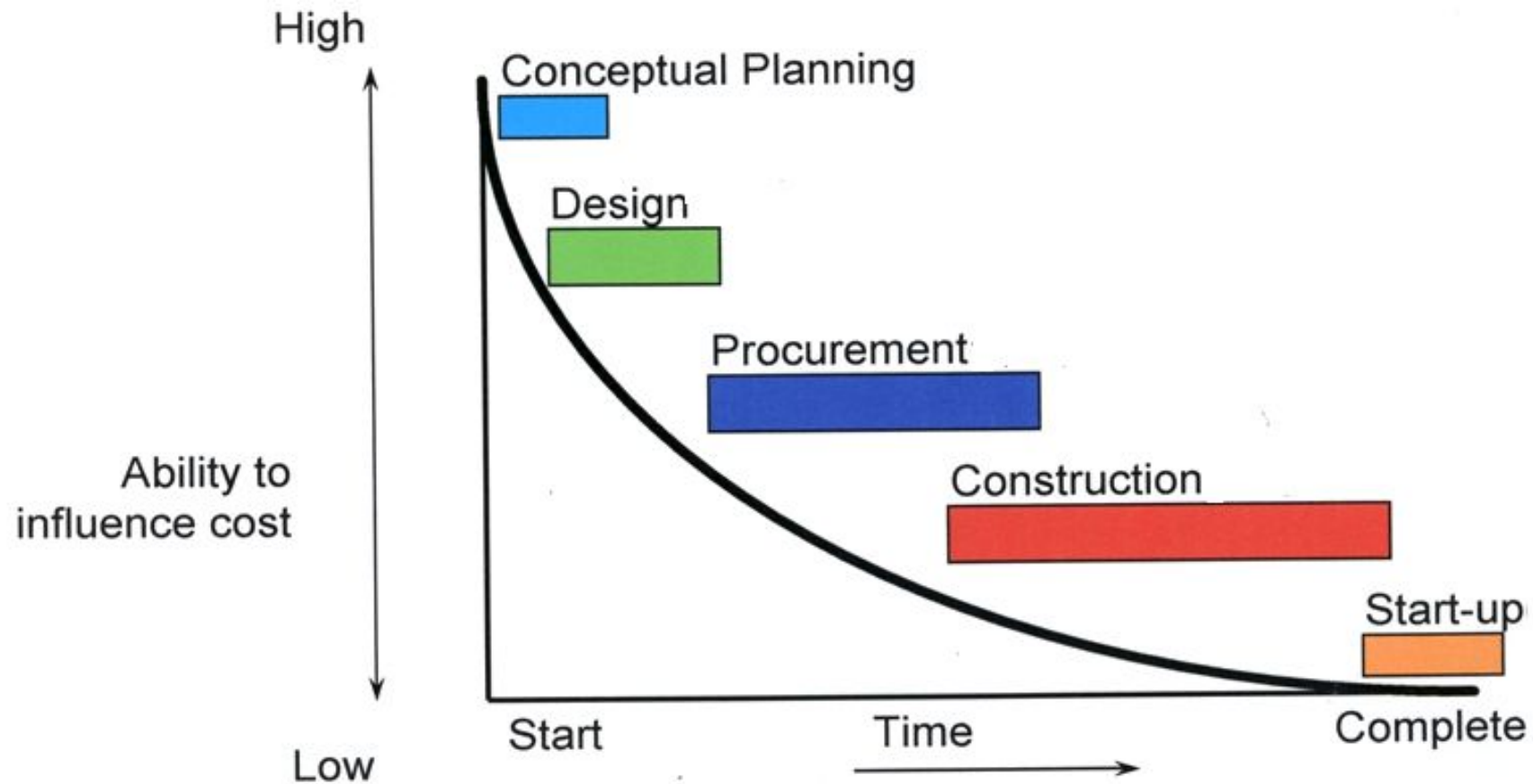
- Strengthen work experience to pass pre qualification tests in government solicited projects

1. Interests of General Contractors in PPP

Value chain of Construction project

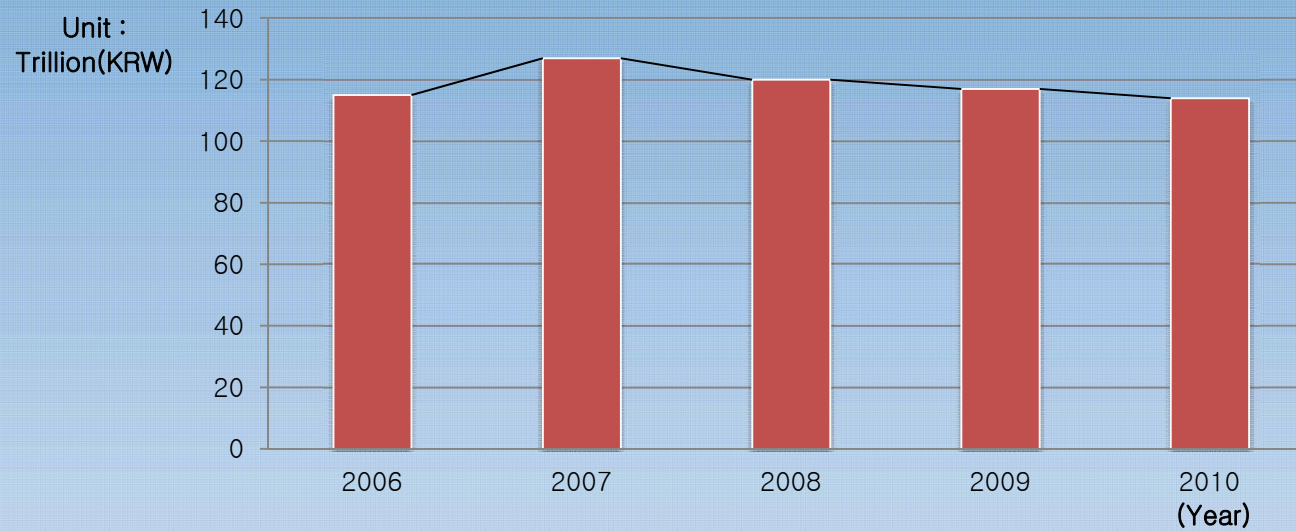


Value chain & Variability



Contribution to Society

Alternative source of project to Government budget



Relieve stress of our society due to insufficient infrastructure

Key points to secure success

Optimization of project plan

Construction cost

- Optimum design based on LTV (Life Time Value)
- Reasonable amount of budget for contingency

Operational cost

- The better system, The lower manpower
- Systematic approach to repair / maintenance

Financing cost

- Good cooperation with investor and loaners save the cost of PF
- Use real-estate development project to improve profitability of the PJ, but keep in mind unknown big risks

Risk Hedge

Method

Insurance

- Construction period : Construction all risk,
Advanced loss of profit
- Operation period : Material damage,
Business interruption

Gov. subsidy

- Construction period : Max. 50% as stated in The agreement
- Operation Period : Compensation by government within the
amount of cost based on government estimation (Solicited project)

Exit Plan

Buyout Rights

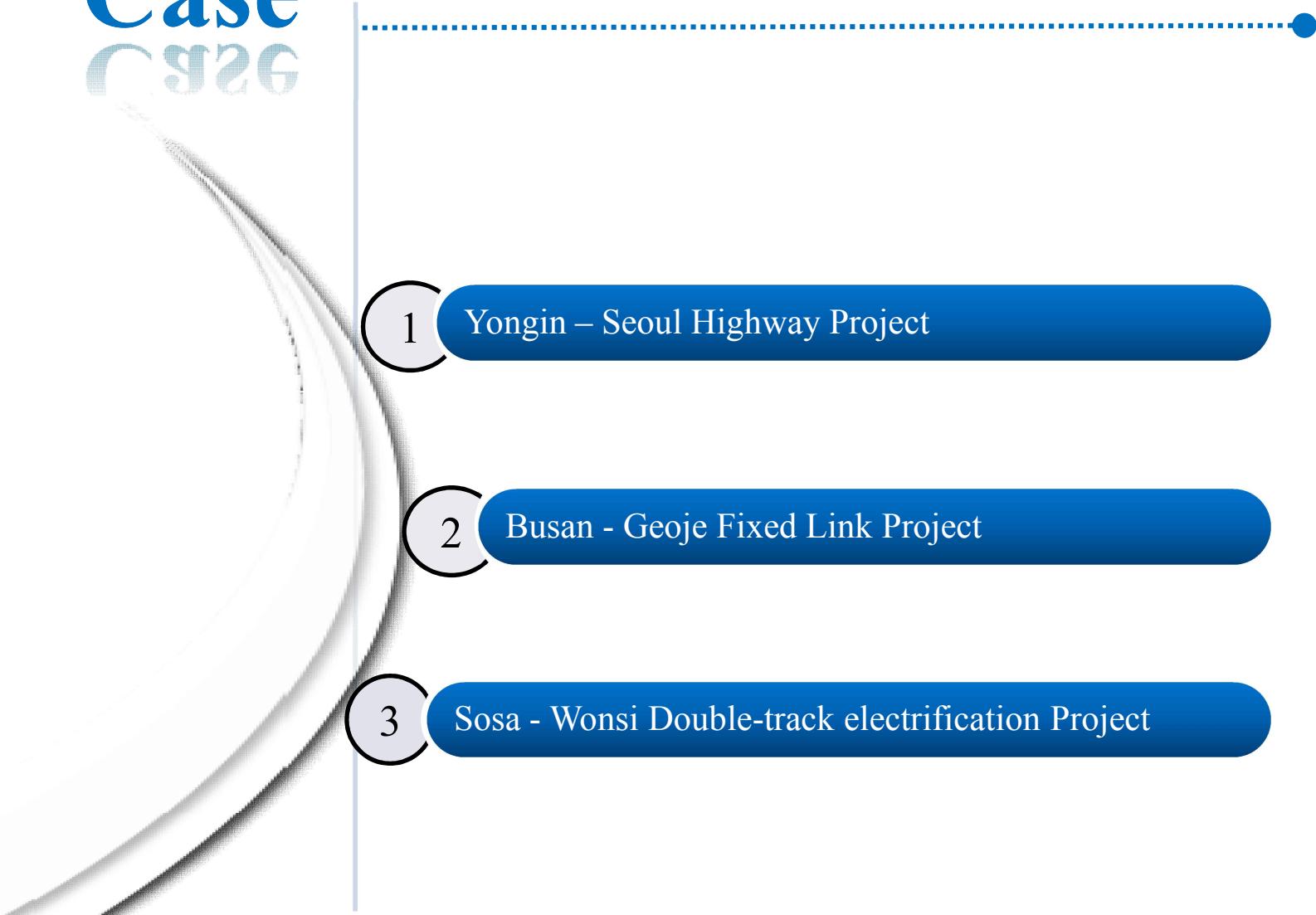
The concessionaire may request the government or a local government to purchase the project(including supplementary projects) in case it is not able to construct, manage or operate infrastructure facilities due to inevitable circumstances as disasters

Reimbursement on cancellation

If the project is cancelled due to the competent authority's fault, project concessionaire's fault or inevitable circumstances, the competent authority reimburses the opportunity cost on private capital to the concessionaire based on the cancellation reason

Issues and experiences in Korea

Case

- 
- 1 Yongin – Seoul Highway Project
 - 2 Busan - Geoje Fixed Link Project
 - 3 Sosa - Wonsi Double-track electrification Project

4. Issues and experiences in Korea

Yongin-Seoul Highway PJ

Location Map



4. Issues and experiences in Korea

Yongin-Seoul Highway PJ

Summary

Item		Contents
Location		Yongin ,Kyonggi-do ~ Gangman-gu, Seoul
Type		BTO(Build-Transfer-Operation)
Size		Total Length 22.9KM
Period		Construction : 2005. 10. ~ 2009. 06. Operation : 2009. 07. ~ 2039. 06.
Total Invest Cost	Equity	165 Billion(KRW) (15.3%)
	Loan	495 Billion(KRW) (45.9%)
	Subsidy	418 Billion(KRW) (38.8%)
	Total	1,078 Billion(KRW) (100%)
IRR		7.01% (Real value after tax)

4. Issues and experiences in Korea

Yongin-Seoul Highway PJ

History

Period	Contents
2002. 09. 16	Submission Project Proposal
2003. 09. 18	Request for Alternative Proposal
2003. 12. 18	Selection of Preferred Bidder
2003. 12. 23	Establishing SPC
2005. 01. 10	Concession Agreement
2005. 10. 01	Starting Construction
2006. 12. 15	Financial Commitment
2009. 06. 30	Completion of Construction
2039. 06. 30	Completion of Operation

4. Issues and experiences in Korea

Yongin-Seoul Highway PJ

Consortium

Item		Contents
Investment Ratio	CI	Daewoo 10.304%, Lotte 8.832%, Shindonga 6.992% SK 6.992%, Posco 3.200%, Seoungji 2.944% Wonha 0.736%
	OI	-
	FI	MKIF 35.000%, KIF II 25.000%
Construction Ratio		Daewoo 25.76%, Lotte 22.08%, Shindonga 17.48% SK 17.48%, Posco 8.00%, Seoungji 7.36% Wonha 1.84%

Yongin-Seoul Highway PJ

Engagement

Negotiation

Loan

Construction
Operation

Issue

- **Insufficient Construction Time**
 - Residence movement into Pangyo new town was planned in the year of 2008. But Completion of the PJ is scheduled by the end of 2010.
 - ⇒ Need to reduce two years in the PJ schedule.

Solution

- Government cooperated to shorten the periods of several steps before start of construction work
 - Negotiation
 - Finance
 - Approval of execution, etc

Implication

- Collaboration Government with private sector is needed to get positive outcome for early service of the infrastructure, which will benefited to users.

4. Issues and experiences in Korea

Yongin-Seoul Highway PJ

Engagement

Negotiation

Loan

Construction
Operation

Issue

- Big difference in traffic volume estimation between gov. & private side



Solution

- Resolved to reflect the traffic volume onto reasonable stage of the operation



Implication

- Reasonable approach to resolve conflicts with uncertain facts will expedite the project and improve mutual benefit

4. Issues and experiences in Korea

Yongin-Seoul Highway PJ

Engagement

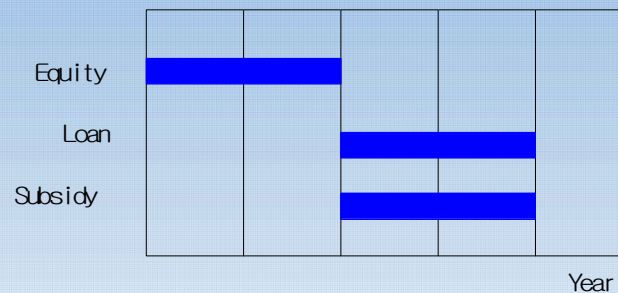
Negotiation

Loan

Construction
Operation

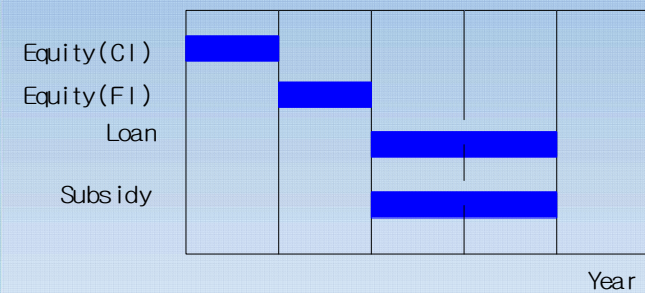
Issue

- **Low IRR, ROE**
FI's requirement is not satisfied.



Solution

- **Changed Sequence of Capital Input**
Early input of CI's Capital reduced total Capital cost
⇒ **ROI of FI was satisfied**



Implication

- Structure of Project Finance is very important to meet certain conditions of Investors' requirements, So you need to work with experienced financial expert

4. Issues and experiences in Korea

Yongin-Seoul Highway PJ

Engagement

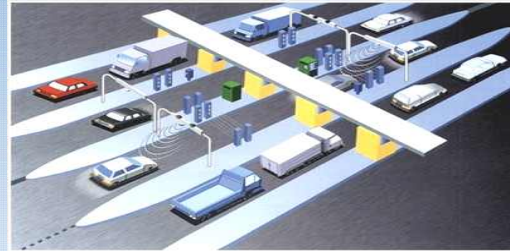
Negotiation

Loan

Construction
Operation

Issue

- Civil Complaints
(Residence, Local Government, NGO, etc)
- One of the most critical reason
for delay



Solution

- Early installment of ETCS
(Electric Turbocharger Control System)
- Government approved the increase of
Project budget and FI financed.
So fiscal problem was solved.

Implication

- To resolve Civil Complaints, Government, FI, CI should be early engaged and do cooperate to resolve

Busan-Geoje Fixed Link PJ

Location Map



4. Issues and experiences in Korea



4. Issues and experiences in Korea

Busan-Geoje Fixed Link PJ

Summary

Item		Contents
Location		Geoje, Kyongnam-do ~ Kangseo-gu, Busan
Type		BTO(Build-Transfer-Operation)
Size		Length 8.2KM, Cable stayed Bridge 2, Immersed Tunnel
Period		Construction : 2004. 12 ~ 2010. 12 Operation : 2010. 12 ~ 2050. 12
Total Invest Cost	Equity	430 Billion(KRW) (20.9%)
	Loan	1,055 Billion(KRW) (51.2%)
	Subsidy	574 Billion(KRW) (27.9%)
	Total	2,059 Billion(KRW) (100%)
IRR		9.49% (Real value after tax)

4. Issues and experiences in Korea

Busan-Geoje Fixed Link PJ

History

Period	Contents
1998. 01. 08.	Public notification of the request for proposal
1998. 05. 26.	Selection of Preferred Bidder
2003. 02. 18.	Concession Agreement
2003. 03. 18.	Establishing SPC
2003. 12. 18.	Financial Commitment
2004. 12. 10.	Starting Construction
2010. 12. 09.	Completion of Construction
2050. 12. 09.	Completion of Operation

4. Issues and experiences in Korea

Busan-Geoje Fixed Link PJ

Consortium

Item		Contents
Investment Ratio	CI	Daewoo 43.45%, Daelim 21.30%, Doosan 13.60% SK 8.0%, Koryo 5.7%, Hanil 5.3%, Wonha 1.5%
	OI	Kumho Trading 1.15%
	CB Holders	KDB 30.8%, Kyobo Life 26.1%, Shinhan Bank 10.8% Busan Bank 9.2%, Daegu Bank 7.7% LIG Insurance 7.7%, KIF 7.7%
Construction Ratio		Daewoo 44.6%, Daelim 21.30%, Doosan 13.60% SK 8.0%, Koryo 5.7%, Hanil 5.3%, Wonha 1.5%

4. Issues and experiences in Korea

Busan-Geoje Fixed Link PJ

Engagement

Negotiation

Loan

Construction
Operation

Issue

- **Advanced technology**
 - Immersed Tunnel : design and construction
 - Cable stayed bridge.
- **Huge amount of PJ finance**
 - 1.5 billion dollars



Solution

- **Invited Overseas Investors**
 - Immersed Tunnel : VINCI, Boskalis
 - Cable stayed bridge : VINCI
 - Financial Investor : CKI



CI
VINCI



FI
CKI



CI
Boskalis

Implication

- Use Overseas resources to realize dream projects in your country.
- Prepare practical approach to make good deal for mutual benefits.

4. Issues and experiences in Korea

Busan-Geoje Fixed Link PJ

Engagement

Negotiation

Loan

Construction
Operation

Issue

- **Big gap in IRR**
(Internal Rate of Return)
 - Local experience : 8~9%
(Daegu~Busan, Cheonan~Nonsan)
 - IRR asked by Overseas Investors
 - 11.74%

Solution

- Government set the IRR = 9.49%
Based on previous agreement
(Port:8%, Highway:9%, Railway:10%)



- Overseas Investors gave up
→ PJ had been delayed

Implication

- When foreign direct investment is decided, local practices should be considered such as returns on Investment, legal requirements, and tax and tariff etc.

4. Issues and experiences in Korea

Busan-Geoje Fixed Link PJ

Engagement

Negotiation

Loan

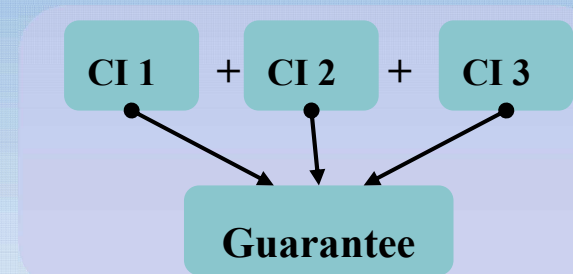
Construction
Operation

Issue

- Risk taking
 - Government asked CI to take all risks on completion of construction & traffic volume.

Solution

- CI shared Risks and agreed to complete the project on time.
- CI&FI share risk on traffic volume



Implication

- Risk on completion of construction on time is taken by CI
- Risk on revenue during operation period (Key in traffic volume) should be reasonably shared among participants.

4. Issues and experiences in Korea

Busan-Geoje Fixed Link PJ

Engagement

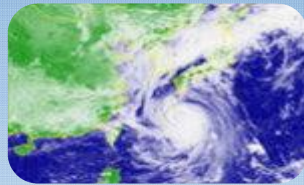
Negotiation

Loan

**Construction
Operation**

Issue

- Loss due to 'Act of God'
 - Typhoon, Earthquake, Flooding etc



- Clarification on responsibility about civil complaints

Solution

- Purchased insurance with reasonable coverage
 - Construction all risk
 - Marine Cargo and MDSU (Marine delay on start-up) insurance
- Division of Responsibility based on origin
 - Project planning issue : Government
 - Construction issue : Constructors

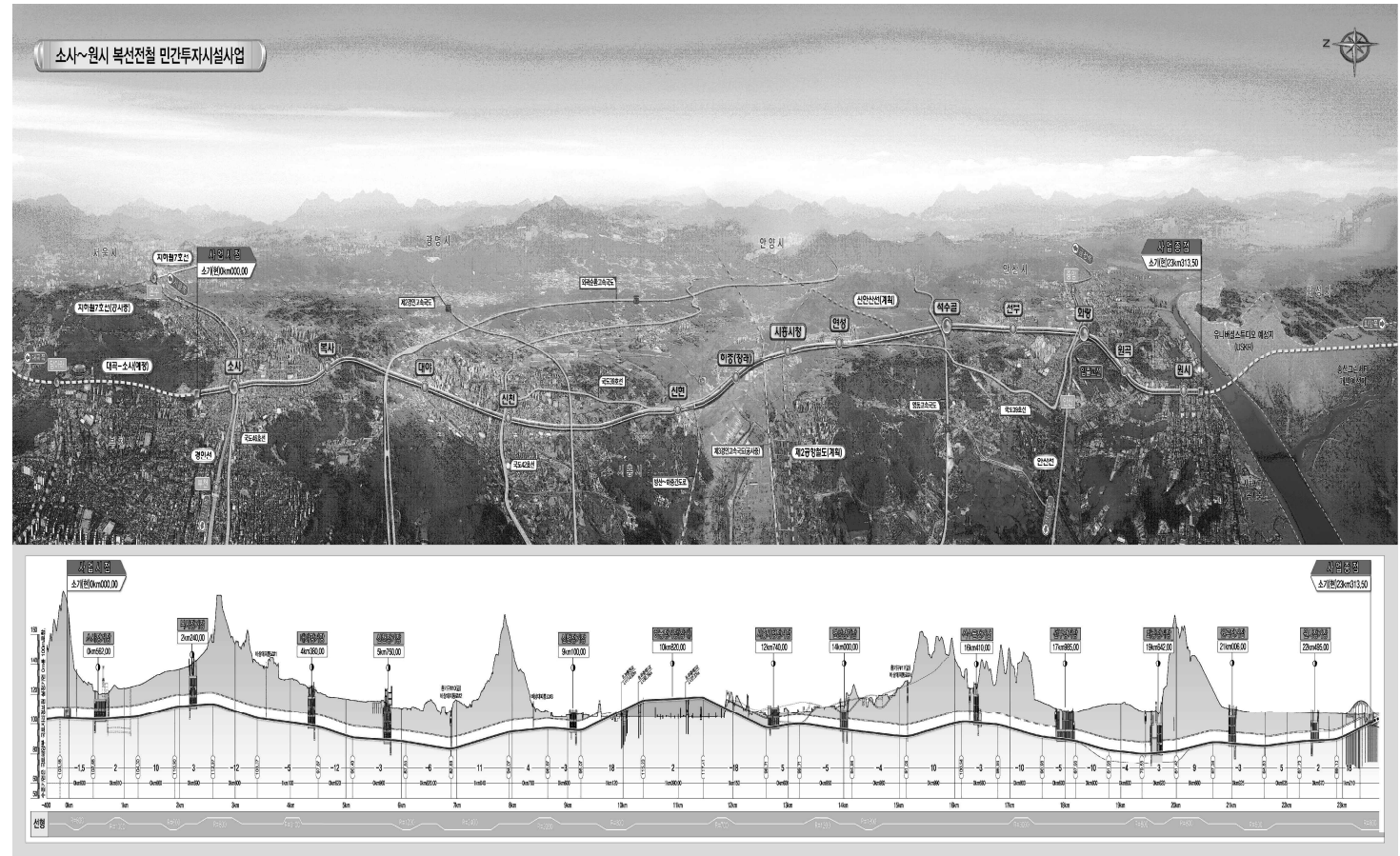
Implication

- Risk hedge strategy should be prepared before execution of PJ
- Explicit statement of issue, responsible body, scope of responsibility and remediation method, etc is very important

4. Issues and experiences in Korea

Sosa-Wonsi double-track

Location Map



4. Issues and experiences in Korea

Sosa-Wonsi double-track

Summary

Item		Contents
Location		Bucheon ,Kyonggi-do~ Ansan ,Kyonggi-do
Type		BTL(Build-Transfer-Lease)
Size		Length 23.39KM, Stations 11
Period		Construction : 2011. 01. ~ 2015. 12. Operation : 2016. 01. ~ 2045. 12.
Total Invest Cost	Equity	152 Billion(KRW) (10.0%)
	Loan	1,372 Billion(KRW) (90.0%)
	Subsidy	-
	Total	1,524 Billion(KRW) (100%)
IRR		5.703% (Real value after tax)

Sosa-Wonsi double-track

History

Period	Contents
2007. 12. 28.	Public notification of the request for proposal
2008. 08. 25.	Submission Project Proposal
2008. 09. 04.	Nomination of Preferred Bidder
2008. 11. 03.	Start of negotiation with Government for Concession Agreement
2009. 11. 10	Mid-Concession Agreement

4. Issues and experiences in Korea

Sosa-Wonsi double-track

Consortium

Item		Contents
Investment Ratio	CI	Daewoo 3.25%, Hyundai 3.0%, Hanhwa 0.8% Halla 0.5%, Byuksan 0.475%, Hanil 0.325% Sampyo 0.3%, KCC etc 1.35%
	OI	-
	FI	NPS 55%, Loving Nation BTL Fund 15% Shinhan Infra Portfolio Investment 15%, Mirae Asset 5%
Construction Ratio		Daewoo 32.5%, Hyundai 30.0%, Hanhwa 8.0% Halla 5.0%, Byuksan 4.75%, Hanil 3.25% Sampyo 3.0%, KCC etc 13.5%

4. Issues and experiences in Korea

Sosa-Wonsi double-track

Engagement

Negotiation

Loan

Issue

- **Interest rate gap**
between market rate (5.8%) when PJ was solicited and pre-feasibility rate (4.9%) on RFP
⇒ About 10% P drop of Project budget (100 million KRW).

Solution

- Interest rate was amended in revised RFP

- 4.9% ⇒ 5.8%

Implication

- Prompt reflection of market status by government is necessary to succeed PPP PJ.

4. Issues and experiences in Korea

Sosa-Wonsi double-track

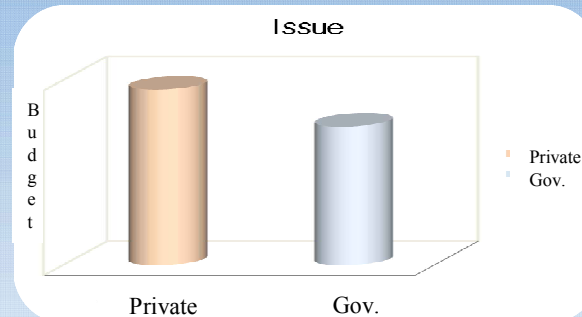
Engagement

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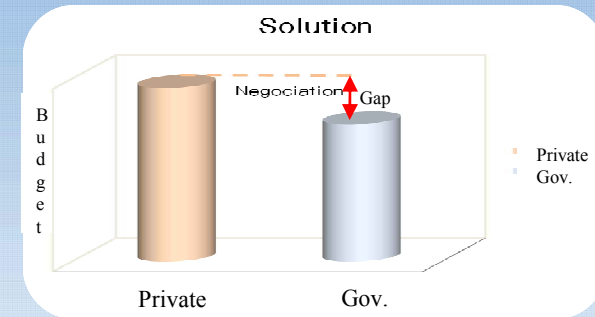
Issue

- **Limitation of project budget:** government asked CI to reduce total project budget, which general contractors could not accept.



Solution

- Resolved in between government and general contractor's proposal. CI provided proof and previous experience data to convince.



Implication

- The more details on the project budget in RFP, the less conflicts in execution of PPP PJ

4. Issues and experiences in Korea

Sosa-Wonsi double-track

Engagement

Negotiation

Loan

Issue

- **Difficulties in inviting FI and peaking up capital cost:**
the global financial crisis in 2008 froze project finance market.
* reference attached

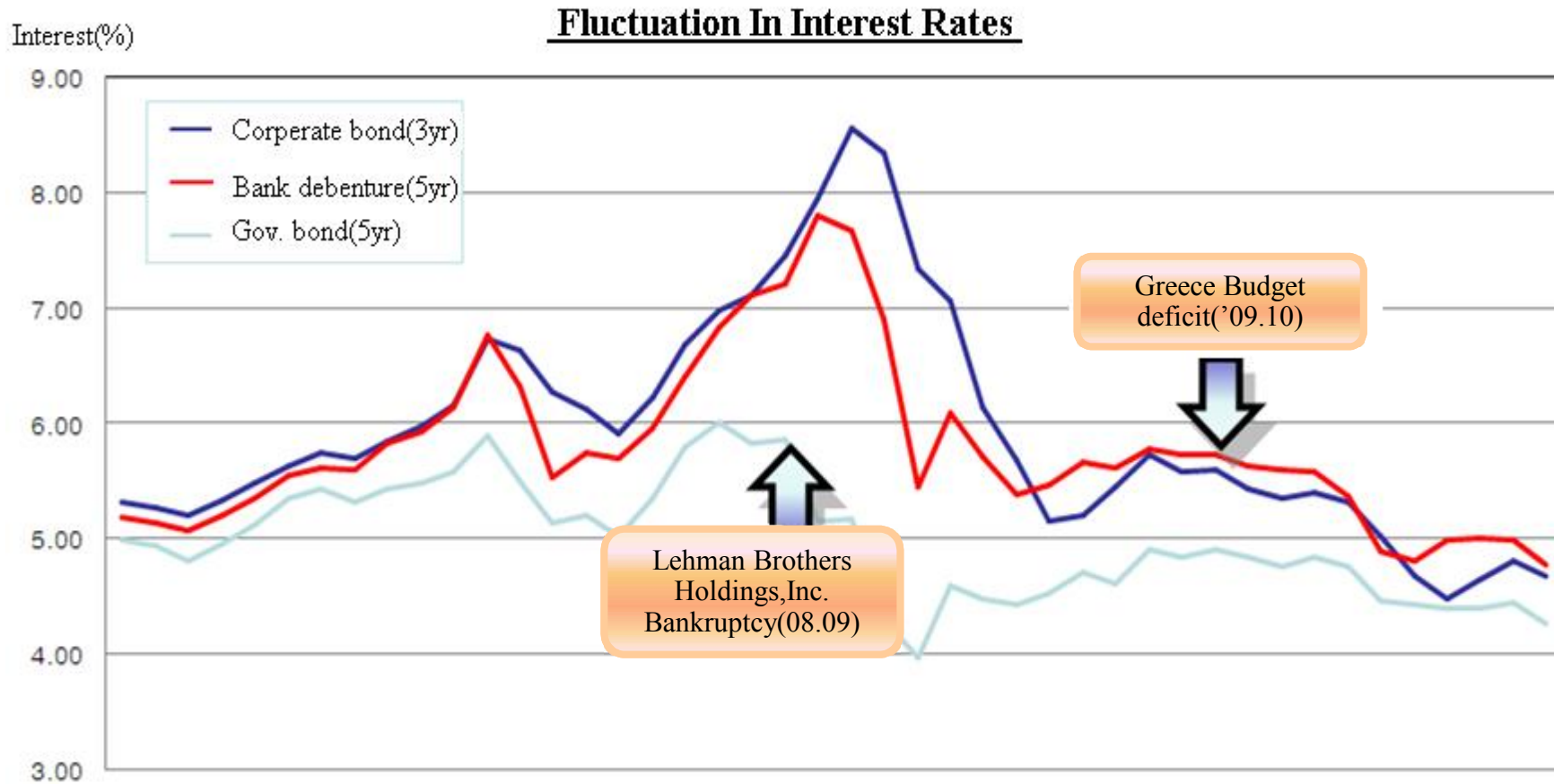
Solution

- Finance market prefer to government guarantee(BTL Contract)
- Close monitoring change of financial market was useful to get reasonable conditions of project finance

Implication

- Credit is very important to close project financing, so government guarantee is very strong tool to attract financial investors which resulted in reduction of capital cost.

Interest rate & Market Risk



Notes for successful PPP PJ

5. Notes for successful PPP PJ

Plan

- **Filtering feasible PPP PJ**
- **Consistency with government policy**
- **Reliable prediction of Traffic Volume**

Bidding

- **Reasonable project budget based on optimum design with cost effective construction method**
- **Competitiveness of consortium (CI + FI)**

Negotiation

- **Government: Subsidy & Risk share**
- **FI : Size of PJ Finance, Capital cost (ROI, ROE, interest rate)**
- **CI : Coverage of guarantee**

Operation

- **Expert system for Operation**
- **Competitiveness in Operation & Maintenance securing safety and low cost**

SUMMARY

- **PPP Project not only provide Benefits but also ask to take Risks to all parties.**
- **Every Project have its' own issues and require different solutions. There are many different issues from initial stage to operation stage as shown here in the presentation. Previous experience will be useful to deal with new issues.**
- **No obstacles to the success of PPP project will be if there are Government's support and collaboration with FI, which we have experienced.**
- **PPP is a very powerful tool to achieve the goals of all parties simultaneously.**

In summary, keys to success of PPP are how well trust are built up and participants do cooperate.

Thank You

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