

# CM : Present and the Future in Korea



The Construction Management  
Association of Korea

# Contents

- The reason for Introduction of CM
- Introduction of CM to Korea
- CM Market Status
- Problems
- The Future Strategies

# Introduction of CMAK

- **Establishment : March 27, 1997**
  - **Location : Seoul, Korea**
  - **President : Yung-Hwi Bae**
  - **Organization : Headquarter, 6 committees and 6 branches**
  - **Members : 390 members (Public agencies, firms and individuals)**
- ※ The CMAK's official task entrusted from government(MLTM) are ;
- **Annual appraisal of CM firms' capacity and its public announcement**
  - **Managing the results of CM contracts in public projects**
  - **Confirming and publishing the official documents of the CM firm's record of performance**

# 1. The reason for Introduction of CM

- A special measure was needed for the prevention of fraudulent construction works which caused several building collapses since the end of 1980s.
- The emergence of WTO in 1994 drew the consensus of Korean people on how to reform the construction industry in advance to protect the domestic construction market, and, as a result,

"CM" was institutionalized with the modification of construction related laws in 1996.

## 2. Introduction of CM to Korea

### Institutional Aspects – Government CM Law is established

**[ Law of The Frame Work Act on the Construction Industry ]**

- CM “To carry out the whole or a part of managerial works of planning, feasibility study, analysis, design, procurement, contracts, construction work management, supervision, evaluation, post-completion, etc of construction projects.”
- A project owner could consign the whole or a part of CM works to the person who has the capacity of specialized CM knowledge and technology.

## 2. Introduction of CM to Korea



### **The Status of CM in Korea**

**CM is in the middle of becoming one of the key words in the construction industry as a whole but**

- There have been not significant assistance or concrete measures by the various levels of governments,**
- A good number of private organizations have competitively executed the education, training and qualification tasks.**
- CM works have been ordered only by a few private companies.**

# 3. CM Market Status

## Construction Market

### - Scale of Domestic Construction Market

(Unit : million U\$)

| Year | Total Amount | Public Works | private Works | Civil Works | Building  |
|------|--------------|--------------|---------------|-------------|-----------|
| 2004 | 80,831.03    | 28,858.55    | 51,972.48     | 27,541.54   | 53,289.49 |
| 2005 | 84,943.59    | 27,201.28    | 57,742.31     | 25,979.83   | 58,963.76 |
| 2006 | 91,725.13    | 25,230.09    | 66,495.04     | 24,258.55   | 67,466.58 |
| 2007 | 109,326.32   | 31,699.74    | 77,626.58     | 30,933.93   | 78,392.39 |
| 2008 | 102,636.84   | 35,768.21    | 66,868.63     | 35,263.16   | 67,373.68 |

# 3. CM Market Status

## - Scale of CM Market

(Unit : million US\$)

| Year  | Total Amount | Public Works | private Works | Civil Works | Building | Others |
|-------|--------------|--------------|---------------|-------------|----------|--------|
| 2004년 | 56.34        | 32.71        | 23.62         | 3.88        | 45.50    | 6.96   |
| 2005년 | 152.69       | 45.52        | 107.17        | 31.72       | 116.10   | 4.86   |
| 2006년 | 113.88       | 42.41        | 71.46         | 17.29       | 89.04    | 7.54   |
| 2007년 | 388.36       | 283.25       | 105.11        | 19.28       | 358.20   | 10.88  |
| 2008년 | 260.11       | 132.11       | 128.00        | 38.84       | 214.83   | 6.44   |

# 3. CM Market Status



## Pattern of CM Orders

- Type of projects
  - CM works for building projects are normally exceeding those for civil works. Plant sector's CM works are extremely limited.
- Participation in CM works
  - Private projects : In case of a large scale projects, CM participates from the design stage and, in some cases, from the planning stage to all the stages including post-completion phase
  - Public projects : Mostly participates in the stage of construction
- CM performance scheme
  - CM for Fee : Mostly accepted in both public and private project.
  - CM at Risk : Just accepted in some private projects.  
(refer to Design-Build).
- CM orders are frequent in the large scale composite projects though it depends on situation.

### 3. CM Market Status

#### CM-related laws & system

##### <Framework Act on the Construction Industry>

- It stipulates clearly the legality of CM orders.
- Appraisal of CM capacity and public announcement for owners to judge the ability of CMr, CM performance records, manpower, capital, credibility, etc are evaluated. The results of evaluation are publicly-announced electronically on the date of 31 August annually.
  - ※ CMAK performs this task entrusted by government.
- CMr bears liability of damage to owner or the third person, incurred by intention of fault.

# 3. CM Market Status

## <Construction Technology Management



**Act>**  
Applicable only to public works project

- Selection criteria of CMr
  - Successful bidder(CM) is decided thru evaluation of technical suggestions and bidding price, other PQ.
- CM recommended for following type of projects
  - Large-scale composite works such as airport, railway, plant, dam, etc.
  - Projects with high degree of difficulty design & execution management
  - when the work management is difficult due to the shortage of owner's technical manpower.
  - Project that the owner thinks essentially needs the CM service.
- Fee for CM service
  - The fee for CM in the public works is publicly-announced by the Minister of Land, Transport and Maritime Affairs.

# 3. CM Market Status

## <Construction Technology Management Act>

### - Contents of CM services

- Management works of planning, design, contract, cost, time , quality & safety, environment, etc for a project.
- Other matters decided by negotiation with owner.

### - Damage compensation by CMr

- CMr bears liability of damage to owners and the third person, incurred by intention or fault
- In order to secure the damage compensation, CMr must be insured by guarantee bond/surety or insurance company.  
Insurance premium, in this case, will be paid by owner.

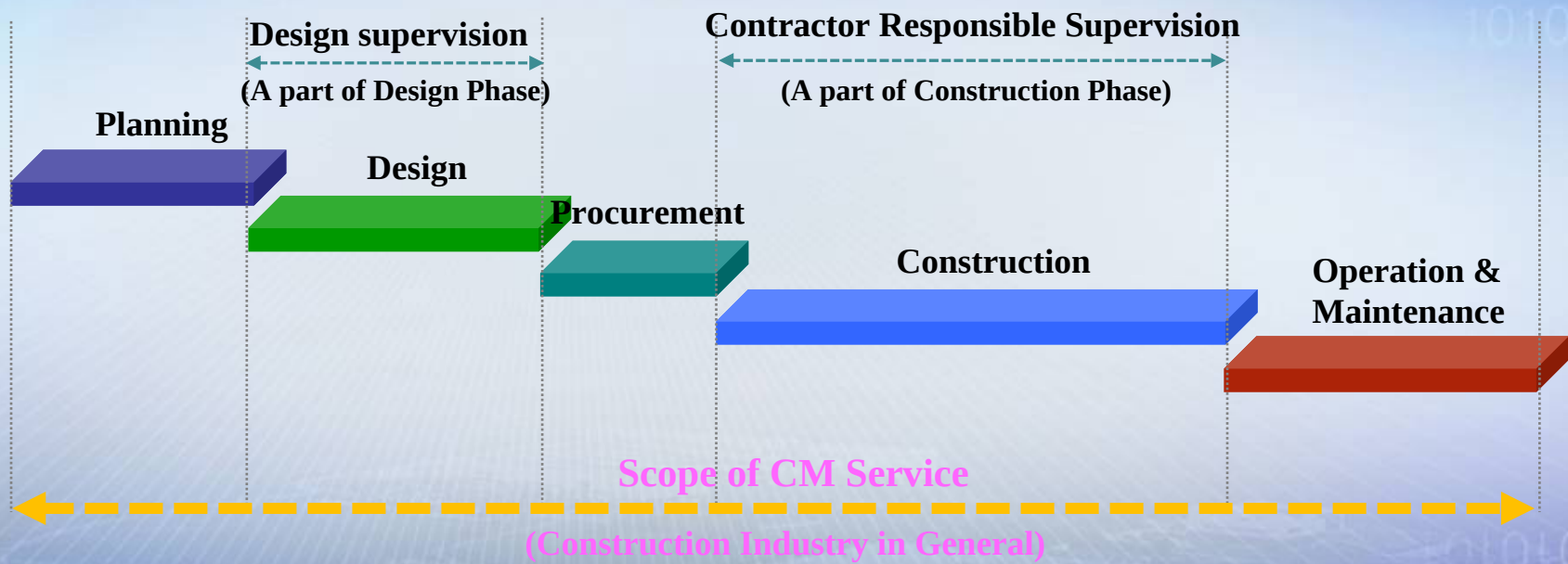
- Supervision should be included in the scope of CM, when CM is ordered for works requiring design supervision or contractor responsible supervision.

# 3. CM Market Status

## When CM services used during project

| Project Phases<br>Function | Planning | Design phase | Procurement phase | Construction phase | Post-completion<br>phase |
|----------------------------|----------|--------------|-------------------|--------------------|--------------------------|
| Basic Concept & FS         | ←→       |              |                   |                    |                          |
| Contract Management        | ←→       | ←→           | ←→                | ←→                 |                          |
| Cost Management            | ←→       | ←→           | ←→                | ←→                 | ←→                       |
| Design Management          |          | ←→           | ←→                | ←→                 |                          |
| Time Management            |          | ←→           | ←→                | ←→                 |                          |
| Quality Control            |          | ←→           | ←→                | ←→                 | ←→                       |
| Environmental Management   |          | ←→           | ←→                | ←→                 | ←→                       |
| Safety control             |          | ←→           | ←→                | ←→                 |                          |

# 3. CM Market Status



# 3. CM Market Status

## <The Comparison between CM and CS>

| Classification     | Construction Management(CM)                                                                                                                                                                                                                                                                                                                                                                                                                                        | Construction Supervision(CS)                                                                                                                                                                                                           |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function           | The overall management of construction project on behalf of owner.                                                                                                                                                                                                                                                                                                                                                                                                 | CS performs a part of CM services in the phases of design and construction, focusing mostly on quality control.                                                                                                                        |
| Performance scheme | <p>As a representative of project owner, CMr seeks business success (maximization of profit) and realizes it.</p> <p>※ According to the planned system based on accurate forecast of future and judgement of current situation, CMr not only supervises the project but also manages project expense, work progress, quality, environment, safety, etc and monitors problems.</p> <p>CMr performs such systematic and active works as consulting, advice, etc.</p> | <p>Inspection and measurement during design and construction</p> <p>※ In other words, design supervision and contractor responsible supervision are considered as outcome-oriented control works to secure the quality of project.</p> |
|                    | <p><b>[Dual functions of Preventing and Correcting]</b></p> <p><b>‘CM is focused on both preventing problems and correcting problems that do occur’</b></p>                                                                                                                                                                                                                                                                                                        | <p><b>[Function of Correcting]</b></p> <p><b>‘CS is only focused on identifying and correcting problems’</b></p>                                                                                                                       |

### 3. CM Market Status

#### Manpower management

- Private organizations perform education and training programs by being designated by the government.
- The education programs for manpower development have been actively implemented by private level.
- There are 5 different types of private CM qualification certificates. The qualified CM certificate holders are approximately 5,000 now.
- In Korea, only government granted qualification holders can be accepted.

# 3. CM Market Status

## CM Certification Status in Korea

| Title                                         | Organization                                               | Requirements for Application                                                                                                                                                                                                        | Training Hours | Numbers of Holders | Remark                                     |
|-----------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|--------------------------------------------|
| Construction Manager                          | <CMAK><br>The Construction Management Association of Korea | <ul style="list-style-type: none"> <li>▪ Over PhD 3yrs, MA 9yrs, BA 12yrs and correspondent experiences</li> <li>▪ Architect Engineer or Engineer with over three year Experiences</li> <li>▪ 13-18 Relevant Experiences</li> </ul> | -              | 514                | Written Test for 10 subjects and Interview |
| CMP<br>(Construction Management Professional) | Korean Professional Engineer Association                   | Professional Engineer or 10 year relevant construction experiences (Principal Engineer)                                                                                                                                             | 180 Hours      | 4,842              |                                            |
| PCM<br>(Professional Construction Management) | Korea Institute of construction Technology Education       | Middle Engineer or Supervision engineer with below qualifications<br>✓ CM Majoring (PhD, MA),<br>✓ CM Relevant education 150 hours,<br>✓ CM experience 4 years                                                                      | 154 Hours      | 1,071              |                                            |

**Note :** Above table shows the current status of CM certifications in Korea, as of October 8, 2009. In fact, any one is not authorized by government national wide and acquiring the certifications is being considered as one of development methods for work competency among the relevant people.

# 3. CM Market Status

## CMAK's Certification

### ☆ Classification of CM qualification & Eligibility for application

| Classification   | Eligibility for application                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CMr<br>(General) | <ul style="list-style-type: none"> <li>▪ Technical field               <ul style="list-style-type: none"> <li>- More than 3years experiences with Ph. D holders</li> <li>- More than 9years experiences with masters degree holders</li> <li>- More than 12years experiences with bachelors degree holders</li> <li>- More than 15years experiences with diploma of community college holders</li> <li>- More than 18years experiences with diploma of high school graduate holders.</li> <li>- Architects with more than 3years experiences</li> <li>- Engineers in the related fields holding engineer certificates with more than 10years experiences</li> </ul> </li> </ul> |
| CMr<br>(Special) | <ul style="list-style-type: none"> <li>- Such government granted or confirmed qualification holders as CPA, lawyer, etc who have more than 3years experiences</li> <li>- Anyone who has more than 10years experiences in the construction related administration (including real estate development) and financing fields.</li> </ul>                                                                                                                                                                                                                                                                                                                                           |

#### ※ Examination subjects (Applicant must pass the exam to receive certification)

- CMr(General) : The Basics of Construction Engineering, Construction Contract and Claims Management, Decision-making & Risk Management, Construction-related Laws and Code of Ethics, Construction Information & Document Management, Theory of Economic Growth & Project Management, Project Progress Planning & Management, Quality Control & Environmental Management .
- CM(Special) : The Overview of Construction Management, Construction-related Laws and Code of Ethics.

# 3. CM Market Status

## CMAK's Certification

### ☆ Classification of CM qualification & Eligibility for application

| Classification   | Eligibility for application                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CMr<br>(General) | <ul style="list-style-type: none"> <li>▪ Technical field               <ul style="list-style-type: none"> <li>- More than 3years experiences with Ph. D holders</li> <li>- More than 9years experiences with masters degree holders</li> <li>- More than 12years experiences with bachelors degree holders</li> <li>- More than 15years experiences with diploma of community college holders</li> <li>- More than 18years experiences with diploma of high school graduate holders.</li> <li>- Architects with more than 3years experiences</li> <li>- Engineers in the related fields holding engineer certificates with more than 10years experiences</li> </ul> </li> </ul> |
| CMr<br>(Special) | <ul style="list-style-type: none"> <li>- Such government granted or confirmed qualification holders as CPA, lawyer, etc who have more than 3years experiences</li> <li>- Anyone who has more than 10years experiences in the construction related administration (including real estate development) and financing fields.</li> </ul>                                                                                                                                                                                                                                                                                                                                           |

#### ※ Examination subjects (Applicant must pass the exam to receive certification)

- CMr(General) : The Basics of Construction Engineering, Construction Contract and Claims Management, Decision-making & Risk Management, Construction-related Laws and Code of Ethics, Construction Information & Document Management, Theory of Economic Growth & Project Management, Project Progress Planning & Management, Quality Control & Environmental Management .
- CM(Special) : The Overview of Construction Management, Construction-related Laws and Code of Ethics.



## 4. Problems



### **The Structure of Construction Industry**

- Construction market has expanded both quantitatively and qualitatively, and also upgraded. However, the quality level at supply side, especially in area of management including design and engineering is still far from satisfactory to meet the needs of demanders.
- The standardized categorization of companies as design, build, supervision, etc and a limited order scheme as the separated order between design and construction.
- Such premodern quantity oriented construction business operations are prevailing rather than profit and productivity oriented ones. Construction industry today lacks the spirit of aggressive and creative approaches due to the current system of protectionism. As a result, conservative business operations are prevailing by refusing changes and innovation.

## 4. Problems



### **The Structure of Construction Industry**

- **Construction market has expanded both quantitatively and qualitatively, and also upgraded. However, the quality level at supply side, especially in area of management including design and engineering is still far from satisfactory to meet the needs of demanders.**
- **The standardized categorization of companies as design, build, supervision, etc and a limited order scheme as the separated order between design and construction.**
- **Such premodern quantity oriented construction business operations are prevailing rather than profit and productivity oriented ones. Construction industry today lacks the spirit of aggressive and creative approaches due to the current system of protectionism. As a result, conservative business operations are prevailing by refusing changes and innovation.**

# 4. Problems

## Factors Reducing Use of CM

### - Client side

- **Lack of understanding and confusion on CM.**
- **Refusal to use the new system or consider changes.**
- **Loss of confidence in CMr makes them (consumers) avoid CM.**
- **Lack of verified data or information on the effect of CM.**
- **Loss of confidence in CM supplier.**

## 4. Problems

- Supplier(CMr) side
  - Lack of understanding and confusion on CM
  - Refusal to use new system or consider changes and with conservative business operations the consumers do not have confidences in CMr
  - The market uncertainty makes CMr invest poorly.
  - Because of deep-rooted conservative construction business operations, CM market is not found yet.

## 4. Problems

- Supplier(CMr) side
  - Lack of understanding and confusion on CM
  - Refusal to use new system or consider changes and with conservative business operations the consumers do not have confidences in CMr
  - The market uncertainty makes CMr invest poorly.
  - Because of deep-rooted conservative construction business operations, CM market is not found yet.

# 4. Problems

- Institutional side
  - - Confusion on CM theories
    - Due to the confusions as a result of mismatches between CM theories and institutions, they misunderstand as if there are different tools just applicable to CM works.
  - - There exists no institutional tool to build infrastructure for manpower. CM qualified man powers are produced only by private organizations. The education and training programs have not been effective.
  - - The CM fee is extremely low as compared to CM works (3% level of total project amount).
  - - Public works projects are not flexibly ordered with various changes of situations as types of projects, scale, organizations, manpower, etc.
  - - Due to the confusions with supervision, CM is being excluded.

# 4. Problems

- Institutional side
  - - Confusion on CM theories
    - Due to the confusions as a result of mismatches between CM theories and institutions, they misunderstand as if there are different tools just applicable to CM works.
  - - There exists no institutional tool to build infrastructure for manpower. CM qualified man powers are produced only by private organizations. The education and training programs have not been effective.
  - - The CM fee is extremely low as compared to CM works (3% level of total project amount).
  - - Public works projects are not flexibly ordered with various changes of situations as types of projects, scale, organizations, manpower, etc.
  - - Due to the confusions with supervision, CM is being excluded.

# 5. The Future Strategies

To set up the strategies for CM, the structural aspect of construction industry and also the activation of CM market are being taken into consideration.



## The Enhancement of CM service quality

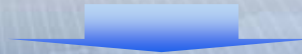
- The constructive and continuous implementation of education programs.
- To develop and build the infrastructures of CM (manpower, system, etc).
- PR for understanding CM.



## System improvement

- Redefining the CM theories (Koreanized CM)

To carry out the whole or a part of managerial works of planning, feasibility study, analysis, design, procurement, contracts, construction work management, supervision, evaluation, post-completion, etc of construction projects.



To carry out planning, feasibility study, analysis, consultation, guidance, procurement, supplies, contracts, supervision, evaluation, post-completion management, etc of construction projects, and the whole or a part of managerial works of design and construction.

# 5. The Future Strategies

To set up the strategies for CM, the structural aspect of construction industry and also the activation of CM market are being taken into consideration.



## The Enhancement of CM service quality

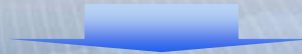
- The constructive and continuous implementation of education programs.
- To develop and build the infrastructures of CM (manpower, system, etc).
- PR for understanding CM.



## System improvement

- Redefining the CM theories (Koreanized CM)

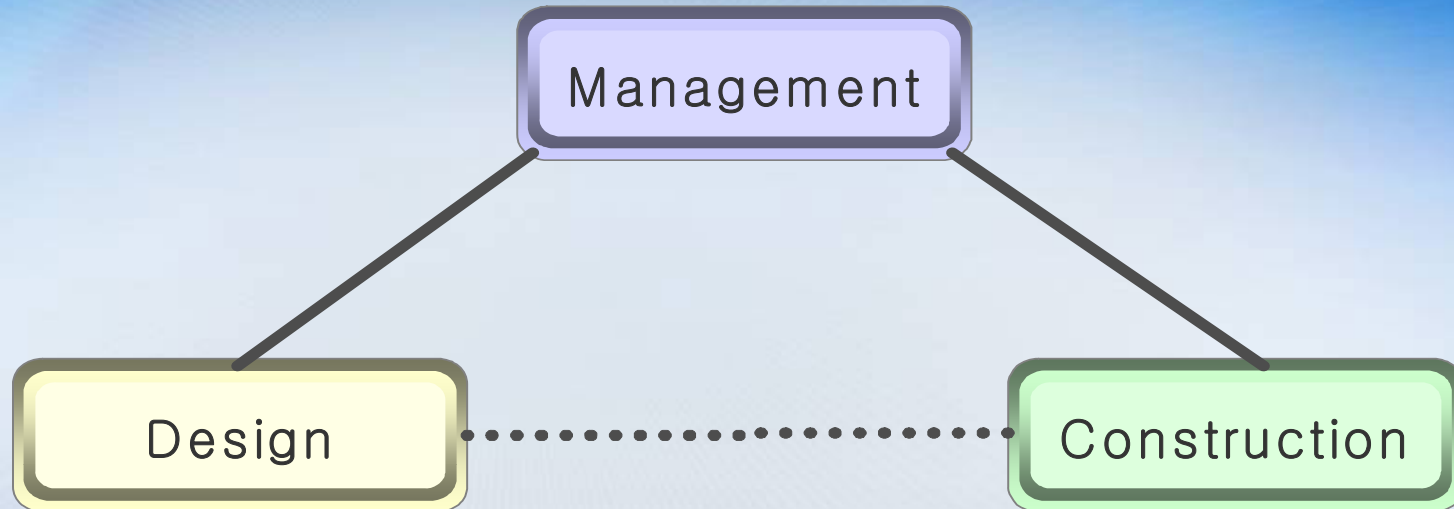
To carry out the whole or a part of managerial works of planning, feasibility study, analysis, design, procurement, contracts, construction work management, supervision, evaluation, post-completion, etc of construction projects.



To carry out planning, feasibility study, analysis, consultation, guidance, procurement, supplies, contracts, supervision, evaluation, post-completion management, etc of construction projects, and the whole or a part of managerial works of design and construction.

# 5. The Future Strategies

Construction industry can be classified by 3 large categories.



※ ① Management = Design Engineering + Construction Engineering+ Pure Management

② Normally, so far, "Management" has been performed as attached to the contract conditions of design or construction.

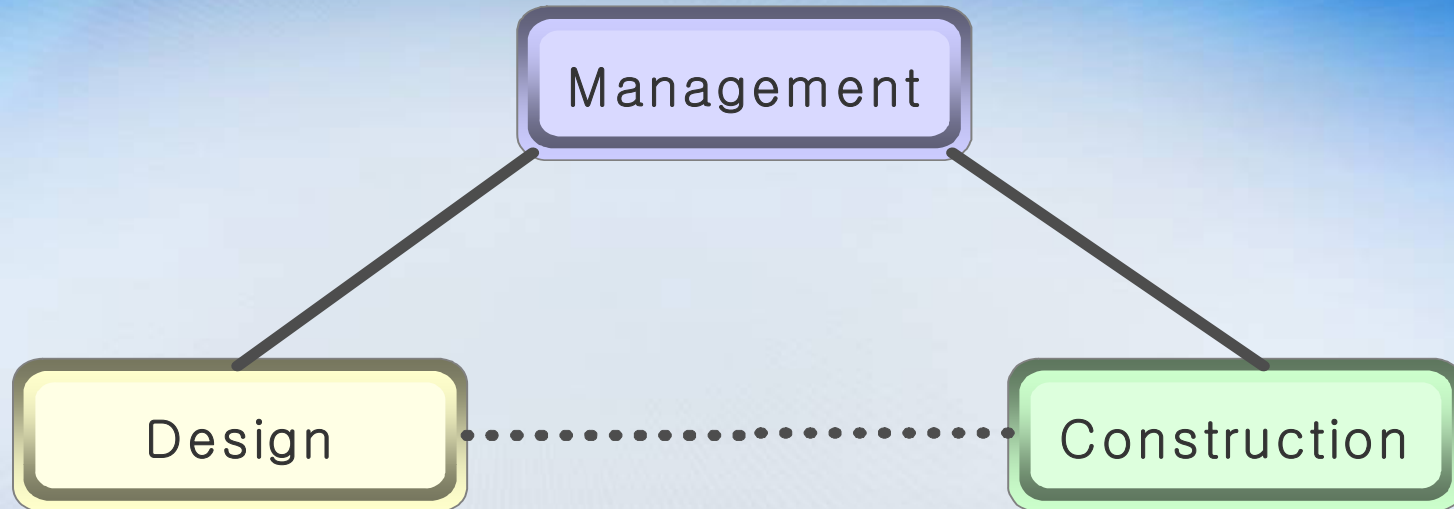
However, from now on "Management" should be developed as one of the independent categories of construction industry and CM specialists must make efforts to up grade the quality of CM service to solidify their positions.

There have been following misunderstandings.

- Confusion between CM and PM(Project Management or program Management).
- There are two types of projects, the one requires CM and the other not.
- The range of CM service is limited
- There is a tool which is only applicable to the implementation of CM service.

# 5. The Future Strategies

Construction industry can be classified by 3 large categories.



※ ① Management = Design Engineering + Construction Engineering+ Pure Management

② Normally, so far, "Management" has been performed as attached to the contract conditions of design or construction.

However, from now on "Management" should be developed as one of the independent categories of construction industry and CM specialists must make efforts to up grade the quality of CM service to solidify their positions.

There have been following misunderstandings.

- Confusion between CM and PM(Project Management or program Management).
- There are two types of projects, the one requires CM and the other not.
- The range of CM service is limited
- There is a tool which is only applicable to the implementation of CM service.

## 5. The Future Strategies

- **To diversify the current inflexible CM order scheme**  
Taking owners and project conditions into consideration,
  - CM order scheme should be readjusted flexibly
  - The scopes of works for CMr including participants in CM works should be set up.
- **The CM fee system should be modified to balance the effective CM service and reasonable price.**
- **To activate the international interactions and cooperation**
  - The joint operation of education & training programs to develop qualified manpower and technology.
  - The joint research for CM service development & improvement of CM fee system, etc.
  - The joint holding of seminars and academic conferences to mutually share and exchange the information, data and knowledge.

# 5. The Future Strategies

## Collaborations between CMAA and CMAK

- **The joint operation of education & training programs to develop qualified manpower and technology**
- **The joint research for CM service developments & improvement of CM fee system.**
- **The joint holding of seminars and academic conferences to mutually share and exchange the information, data and knowledge.**
- **The joint cooperation of market research for advance into construction market in third countries.**

# Thank you.

<http://www.cmak.or.kr>

cmakbae@hanmail.net



The Construction Management  
Association of Korea