

2009 8th CCRN Colloquium

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Using AHP for The Most Effective and
Efficient Negotiation and Conflict Resolution

Speaker : Hyun-soo, Kang
CEO of Decision Science

Tuesday, December 8, 2009, 2:00PM
Videoconference Room (#303)



KDI 국제정책대학원
KDI School of Public Policy and Management

Center for Conflict Resolution and Negotiation

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Dean's Message



With the aims of fostering leaders in the public and private sectors, elevating Korea's role in the international arena, and contributing to international economic development, the KDI School of Public Policy and Management opened its doors in March of 1998. Since then, the KDI School has strived to develop a distinctive education methodology that would enable it to compete with globally established institutions of higher education. Although it has made great strides, the KDI School seeks to continue to grow and flourish as the country's top education institution.

To ensure quality education, the KDI School places utmost importance on recruiting a faculty pool with ample experiences and policy research expertise as well as constantly seeking innovative ways of advancing its curricula.

Moreover, maintaining a student mix of individuals from diverse cultural and professional backgrounds will stimulate cross-cultural discourse and interaction, which will provide channels for students to expand their understanding of the world and gain a global perspective.

In order to reach these aims, the KDI School of Public Policy and Management is both establishing and actively participating in academic exchange programs and agreements with renowned universities around the world. Furthermore, continued efforts to professionalize the school's administrative staff will lead to a sound administration and service system that will further enhance the education environment.

Being at the forefront leading innovation in education requires a sharp vision and unrelenting effort. Not only that, an outstanding educational environment should not be limited within the campus, but should go on to extend out to its alumni. With this vision in mind, the KDI School of Public Policy and Management is prepared to take one further leap into the world, using your dream and our ambition as its cornerstones.

HAHM, Sang Moon

Dean, KDI School of Public Policy and Management



The KDI School Commitments

Excellence in Teaching

Top-notch faculty / Curriculum based on practical cases / Lectures that encourage practical application

Utmost in Peer Learning and Networking Opportunities

30% of students from abroad(35 countries) / Diverse student make up from private and public sectors / Active networking opportunities

Global Hub for Knowledge Sharing

Sharing Korea's development and crisis management experiences / Various international exchange programs for democratic governance



Welcome to Center for Conflict Resolution and Negotiation(CCRN)!

We live in the world where negotiation, problem-solving, consensus-building, and conflict resolution skills are considered to be a valuable competency.

The Center for Conflict Resolution and Negotiation (CCRN) at the KDI School of Public Policy and Management was established in 2003 to promote such competency in various sectors in Korea through organizing short-term courses, seminars, research and conferences, and publishing its works.

The CCRN aims to develop the theory and practice of conflict resolution and negotiation, to assist the governmental institutions, businesses and non-governmental sectors in transforming into more effective negotiators, problem-solvers, and dispute managers.

The Center endeavors to expand its vision beyond Korea by strengthening its world-wide networks with other well-known organizations in the field of conflict resolution and negotiation, and supporting the development programs of the KDI School.

Acting Director Kim, Dong-Young
The Center for Conflict Resolution and Negotiation

Acknowledgment

The picture above drawn by prof. Kyong-Dong Kim. Prof. Kim joined the KDI School in 2001, teaching classes such as "Development and Social Change in Korea" and "The Future and Development Policy". He has published widely in the fields of industrial society and development research.

The Center for Conflict Resolution and Negotiation (CCRN) was established in 2003 in order to enhance the competency of governments and public institutions in negotiation and conflict management.

The center not only offers a diverse range of negotiation and mediation programs for conflict management, but also conducts consultation services and researches on negotiation and conflict in the field of environment, labor, trade, public policy, foreign policy and business.

In 2007, the center was designated as a “National Education and Research Center for Conflict Management” by the Prime Minister’s Office in Korea based on Presidential Decree 20724. Since then, CCRN has coordinated a “Conflict Management Training Program” for local governments and carried out researches on conflict management for public policy in Korea.

Recently, the center has begun to provide developing countries with consultation services and training programs on conflict management and negotiation through networks with prominent conflict resolution research institutes and schools around the world.



CCRN Main Programs (2009)

Conflict Management Certificate Program (Spring & Fall Semester)

A 15-week certificate program designed to train conflict management experts in the fields of negotiation and mediation

- ▶ Spring Semester: February 10~May 17 (Every Tuesday)
- ▶ Fall Semester: September 15~December 20 (Every Tuesday)

Public Conflict Mediation and Negotiation Program

A three-day training program focused on specific public conflict issues for government agencies.

- ▶ Conflicts on NIMBY facilities and land use: April 15(Wed)~17(Fri)
- ▶ Environment and development conflict: June 17(Wed)~19(Fri)
- ▶ Conflicts on regulations: September 2(Wed)~4(Fri)
- ▶ Policy conflict among multi-parties around multi-issues: November 11(Wed)~13(Fri)

Negotiation and Conflict Resolution Program for Senior Executive

Special programs designed to enhance the conflict management capacities of senior executives

- ▶ Spring Semester: May 28(Thu)~29(Fri)
- ▶ Fall Semester: October 15(Thu)~16(Fri)

Collaborative Conflict Resolution Workshop Program

Workshop programs for conflict management experts of government agencies, businesses, citizens and media organizations

- ▶ December 10(Thu)~11(Fri)

Customized Training Program

Tailor-made training programs on demand on the specific conflict management issues of government agencies, public and private organizations in Korea and developing countries

ABOUT THE SPEAKER



Speaker: Hyun-soo, Kang

– CEO of Decision Science

- Yonsei University (B.S)
- George Washington University (MBA)
- CEO of Decision Science

CCRN COLLOQUIUM

The Center for Conflict Resolution and Negotiation (CCRN) at the KDI School of Public Policy and Management is organizing and sponsoring the CCRN Colloquium, the interdisciplinary public lecture series, where renowned scholars and practitioners give lectures relating to broad topics of conflict resolution and negotiation.

For additional information, please feel free to contact CCRN staffs (Tel: 02-3299-1044 or 1088). Upcoming colloquium series will be updated at CCRN homepage (<http://ccrn.kdischool.ac.kr>).

This transcript is from a public lecture held on December 8, 2009 at Videoconference Room of KDI School of Public Policy and Management.

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AHP & Conflict Resolution

Using AHP for
The Most Effective and Efficient Negotiation
and Conflict Resolution

-AHP를 활용한 최적의 갈등관리 및 해소-

2009. 12

강 현 수
㈜ 디시전사이언스

Contents

1. Limitations of the Korean government's current system for negotiation and conflict resolution
2. Critical success factors for the most effective and efficient negotiation and conflict resolution
3. AHP as the best tool to satisfy the critical success factors for the best negotiation and conflict resolution
 - What is AHP(analytic hierarchy process)?
 - How can AHP satisfy the critical success factors?
 - What effects can be expected from utilizing AHP?
 - Comparison of the traditional method and AHP method
 - Examples
4. Exercise
 - Applying AHP to a real life situation through stakeholders' participation

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Limitations of the current system

- The Korean Government has established a system for policy coordination and conflict resolution, which stipulates as follows:
 - Principles
 - Resolve conflicts autonomously through dialogs and compromises between stakeholders
 - Assure stakeholders' real participation in policy making and open information to the public including stakeholders
 - Weigh conflicting interests: public to public & public to private
 - Take into account the factors for sustainable improvement
 - Procedures(in brief)
 - Conflict assessment -> Reach consensus through participatory decision-making -> Resolve conflicts through "Conflict Coordination Conference"

Source: "A white book on policy coordination and conflict management(2007. 12)" issued by The Office for Government Policy Coordination(국무조정실, 갈등관리규정)

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Limitations of the current system

- However, the system has some critical limitations.
 - Lacks practical methods to clarify what each of the stakeholders really want/need and set the priorities between the wants/needs
 - Lacks sound methods to quantify all the factors involved
 - Lacks practical tools to combine rationally the stakeholders' interests and so assure the achievement of real consensus
 - Lacks reasonable methods to assess the risks involved
 - Lacks scientific methods to verify the logical validity of the stakeholders' arguments
 - In result, fail to ensure the strong commitment and real conflict resolution

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Critical Success Factors

- Clarify effectively and efficiently what each of the stakeholders really want/needs and set the priorities between the wants/needs
- Quantify mathematically all the vital factors involved
- Combine rationally the stakeholders' interests and so assure the achievement of real consensus
- Verify scientifically the logical validity of the stakeholders' arguments
- Assess structurally the risks involved
- And so, ensure the strong commitment and real conflict resolution

=> AHP satisfies all of the above!

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AHP (Analytic Hierarchy Process)

- Helps organize complicated situation rightly and neatly in a hierarchical tree form
- Helps express and assess all the participants' real wants/needs properly and set the priorities of them by utilizing easy pairwise-comparison(1:1 comparison) of the elements in the hierarchy
- Helps quantify all the elements involved(even the qualitative elements) by assessing them based on a unified scale, utility
- Combine the stakeholders' interests without any sacrifice and so assure the achievement of real consensus
- Verify scientifically the logical consistency of the stakeholders' arguments by calculating inconsistency ratio
- Assess structurally the risks involved by utilizing what-if analysis feature
- And so, AHP ensure the knowledge and interest integration as well as the strong and robust commitment and real conflict resolution, which the typical dialog and compromise can never achieve.

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Comparison of the traditional and AHP method

[Traditional meeting only for dialogs and compromises]

- A lot of Unstructured talks & arguments, disguised conflicts and politics prevail.
- A lot of time is consumed and final conclusion is reached abruptly: 'Jump to the conclusion'.
- Conclusion is subject to concessions and sacrifices of related parties.
- Transparency and accountability is low.
- Participation is **inactive/negative/defiant** and satisfaction is low.
- No body is certain of the validity of the conclusion



Source: The Office for Government Policy Coordination

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[AHP meeting for effective and efficient real conflict resolution]

- By utilizing proven methodologies and tools, AHP brings the results that are simply the opposite of the traditional meeting.
- No concession and sacrifice is needed. All the parties gets what they want at maximum.
- Participation is **active/positive/cooperative** and satisfaction is very high and so the most effective and efficient conclusion is generated without fail.



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Examples

- **국내**
 - 이명박 정부의 국가경쟁력 확보에 관한 연구 (목진휴 외/2008)
 - 2009학년도 중등교사 임용시험 정책에 대한 평가 연구 (백순근, 유예림 /2008)
 - AHP 방법에 의한 항만경쟁력 주역할자의 확인에 관한 연구 (김길수, 강병국 /2008)
 - 치수사업 및 유역종합치수계획을 위한 의사결정기법의 소개 (변성호, 김태웅/2007)
 - 국내 지하댐 건설은 어디가 적지인가? 그 선정방법론을 살펴본다 (이상일 /2004)
 - 계층분석과정을 이용한 지하댐 적지분석 (이상일, 김병찬/2003)
 - GIS를 활용한 주거용 적지분석에서의 절차적, 방법론적 합리성 II: 용인시를 사례로 (조규영 외/2002)
 - AHP를 이용한 정보통신표준화 전략계획 (변대호/1999)
 - 경제와 환경 사이의 갈등 해소: 안산 지역난방사업 연료 선정 사례 (안병훈 외/1999)
 - 기타

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Examples

- **해외**
 - Application of the Analytic Hierarchy Process to Complex System Design Evaluation (Balci & Nance/2006)
 - Sustainable Land-use Decision Making from the Geological Point of View: An Example for the Use of Geo-Resources in a Metropolitan Area (Marinoni et al/2005)
 - Negotiation and Resolution of Conflict Using AHP: an Application to Project Management (Al-Tabtabai & Thomas/2004)
 - Conflict Resolution Using Analytical Hierarchy Process(AHP) (Gilman/2004)
 - The Analytic Hierarchy Process as a Means for Integrated Watershed Management (Steiguer et al/2003)
 - Fundamentals of Alternative Dispute Resolution Processes in Construction (Cheung et al/2002)
 - Using the Analytic Hierarchy Process to Support Teams in Defining New Product Objectives (Hummel et al/2001)
 - Past Development and Future Directions for the AHP in Natural Resources (Schmoldt et al./2001)
 - Efficient Group Decision Making in Workshop Settings (Schmoldt/2001)
 - Measuring Potential Ethnic Conflict in Southeast Asia (Fuller/2000)
 - In Search of a Place: Analysis of a Land Conflict Involving the Cotabato Manobo People (Fraiser/1999) ...

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Exercise

- Let's consider resolving the conflict on the amendment of the master plan for Sejong City by utilizing AHP
 - Step 1: make sure all the major stakeholders participate in the conflict resolution and decision making
 - Step 2: identify and clarify all the issues/interests of the stakeholders and alternative solutions
 - Step 3: build a model for conflict resolution through AHP analysis
 - Step 4: collect judgments from the stakeholders on how each of the elements in the model is important to their interests through pairwise comparisons
 - Step 5: synthesize all the judgments and draw conclusion
 - Step 6: check the logical consistency of the judgments of stakeholders, and feedback and revise inconsistent judgments
 - Step 7: do what-if analysis, resolve conflicts, and ensure satisfaction and commitment.

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Exercise

- Step 1: make sure all the major stakeholders participate in the conflict resolution and decision making
 - For example, the following major stakeholders can be identified and participate.
 - All participants will express their wants/needs 100% without limitations, pressure, and discriminations with equal weight between participants.

PersonName	Participating	Email	Keypad	Wave	Weight	Organization	Location	Combined
Facilitator	<input checked="" type="checkbox"/>							<input type="checkbox"/>
Combined	<input type="checkbox"/>							<input checked="" type="checkbox"/>
중앙정부	<input checked="" type="checkbox"/>			2	1			<input type="checkbox"/>
수도권 지방정부	<input checked="" type="checkbox"/>			3	1			<input type="checkbox"/>
해당지역 지방정부	<input checked="" type="checkbox"/>			4	1			<input type="checkbox"/>
해당지역 주민	<input checked="" type="checkbox"/>			5	1			<input type="checkbox"/>
환성하는 시민단체	<input checked="" type="checkbox"/>			6	1			<input type="checkbox"/>
반대하는 시민단체	<input checked="" type="checkbox"/>			7	1			<input type="checkbox"/>

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Exercise

- Step 2: identify and clarify all the issues/interests of the stakeholders and alternative solutions
 - The following issues and alternative solutions may be identified and clarified, for example.

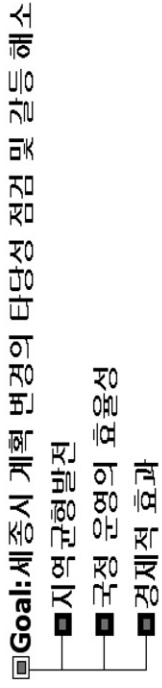
전략목표	내용
1. 지역균형발전	수도권집중에 따른 문제점 완화: 주택, 교통, 환경
	수도권과 지방 간 격차 완화
2. 국정운영의 효율성	행정부처의 분산에 따른 국정운영의 비효율성
3. 경제적 효과	정부기관 및 기업의 분산에 따른 거래비용 증가
	해당 지역 소득 증대 및 자족기능 등 경제적 효과
대안	
1. 기존의 행정복합도시 유지	
2. 경제 및 교육 기능 강화	

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Exercise

- Step 3: build a model for conflict resolution through AHP analysis
 - Model can be built as follows.



Alternatives

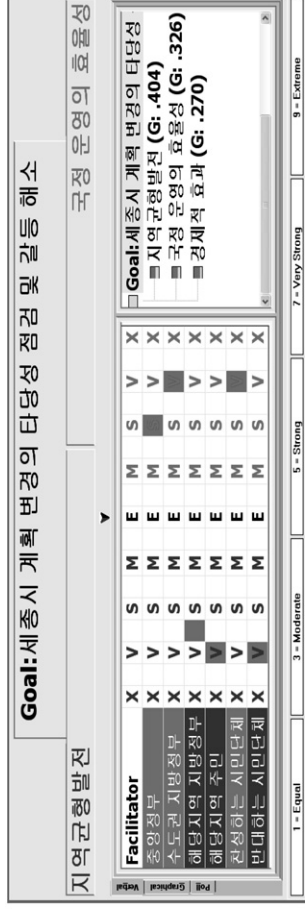
기존의 행정복합도시 유지
경제 및 교육 기능 강화

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Exercise

- Step 4: collect judgments from the stakeholders on how each of the elements in the model is important to their interests through pairwise comparisons
 - For example, 중앙정부 strongly prefers 국정운영의 효율성 to 지역균형발전, while 해당지역 주민 very strongly prefers 지역균형발전 to 국정운영의 효율성
 - Judge all the remaining elements likewise.



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Exercise

- Step 5: synthesize all the judgments and draw conclusion
 - Synthesizing all of the stakeholders' judgments shows that the most important objective is 지역균형발전, being followed by 국정운영의 효율성 and 경제적 효과



- Finally, 경제 및 교육가능 강화 appears to be the better alternative policy than 기존의 행정복합도시 유지.



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Exercise

- Step 6: check the logical consistency of stakeholders' judgments.
 - As can be seen below, all of the stakeholders appeared to be logically inconsistent. It is evidenced by the fact that the Inconsistency Ratios are all over the threshold 0.1.
 - It is needed to feedback the results to each of the stakeholders and have stakeholders revise their judgments.

Inconsistency Ratio

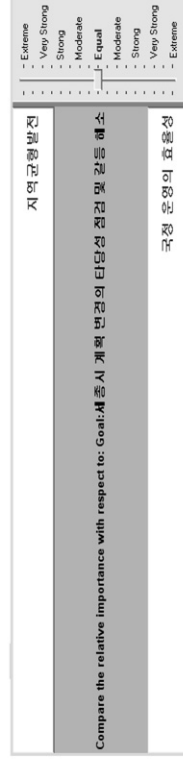
중앙정부	.1741	.1741
수도권 지방정부	.1292	.1292
해당지역 지방정부	.1292	.1292
해당지역 주민	.4151	.4151
찬성하는 시민단체	.2809	.2809
반대하는 시민단체	.3307	.3307

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Exercise

- Step 6-1: check the logical consistencies of judgments and revise inconsistent judgments.
 - By checking logical consistencies, for example, it appears that 중앙정부 should consider 지역균형발전 equally important as 국정운영의 효율성.



- After all the necessary revisions, the result appears that 경제 및 교육 기능 강화는 강화 still is more better alternative policy than 기존의 행정복합도시 유지.

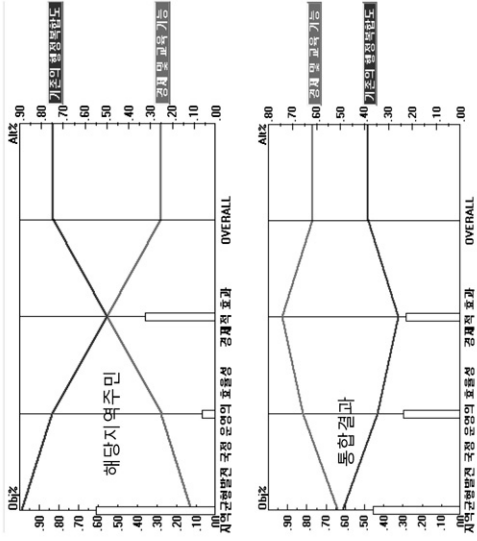
경제 및 교육 기능 강화 0.615
기존의 행정복합도시 유지 0.385

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Exercise

- Step 7: do what-if analysis, resolve conflicts, and ensure satisfaction and commitment.



Although 해당지역주민(지방정부/반대하는 시민단체) think 기존의 행정복합도 및 교육기능 강화, 경제 및 교육기능 강화,

The result that combines all of the stakeholders' interests shows that 경제 및 교육 기능 강화 is a better policy than 기존의 행정복합도시 유지 in all of the objectives such as 지역균형발전, 국정운영의 효율성, 경쟁력 효과.

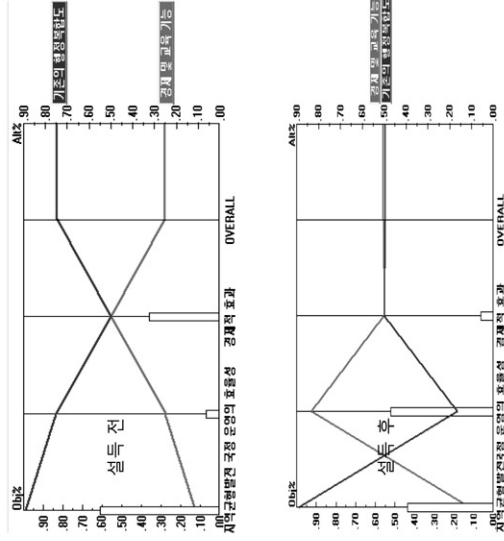
Therefore, in this case, we can tell with high confidence that 경제 및 교육 기능 강화 is a better policy than 기존의 행정복합도시 유지 regardless of the result of the what-if analysis.

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Exercise

- Step 7-1: on the other hand, it can be found what should be done to persuade 해당지역주민 most effectively.



Before persuasion, 해당지역주민 thought the importance of 국정운영의 효율성 is much lower than that of 지역균형발전 as denoted in the height of the bar 국정운영의 효율성 on the top graph.

Therefore, first of all, efforts should be focused on helping 해당지역주민 to understand that 국정운영의 효율성은 as much important as 지역균형발전.

So, as seen on the bottom graph, if 해당지역주민 think 국정운영의 효율성은 a little bit more important than 지역균형발전, then 해당지역주민 also can reasonably/satisfactorily prefer 경제 및 교육기능 강화 to 기존의 행정복합도시 유지.

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Remarks

- Conflict resolution should be based on a systematic, holistic optimization, not just an aggregation of the settlements of individual issues.
- Conflict resolution is and must be the integral part of knowledge (and social) integration for the better results/performance, not just compromised conclusion based on dialog and sacrifice.
 - That is, conflict resolution and knowledge integration are both sides of the coin.
- So it is highly recommended to make it a rule to utilize rational and scientific methods and tools like AHP in addition to the current procedures based on 정부업무조정 등에 관한 규정 및 공공기관의 갈등예방과 해결에 관한 규정.

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