

The Methods of Value Management to Support Decision-Making of Urban Regeneration Projects

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ABSTRACT: The paradigm of urban generation does not lie in physical development/maintenance such as urban redevelopment any more. The paradigm is shifting to balanced activation of administration / management functions including central commerce/business functions, broad culture/tourism functions, international functions and adequate level of residence functions. The urban regeneration project aims to restore functions of cities by physical/environmental, living/cultural and industrial/economical regeneration and is managed differently from existing projects in that it includes multiple sub-projects in it. The overall projects management should be by managing the value sought by the urban regeneration project and multiple other sub-projects. The objective of this study is to present various methods of value management in order to avoid conflicts between various objectives within the said project. It aims to provide the value management methods for decision making by understanding correlatedness between values of various projects and prioritizing them.

Keywords: urban regeneration project; systematic management of values; supporting decision making; AHP

1. INTRODUCTION

1.1 Background and Objective

The scale of urban regeneration projects is gradually increasing. Development projects are on a gradual rise not only in terms of urban regeneration led by government but also civil bodies and the 3rd sectors. The urban regeneration project aim to restore city functions through physical / environmental, living / cultural and industrial / economic regeneration. It is different from existing projects in the way it is managed as it includes many sub-projects in it.

As in Figure 1, the paradigm of urban generation does not lie in physical development/maintenance such as urban redevelopment any more. The paradigm is shifting to balanced activation of administration/management functions including central commerce/business functions, broad culture/tourism functions, international functions and adequate level of residence functions. The urban regeneration project aims to restore functions of cities by physical/environmental, living/cultural and industrial/economical regeneration. The scope of urban regeneration is also expanding as it seeks not only to regenerate cities but also restore city functions and further develop cities.

However, urban rearrangement or urban regeneration pursued by government has been so far confined to specific areas and basically concentrated on physical

improvement, therefore failing to achieve comprehensive results. In other words, while systematic rearranging and activation of cities could be realized, it falls short of comprehensive urban regeneration that incorporates economical/industrial/cultural/social aspects as the focus is still placed on physical and environmental improvements [1].



Figure 1. Evolution of the concept of the urban regeneration project

The comprehensive urban regeneration project includes many sub-projects that have different objectives that serve one big common objective. The urban regeneration project pursues multiple values that cannot be achieved by a single project alone, and therefore needs regional,

per-district and spatial correlatedness among its sub-projects. Unlike a single project, the management of the urban regeneration project requires a one level higher approach. That is, the overall projects management should be by managing the value sought by the urban regeneration project and multiple other sub-projects. The objective of this study is to present the methods of value management to avoid collision between multiple objectives of sub-projects included in the said project, which will enable effective decision making when weighing between upper-level plans and lower-level ones.

1.2 Scope and methods

This study aims to examine value, value system, benefit and benefit management and apply them to the urban regeneration project. This study was around the Se-woon 4th District Urban Environmental Rearrangement Project for Se-woon Urgent Rearrangement District, Seoul Metropolitan City. This study is about the comprehensive urban regeneration project that is composed of multiple sub-projects as with Se-woon Priority Rearrangement District.

It is expected the purpose and objective of the project will be achieved in a more systematic way if benefit management is adopted to pursue values of the urban regeneration project. In order to identify a good value management method, this study determined the values of the Se-woon 4th District Urban Environmental Rearrangement Project and then identified the correlatedness of each value and prioritized them.

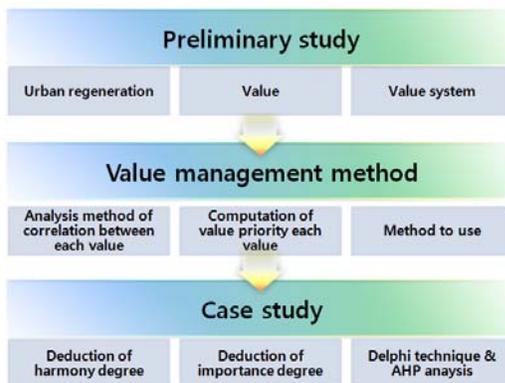


Figure 2. The flow and method of the study

2. PRELIMINARY OBSERVATIONS

2.1 Observations regarding the urban regeneration project

The urban regeneration project aims to improve ‘quality of life’ through physical/environmental, living/cultural and industrial/economical regeneration of cities which are degenerating due to the change of industrial structure (mechanical mass production oriented industry -> new industries such as electronics, hi-tech and IT) and the urban enlargement centered around new towns and new

cities. Besides, it also aims to create new space by introducing and creating new functions.

Current laws related to the urban regeneration project include the law on planning and usage of the land, law on urban development, law on urban and residential environmental rearrangement, etc. The urban regeneration project aims to improve effective land use in the outdated areas within city centers and to improve the urban environment through restoring the city functions.

In order to make the urban regeneration projects successful, coordination between physical/environmental elements, living/cultural elements and economical elements is essential. However, there is no coordination between or a clear system of these elements. Such a lack of coordination among each element can cause a conflict between objectives of sub-projects. In a long-term project such as the urban regeneration project in particular, conflicting objectives can have a direct impact on the success.

The urban regeneration project is a very long-term business. During its long life cycle, there come many changes and therefore it is necessary to cope with such changes. The planning of the urban regeneration project that seeks various values is, therefore, of critical importance and the plan should be flexible enough to cope with all changes that are likely to happen during the long life cycle. A planning that cannot cope with changes can give a rise to conflicting objectives between different sub-projects and unnecessary tensions. This study aims to prevent conflicts between different objectives of sub-projects by identifying correlatedness of values and prioritizing them and thus helping to cope with changes.

2.2. Observations regarding value

(1) The definition of value

Value is not a clear-cut, established, objective or absolute concept but an abstract and relative concept which represents an individual’s belief about a desirable state. Its general meaning according to a dictionary is “meaning or importance, etc of an object.” In philosophy it means “objective ‘what should be’ or the meaning as in the relation between a certain object and a human being,” and in economics it means “importance of goods that fulfill desire.”[2] Talking about the importance of architectural value, Hershberger (2003)[3] stressed that value becomes an issue. He said those values that become issues should be applied to architectural design. In other words, there are various values that are sought by the art of architecture and therefore they need to be structured in a frame, that is, a value system, in order to be understood[4].

Meanwhile, benefit was defined by an OCG[5] (Office of Government Commerce) stakeholder of Britain as a measurable improvement that is derived from an output regarded as a profit. The PMI (Project Management Institute) of the US defined it as an improvement that is realized through a management of an organization such as increased sales, reduced running costs and decreased waste. Table 1 shows the types of benefits.

Table 1. Types of benefits

Description		Definition	Example	
			Cashable	Non-Cashable
Tangible	Definite	The benefit with clearly expected value	Cost saving	Reduced number of processes
	Expected	The benefit with expected value based on the high level reliability and historical trend	Increased sales	Fast completion of a task
	Anticipated	The benefit is anticipated but its value is not necessarily anticipated.	Low deposit	Increased customer satisfaction
Intangible		Possible to anticipate but difficult to put it in a concrete form. Feasibility can be determined only when measured by other alternative benefits.	Improved image (surrogate measurement: increased number of a letter of recommendation)	

In this study, the term, value is used not only in its general meaning but also as a concept that incorporates benefits. In this study, value can be defined as a tangible or intangible output that can be eventually obtained by implementing the urban regeneration project.

(2) The value system

The researches on the value system in the field of architecture as shown in Table 2 has been on the values of 'design stakeholders' such as building owners, building users and building designers. On the contrary, this study pursues the value system not just for individual buildings but for urban facilities. The District Urban Environmental Rearrangement Project selected for this study is being planned taking the urban degenerating and citizen's request into consideration. Similar to the value system is the QFD (Quality Function Deployment) model. The QFD model uses a graph to relate market demands (or customer voice) to the mechanical design of products in a form of matrix.

Table 2. Researches on the value system

Author	Major contents
Park, Il-woo (2002)	The value system of design stakeholders are classified into 5 values that are been classified into sub-values. The values and sub-values of 'design stakeholders' are prioritized.
Lee, Han-seok (1997)	In order to analyze the value system of Korean architects, their description of their own works as published in magazines have been analyzed. By exploring various values sought by the act of designing, the overall value system of Korean modern architects was explained. Prioritization of values by architects in their architectural designing was analyzed.

It helps to understand various off-setting relations in the process of new product designing and facilitates communication among the various parties involved[6]. That is, the QFD converts the qualities demanded by users to substitutable features, determines the design quality of finished products and applies them systematically to each part and process [7].

Also in the urban regeneration project, the urban degeneration and citizen's request should be systematically taken into account when each plan is written.

3. THE METHOD OF VALUE MANAGEMENT

3.1 Calculating value importance

Objectives and values can either be mutually supplementary, resulting in a synergistic effect, or conflicting against each other. This study aims to prioritize the objectives and values of the urban regeneration project, which will make it possible to select the most ideal objective and value. The prioritization will be merely a result of the analysis of relations between objectives and values. If the importance of the objectives of the nation or cities are considered, it could become different again. It is necessary to have the concept of "value importance" which shows different priorities of values. To prioritize values, the questionnaire based on the AHP (Analytic Hierarchy Process) method is used to ask those who participated in the urban regeneration project about the values chosen through the value system. In view of the nature of questions asked, the Delphi method should be taken.

The AHP method acknowledges that the decision-making is based on the things that are difficult to be quantified such as "gut feeling", "intuition" or "feeling" and then tries to make a judgment based on the most common response. The most important in arriving at a meaningful result through the AHP is to select proper specialists, because the result can largely be influenced by the subjective judgment of specialists due to the nature of the AHP [8]. It is possible to find the value importance though the AHP method and the value importance means

the weight of a value chosen within the plan concerned. The higher the value importance is of a chosen value, the higher the priority of the value is.

The value importance can be used for planning and implementation of such projects and decision making. It is expected that the analysis of objectives importance or and value importance of projects can serve as a barometer that can be used when planning for a project.

3.2 How to use the value management

The value management is of critical importance during the decision-making phase of the overall project planning. Figure 3 shows how to use the calculated value importance.

The value identified in the upper level plan should be reflected in the lower level plan. The value importance in the upper level plan can be used as a criterion in determining the value that should be sought by the lower level plan and can also be used as a kind of checklist for the lower level plan. There might be a case where the value importance of a certain value is high but it conflicts with other values in practice and causes a problem.

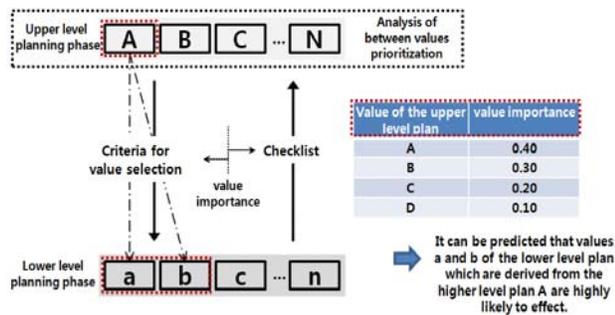


Figure 3. How to use the value importance (example)

Table 3. Adjustment of values for the Se-woon 4th District

Description	Values of the Se-woon 4 th District
Physical /environmental aspects	① Rearranging buildings and infrastructures
	② Reducing environmental burden by creating a 'green way'
	③ Making future-oriented environment, taking long-term asset value into consideration
	④ Maximizing effective land use through multiple development
Social/ cultural aspects	⑤ Having cultural welfare facilities
	⑥ Making a world-famous site where history and future coexist together with the world cultural treasure, Jongmyo
	⑦ Building a 'green way' along the the Se-woon commercial area
	⑧ Making a sustainable community
Industrial /economical aspects	⑨ Inducing inhabitants' influx by having residential areas in the city center
	⑩ Enlargement and re-creation of the local commercial area by having selling facilities
	⑪ Creating new industries and jobs by having business facilities
	⑫ Maximizing added value by inducing multiple development

4. CASE STUDIES OF VALUE MANAGEMENT METHODS

4.1 The method of case studies

This study is about the Se-woon Priority Rearrangement District. Data used for this case study include '2020 Basic Urban Planning,' 'Comprehensive Urban Renaissance Plan,' Altered Designation As Se-woon Urgent Rearrangement District according to Seoul Metropolitan City Notification Number 2007-260, Decision on the Urgent Rearrangement Plan and Notification of the Geographical Map,' and "Se-woon 4th District Urban Environmental Rearrangement Project Proposal."

Besides, the Delphi technique was used to prioritize various values. The Delphi technique is a procedural method that checks the agreement or disagreement of specialists about specific issues or subjects by conducting surveys repeatedly. The Delphi technique is famous for "providing an opportunity to change opinions through its anonymous nature and feedback mechanism," limiting a room for public opinions to be split due to the repeated initial questioning and thus helping to get results with a high median value. So, the Delphi technique is expected to be helpful in drawing agreement on future prediction and alternative policies [9].

4.2 Value analysis of Se-woon 4th District Urban Environmental Rearrangement Project

In this chapter, the management method as suggested in Chapter 3 is applied to Se-woon 4th District Urban Environmental Rearrangement Project. To do so, it is necessary to relook at the values sought by the Se-woon 4th District Urban Environmental Rearrangement Project. For comprehensive urban regeneration, values covering all the physical/environmental, living/cultural and industrial/economical aspects should be planned for. Therefore, this study looked at the Se-woon 4th District Urban Environmental Rearrangement Project in terms of physical/environmental, living/cultural and industrial/economical aspects as in Table 3.

Table 4. Step of adopting the AHP

Step	Contents
Identifying values for the 4 th Se-woon District	Re-examine the value system, that is analyzed in Chapter 5, of the Se-woon 4th District Urban Environmental Rearrangement Project and identify a total of 12 values
Preparing forms for pair-wise comparison of different values and questionnaires	Compare 12 values of the 4th Se-woon District by using the pair-wise forms and conduct a survey of specialists
Assessing consistency	As it is likely that the more pair-wise questions are asked, the less consistent the answers of responding specialists will be, consistency is assessed and questions answered below a certain level of consistency are excluded [10].
Assessing value importance and prioritizing	Collect questionnaires asking pair-wise questions that pass the consistency assessment, weight different values and determine ranks corresponding to each value.

To prioritize different values, this study adopted the procedures as in Table 4.

A total of 12 values were compared against each other by using the pair-wise comparison forms as in Table 5, in the scale of 1 to 9.

The results from asking questions above a certain level of consistency are as in table 6. Each value is numbered as in tables 8 and 9.

Upon analysis, ⑦. 'building a 'green way' along the Se-woon commercial area' presented the highest importance with 0.224 points, followed by ⑥. 'making a world-famous site where history and future coexist together with the world cultural treasure, Jongmyo', ⑫. 'maximizing added value by inducing multiple development', ③. 'making future-oriented environment, taking long-term asset value into consideration.'

On the contrary, ⑩. 'enlargement and re-creation of the local commercial area by having selling facilities' presented the importance of 0.038, ⑪. 'creating new industries and jobs by having business facilities' 0.034 and ⑨. 'inducing inhabitants' influx by having residential areas in a city center' 0.032, which is the lowest importance of all 12 values.

4.3 Result analysis of adopting

The highly prioritized ⑦. 'building a 'green way' along the Se-woon commercial area, ⑥. 'making a world-famous site where history and future coexist together with the world cultural treasure, jonggmyo', ⑫. 'maximizing added value by inducing development of multiple development', ③. 'making future-oriented environment, taking long-term asset value into consideration' can be either in competitive or inhibiting relation with other values.

Table 6. AHP analysis report

Values of the Se-woon 4th District	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
①	1.000	0.837	0.442	0.583	0.673	0.245	0.187	0.967	1.298	1.116	1.219	0.347
②	0.837	1.000	0.528	0.697	0.125	0.293	0.224	1.156	1.551	1.333	1.456	0.415
③	2.263	1.894	1.000	1.320	1.523	0.554	0.424	2.189	2.938	2.526	2.758	0.786
④	1.715	1.436	0.758	1.000	1.154	0.420	0.321	1.659	2.227	1.914	2.090	0.596
⑤	0.333	7.971	0.657	0.866	1.000	0.364	0.278	1.437	1.929	1.658	1.810	0.516
⑥	4.084	3.419	1.805	2.381	2.749	1.000	0.765	3.950	5.302	4.558	4.977	1.419
⑦	5.341	4.471	2.360	3.115	3.595	1.308	1.000	5.167	6.935	5.962	6.509	1.855
⑧	1.034	0.865	0.457	0.603	0.714	0.253	0.194	1.000	1.342	1.154	1.260	0.359
⑨	0.770	0.645	0.340	0.449	0.518	0.189	0.144	0.745	1.000	0.860	0.939	0.268
⑩	0.896	0.750	0.396	0.522	0.603	0.219	0.168	0.867	1.163	1.000	1.092	0.311
⑪	0.821	0.687	0.363	0.479	0.552	0.201	0.154	0.794	1.065	0.916	1.000	0.285
⑫	2.878	2.409	1.272	1.678	1.937	0.704	0.524	2.710	3.738	3.213	3.508	1.000
Importance	0.042	0.044	0.095	0.072	0.083	0.171	0.224	0.044	0.032	0.038	0.034	0.120
Ranking	9	7	4	5	6	2	1	8	12	10	11	3

Consistency Rate = 0.098 < 0.10

The reason why the 'green way' along the Se-woon commercial area has high importance though it is not related to profits from development is believed to be because it is part of developing "Urban master plan", derived from the value of a upper level plan, though it is a conflicting value against other ones.

When planning for facilities reflecting these values, conflicts with other values are anticipated and therefore, supplementary measures and a careful planning are needed.

5. CONCLUSIONS

This study introduced the concepts of value friendliness and value importance in order to prevent conflicts of various objects existing in the urban regeneration project.

12 values selected through the value analysis and are sought by the the Se-woon 4th District Urban Environmental Rearrangement Project were prioritized in this study.

This study is deemed to make an academic contribution to the implementation of the urban regeneration project by introducing the value management method which is yet a new concept. However, the case study has been confined to the rearrangement project within the urgent rearrangement district, which belongs to a lower level plan. And, the value system was also established based on the outcome of the plan. Additional studies are needed and the research that is not based on the outcome but can be reflected in real plans should follow. Stakeholders involved in the urban regeneration project are all pursuing different values. A research that examines the values per different stakeholder is also needed.

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REFERENCES

- [1] Kye, ki-seok. "Comprehensive plans and projects for urban regeneration", Korea Urban Management Association Conference, 2007.11.
- [2] Huh, Seong-Che, "Research on Deciding an Architectural Design Based on the Value Theory," PhD paper, Jeonbuk National University, P29, 1997
- [3] Hershberger, Robert G., "Architectural Programming & Pre-design Manager", McGraw-Hill, pp74, 1999
- [4] Park, Il-woo, Park, Young-ki, "Research on value systems of 'design stakeholders' – centered around business facilities," The Structure World, the journal of Architectural Institute of Korea, Volume 18, Issue 16, pp12, 2002

[5] Managing Successful Programmes, OCG (Office of Government Commercies)

[6] Cho, Dong-jin, Lim, Ho-soon, Lee, Koon-hee, "Research on the Model That Integrates SERVQUAL and QFD to Measure Aviation Service Quality," The journal of Korea Production & Operation Management Society, Volume 12, issue 8, p65, 2001

[7] E-mail training material, the Single PPM Quality Innovation Center of Small and Medium Business Administration and The Korea Chamber of Commerce & Industry (<http://sppm.korcham.net/>)

[8] Chung, Won-cho, Yu, Il-han, Kim, Kyung-rae, Shin, Dong-woo, "Analysis of Weighted Performance Index in Order to Measure Management Result Based on the Scale of Construction Companies," The journal of Architectural Institute of Korea, Volume 21, Issue 8, pp121-128, 2005

[9] Hwang, Ji-wook, "Prospects of Exchange and Cooperation Between Local Autonomous Bodies in South and North Korea and the Functional Change of Bordering Areas - Studied Through the Delphi Technique," The National Land Plan, the Journal of the Korea Society of Land and Urban Planning, Volume 39, Issue 1, p157, 2004

[10] Park, Chi-ho, Kim, Kyung-hoon, Lee, Yoon-seon, Kim, Jae-joon. "Analysis of impact of ultra high buildings on the economy and society," The Structure World, the journal of the Korean Society of Architecture. 2007