RE-INVENTING BRUSSELS: HOW KNOWLEDGE ON ALTERNATIVE URBAN DEVELOPMENT PROJECTS CAN ALTER URBAN POLICIES

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ABSTRACT: In this paper, we briefly discuss the use of alternative urban development proposals (AUDP) as a knowledge resource. The article combines a theoretical reflection with an applied study of urban planning in the Brussels-Capital Region. In the beginning, we present different types of alternative proposals and discuss how they can be evaluated and represented systematically. Afterwards, we test these inferences by applying one specific mapping tool -conceptual graphs- to the context of Brussels-Capital Region and compare the discourses of four urban investigations that were developed for the European Quarter. In conclusion we review the value of alternative development projects as a source of knowledge and make future recommendations for collective analysis, as well as collection and production of different kinds of knowledge in urban policy making.

KEYWORDS: Alternative Urban Development Projects (AUDP), Knowledge Base, Concept Graphs, Brussels-Capital Region, European Quarter

1. THE POWER OF ALTERNATIVE PROJECTS: DIAGNOSIS AND FUTURE PROSPECTS

Urban development proposals are context-dependent and context changes over time. Proposals that were rejected due to lack of public support, lack of financial resources and lack of political goodwill can serve as a medium for discussion and a source of inspiration later on for further development. This is an essential argument that stresses the need for a knowledge base of alternative urban proposals for urban debate and policies. Before initiating the discussion on this knowledge base, we would like to review the characteristics of those proposals.

According to our conception, urban development projects can be categorized as factual (realized), emergent (prospective) or counterfactual (alternative). Factual projects are partly or entirely implemented. Emergent projects are imagined, but not yet realised, whereas alternative projects are formerly imagined ones, which have not been realized at all. Particularly the third category, which we here refer to as 'Alternative Urban Development Projects' or AUDP, draws our attention.

There is anecdotal evidence that studies from the past often merely serve to fill up already crammed bookshelves, even though it took a lot of effort to develop them. Although it might not be possible to implement the proposals anymore, they can still provide an opportunity for counterfactual analysis of the existing situation. Moreover, the ideas and resources that they accommodate could be used as a basis to approve, develop or reject new proposals.

The imagination of an alternative development project provides a diagnosis of shortcomings of an existing situation as well as an identification of characteristic features and a guide for future development. Proposals for alternative development not only contain a representation of the existing, but also the imagination of a different reality. Imagined alternatives have an ambiguous value [1]. On the one hand, they maintain a certain distance towards real development. On the other hand, an urban imaginary also possesses a performative power, as a contribution to format reality and a social activity.

Alternative projects are thus multi-layered knowledge resources with descriptive, evaluative and prospective elements. The information communicated through the AUDPs is semi-structured and also syntactically, schematically and semantically heterogeneous [2]. Therefore, it is hard to compare different AUDPs, even more so if we consider that they were developed in a diverging context.

So how can this knowledge be analysed, organised and represented to serve urban policies?

2. GENERATING A KNOWLEDGE BASE OF AUDPs

Each AUDP is a representation of decisions and ideas in forms of spatio-visual, narrative, historical and temporal information. Models, types and formats used in different AUDP representations are usually incompatible, organized into different schemes and to be interpreted in numerous ways. These representations may include various types of maps, plans, diagrams, 3D-models, statistics and texts, which are written as manifestos, reports, policy documents or historical reviews. Visualizations (most particularly computer generated ones) tend to represent tangible assets of the urban development projects and focus on the quantitative dimension [3]. They are provided as proofs of concepts and principles per se.

In principle, a knowledge base of AUDPs should provide more than data without a context. It should facilitate discovery, accumulation, analysis, and clarification of information while combining, comparing and integrating different AUDPs. In order to provide a thorough and in-depth view of the projects, concepts like project objectives, theoretical approaches, context and proposed strategies should be represented in this knowledge base. Therefore, conceptual analysis and evaluation of AUDPs are crucial steps for building a knowledge base.

Extraction of concepts and relations can be conducted through different methods such as manual extraction and discourse analysis, automated and semi-automated linguistic studies. Discourse analysis is a comparative and referential strategy that can assist in revealing the contents of a project. Manual discourse analysis requires a comprehensive literature review and meticulous deciphering. Completeness of this kind of theoretical analysis is limited, partly due to its rather subjective nature. The reliability can be enhanced when multiple coders develop the analysis.

Concept extraction can also be conducted through automated analysis methods of text mining and natural language processing. These methods heavily rely on lexical databases that contain semantic relations between synonym sets, as well as judgements of human experts, who are employed to label the terms and verify the results. The completeness and reliability of these methods are also questionable and there are no standards for concept collection [4]

Representation and exploration of these knowledge concepts from AUDPs are possible through different tools, for instance as a textual or graphical representation. The latter includes amongst others, concept, decision or argument maps.

A basic conceptual graph (CG) is a logical representation method for modelling knowledge concepts and relations between them. The idea of CGs can be traced back to artificial intelligence studies on semantic networks and the existential graphs of Charles Sanders Peirce. Compared with linear models, CGs can illustrate complex relationships and allow comprehensive exploration of the contents [5].

Among other types of representation tools, decision maps show the order and interdependence of decisions to be taken in order to develop a specific perspective. Argument maps represent main arguments to support particular proposals. Time-based maps include a combination of the previous representations.

Our primary interest here goes to visualisations through concept maps, which allow the allocation of the concepts derived from the discourses of different studies and comparison of the proposals concerning different issues in the field of urban policies. Thereafter concept maps are then linked to a time map, which enables to understand the context of the AUDPs.

3. A KNOWLEDGE BASE ON (ALTERNATIVE) DEVELOPMENT OF EUROPEAN QUARTER

3.1 Constructing a Sample of AUDPs

The European Quarter in Brussels-Capital Region is chosen as a case study area for testing the initial steps for constructing a knowledge base of AUDPs. This decision is based on the widely available information about this region and long term studies conducted by Annette Kuhk. In order to develop the model, conceptual graphs are constructed and tested as a tool-medium for analysis, collection and production of different kinds of knowledge about AUDPs.

The period between 2001 and 2007 is productive in terms of alternative development proposals. A lot of energy was put into proposals for the European Quarter's future development in anticipation of the European Union's eastern expansion in May 2004. In this study, three investigations that preceded this event are compared. Right after the expansion, the 'Schema Directeur'[6] was developed, which is the fourth study to

be represented here. The four investigations are subsequently referred to as 'Capital Study'[7], 'Directives'[8], 'Ombudsplan'[9] and 'Schéma Directeur'[6].

3.2 Extraction of Concepts

The extraction of concepts was developed in the doctoral research of Annette Kuhk. Intermediary results were presented in 2008 [10]. The four studies mentioned in the previous section were examined through manual discourse analysis and represented in a comparative and mainly textual account. The starting point is that urban policies can be described as a grouping of a multitude of issues to be solved. Each of the four studies focuses on specific issues and defines the problems to be solved in a different way. They also have a different frame. The discourse analysis reflects the comparison of these particular problem definitions (and consequently also the proposed solutions), which reflect a specific understanding and conceptualisation of sub themes for urban planning, as applied to the European Quarter. The information from this study is used to construct concept graphs for comparison and graphical representation of the four studies on the European Quarter.

3.3 Constructing Conceptual Graphs

The idea of visualising concepts to assist decision-making partially reflects the results from an experimental PhD dissertation by Burak Pak [3]. In this study, it was discovered that the availability of conceptual representations affects the decision making process and quality of design decisions. Therefore, while constructing conceptual visualizations, it is hypothesized that providing more conceptual information with different representation schemas to the decision makers should enhance the decision making process.

The information from this study is used in order to construct concept maps to compare and graphically represent the four studies on the European Quarter. The concept maps that were developed include two perspectives from the doctoral research of Annette Kuhk. One is the 'rationale' of the study, indicating who commissioned the studies and who executed them, what temporal and spatial frame was selected and whether or not the study intended to develop novel conceptualisations. The other perspective looks at the contents and 'discourse' of the studies, and analyses recurrent topics and how they were answered. The analysis of 'rationale' provides a frame of interpretation for the 'discourses'.

The graphic representations intend to provide a tool that allows an uncomplicated comparison of the studies and therefore also a tool that can be easily communicated to different target audiences. Another ambition within the development of the graphic representations is open character that enables in the representations to be recycled and applied to represent other studies as well. The tool allows the extension of the knowledge base and comparison of emergent proposals to previous ones.

Parallel to the concept map, a timeline map is introduced. This is partly based on findings from the doctoral research of Annette Kuhk as well as Hein's[11] investigations. Representation of several contextual aspects in their temporal development can lead to a better positioning and understanding of the AUDPs in a knowledge base.

4. CONCLUSIONS: HOW KNOWLEDGE ON AUDP CAN ALTER URBAN POLICIES

Our brief study on how to use and represent AUDPs opens a discussion on potentials of developing knowledge bases that include alternative proposals. As an initial and critical test, the application for Brussels also shows limitations of the applied graphical tools and points at aspects that need to be advanced. The evaluation below reflects on the inclusion of alternative development proposals as knowledge resource for urban planning, as well as the added value of a graphical translation to represent AUDPs to construct a knowledge base.

AUDPs are developed with a particular 'Zeitgeist', in a given context, which effects the interpretation of their feasibility. A truly inspiring example that illustrates how to include an AUDP is the development of the neighbourhood 'Neues Bauen am Horn' in Weimar. The unique experimental house from 1923 was a prototype of Bauhaus-modernity, meant to be the start for a new, straightforward philosophy of construction and living. Walter Gropius planned a whole neighbourhood right next to the prototype in the same spirit. His plans were expelled for a long time and for different reasons, such as lack of budget or space, lack of political will or a general rejection by the wider public. Professors from the Bauhaus-University revived his ideas in the 1990s. They strived to adapt the concepts to a contemporary context answering the question

'How do we want to live today?'. The recently constructed neighbourhood refers to the 1920s avant-garde. At the same time, the realisation proves how concepts can be adapted to present-day standards of living, as well as to ecological and economical constraints.

This example illustrates how an AUDP can be exploited as a knowledge resource. It demonstrates that many factors need to be in place in order to move from plan to realisation. It also shows that a former plan can be re-evaluated in a new context. Last but not least, it proves that a thorough analysis of problem definition and proposed solutions of an AUDP can lead to productive, thoughtful and innovative proposals in confrontation to a contemporary context. The study work for the AUDP is not lost, but rather re-interpreted.

The development of a knowledge base moves beyond the re-evaluation of a single AUDP and requires several consecutive steps such as constructing a meaningful sample of AUDPs, analysing the AUDP for its contents and context, and finally, comparing and representing the proposals.

The challenges in building a knowledge base for AUDP can be defined by the heterogeneity of the content of the studies, the heterogeneity of the target audience as well as the risk of affecting and manipulating the contents when developing "a representation of representation". In order to meet this challenge, it is crucial to allow representation of individual interpretations, developing a flexible and dynamic ontology construction (on the go) and applying tools for comparison of abstract representation.

The first test of the concept maps and time-based analysis illustrated the following advantages:

- Concept maps were sufficient and effective in representing the conceptual attributes of alternative urban development projects and revealing the complex relationships between different concepts.
- They provide a rich context for comparative analysis.
- They also offer opportunities for urban planning and policy learning. In the future, other types of conceptual graphs can be tested in an educational environment with a focus on their perceptual aspects.
- Time-based analysis allowed a wider scope of visual analysis, situating alternative urban development projects in political and social context.

Conceptual graphs created for this study are illustrated in a traditional print format. Enabling the actors to perform interactive operations (such as adding, re-organizing, deleting concepts and links) with the content may add a value.

As a future recommendation, we suggest that the development of an interactive system supporting representation of individual ideas on alternative urban development projects can contribute to a better understanding and discussion of the studies in this area. The system should facilitate analysis, collection and production of different kinds of knowledge about those projects. These can be achieved by enabling decision makers to define new concept categories, share their ideas and compare abstract representations, interactively.

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