

An Examination of The Applicability of Nonaka's Theory in The Empirical Context of UK Urban Regeneration: A Case Study of The Creative Town Initiative in Huddersfield (1) — Methodology —

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Abstract

This paper, focusing only on methodology, is placed in the first one in the series of papers. Therefore, the continued articles would be read in sequential issues of Yamanashi Global Studies. There has been little empirical and theoretical research which has focused on 'knowledge' and 'knowledge creation' in the context of strategy-making for urban regeneration in the UK, where public-private partnerships are widespread. In an attempt to contribute to filling this gap, a series of papers, which start from this paper, aim to examine the applicability of Nonaka's theory of organizational knowledge creation to the *empirical* context of urban regeneration in the UK, using Creative Town Initiative in Huddersfield as a case study site. In so doing, in this paper the methodological approach adopted in this whole research is only discussed. This discussion heavily draws upon Yin's (2003) work on case study methodology. The examination suggested it was appropriate to select a case study method in order to address the research question.

key words: Methodology, Case Study, Knowledge, Nonaka's SECI model

1. Introduction

This paper, focusing only on methodology, is placed in the first one in the series of papers. Therefore, the continued articles would be read in sequential issues of Yamanashi Global Studies. There has been little empirical and theoretical research which has focused on 'knowledge' and 'knowledge creation' in the context of strategy-making for urban regeneration in the UK, where public-private partnerships are widespread. In an attempt to contribute to filling this gap, a series of papers, which start from this paper, aims to examine the applicability of Nonaka's theory of organizational knowledge creation to the *empirical* context of urban regeneration in the UK. In so doing, in this

paper the methodological approach adopted in this whole research is only discussed. This discussion heavily draws upon Yin's (2003) work on case study methodology.

2. Research methodology

2.1 The research theme and approach

The methodology is designed to examine the hypothesis, which is shown as follows:

Nonaka's theory of organizational knowledge creation can be applied to organizations engaged in policy-making, planning & management for urban regeneration in the UK in practice.

In the previous papers argued by the author, the applicability of Nonaka's theory in the

theoretical context of urban regeneration was examined by using two sets of urban planning theories instead of urban regeneration literature.¹⁾ In this whole research, the focus of the examination is on the *empirical*, not the theoretical, context of urban regeneration.

There are a number of ways of carrying out social science research.²⁾ Yin (2003) provides three sets of criteria or conditions when selecting the most appropriate social science research method; namely, (1) the type of research question, (2) whether or not an investigator has control over actual behavioural events, and (3) whether the focus is on contemporary or historical phenomena.³⁾ Table1 shows relationships between types of social science research methods and their relevant situations.

The author has taken the view that the case study method is suitable (1) when *how and why* questions are being posed (this is because such questions deal with operational links needing to be traced over time, rather than mere frequencies or incidence), (2) when the researcher has *little control* over events, and (3) when the focus is on a *contemporary* phenomenon within a real-life context. Yin's three sets of criteria strongly support a case

study approach in this research. Firstly, Nonaka's theory is concerned chiefly with the mechanism or processes of *how* knowledge is created in a team or an organization and therefore this empirical research inevitably has to focus on the *how-form* question in the strategy-making process in urban regeneration. Secondly, it is very apparent that unlike experimentation, strategy-making processes in urban regeneration *cannot be controlled* by a researcher. Thirdly, the focus of research is on a *contemporary* urban regeneration issue that is embedded within certain real-life contexts. Given this, it was deemed appropriate to select a case study method in order to address this research question.

As most social science textbooks on research methods seem to fail to consider the use of the case study as a formal or scientific research method, therefore, few researchers define the case study as a particular method (see e.g. Kidder & Judd, 1986; Nachmian & Nachmian, 1992; Sato, 1999; May, 2001).⁴⁾ The case study is defined by an interest in individual cases and less by the methods of inquiry used (see Stake, 1994, p236). There is, however, an exception, to this trend. Yin (2003) regards case study research as a social science research

Table1: Relationships between types of social science research and their relevant situations
(Source: COSMOS Corporation, cited from Yin, 2003)

Method (Strategy)	Form of research question	Requires control of behavioural events?	Focuses on contemporary events
Experiment	how, why?	Yes	Yes
Survey	who, what, where, how many, how much?	No	Yes
Archival analysis	who, what, where, how many, how much?	No	Yes/No
History	how, why?	No	No
Case Study	how, why?	No	Yes

method that provides a sequential logic from research design to research methods. This author defines a case study as an empirical inquiry that:

- investigates a contemporary phenomenon within its real-life context (cf. History);
- is concerned with situations which cannot separate a phenomenon from its context (cf. an experiment that focuses attention only on a few variables);
- is a comprehensive research method that relies on multiple sources of evidence (which may include both qualitative and quantitative evidence); and
- uses a number of approaches depending on the research purpose (these include explanatory or casual case studies, descriptive case studies and exploratory case studies) (Yin, 2003, p12-14).

The case study is, in other words, a way of investigating an empirical topic that relies on multiple sources of evidence acquired through both quantitative and qualitative methods to cope with a distinctive context in which there are far more areas of interest than quantitative research can identify. The empirical research presented here follows this definition of the case study.

2.2 Research design of the case study

Selection of a type of case study

In designing an empirical research programme, a decision has to be made as to whether a

single case study or multiple cases will be conducted. Yin (2003) presents four types of case study designs, based on a four-fold matrix (see Figure1).⁵⁾

Yin also claims that the single case can be used to determine whether a theory's propositions that are being examined (tested) are correct on the basis of the empirical evidence established by the research or whether alternative sets of explanations might be more relevant. Another rationale for the single case, according to the author, includes an extreme or unique case. As mentioned earlier, the aim of this research is to examine the applicability of the theoretical propositions of Nonaka's theory to the urban regeneration context. The strategy planning practice for urban regeneration that focuses on knowledge creation seems *rare and unique*. Given the focus of the proposed research, it was deemed appropriate to take a *single case holistic approach*.

Having defined the type of case study as a single case holistic design and based on examination of knowledge activities in both the contexts of urban planning and knowledge management discussed in previous papers,⁶⁾ the criteria to select a case in this research were set up as follows;

- The extent that *knowledge-creation*, rather than knowledge-diffusion would be generated in a strategy-policy making process in urban regeneration.

	Single-case designs	Multi-case designs
Holistic (single-unit of analysis)	Type1	Type3
Embedded (multiple-units of analysis)	Type 2	Type4

Figure1: Basic types of design for case studies (Source: Yin, 2003)

- The extent that some measure of success of employment creation is achieved (indicative of its capability to create knowledge)

Based on the above criteria and from a practical standpoint, the *Creative Town Initiative (CTI)* in Huddersfield in the UK was considered to offer the required scope.

The Creative Town Initiative as a case study site

The *Creative Town Initiative (CTI)* in Huddersfield is, as its name suggests, characterised by its emphasis on citizen's *creativity*⁷⁾ as a method of addressing urban problems (CTI (KMC), 1996). The premise of CTI is that 'as we approach the 21st century, there is a widespread understanding that it will be the creativity and innovativeness of our towns and cities that will determine their future success' (KMC, 1996, p3). Creativity and knowledge-creation are similar concepts; CTI obviously focuses on knowledge-creation rather than knowledge-diffusion. By proclaiming the importance of the innovative approach to urban regeneration in its proposal, CTI was chosen as one of the winners of a competition held by the European Commission and awarded 3 million ECU (see CTI, 2002). By conducting the project, CTI created 168 new jobs while safeguarding an existing 396 (see CTI, 2002). Moreover, it was estimated that under this scheme 6,476 people received some form of training or special educational experience, ranging from classes in creative thinking through to advanced qualifications. 67 new businesses started up (see CTI, 2002). Given this, it was deemed appropriate to select CTI as a case study site.

The *unit of analysis* may be defined in terms of

the *time* and *space* boundaries of the research (see Yin, 2003). Although the research focuses on the process of the CTI proposal, taking into account that organizational knowledge creation is not an event, but sequential events in a group(s) or organization(s), which take a historical, temporal perspective, it was decided to look at both pre and post events of the CTI proposal. In this context, the *time* boundary was defined as the period from the origin of CTI to after its implementation, with the focus on proposal-making of CTI. In relation to the time boundary, the *space* boundary was defined as people and organizations engaged in from pre- to post events of CTI, again focusing on the proposal-making of CTI in Huddersfield.

2.3 Methods of data collection

One of the methods of collecting data is to *follow* the *theoretical propositions* that enable a researcher to have a certain direction in collecting data. The integrated framework of the TEAM linguistic structure and Nonaka's five-phase model of organizational knowledge creation provided the case study's theoretical propositions, which incorporates the four modes of knowledge conversion, including the socialization, externalization, combination and internalization modes. (see Figure 2).⁸⁾

The five conditions including *organizational intention, autonomy, fluctuation / creative chaos, information redundancy* and *requisite variety*, which Nonaka assumes facilitate organizational knowledge creation,⁹⁾ were also regarded as the theoretical prepositions to be followed during data collection for the case study (see Table2).

Compared with other methods of data

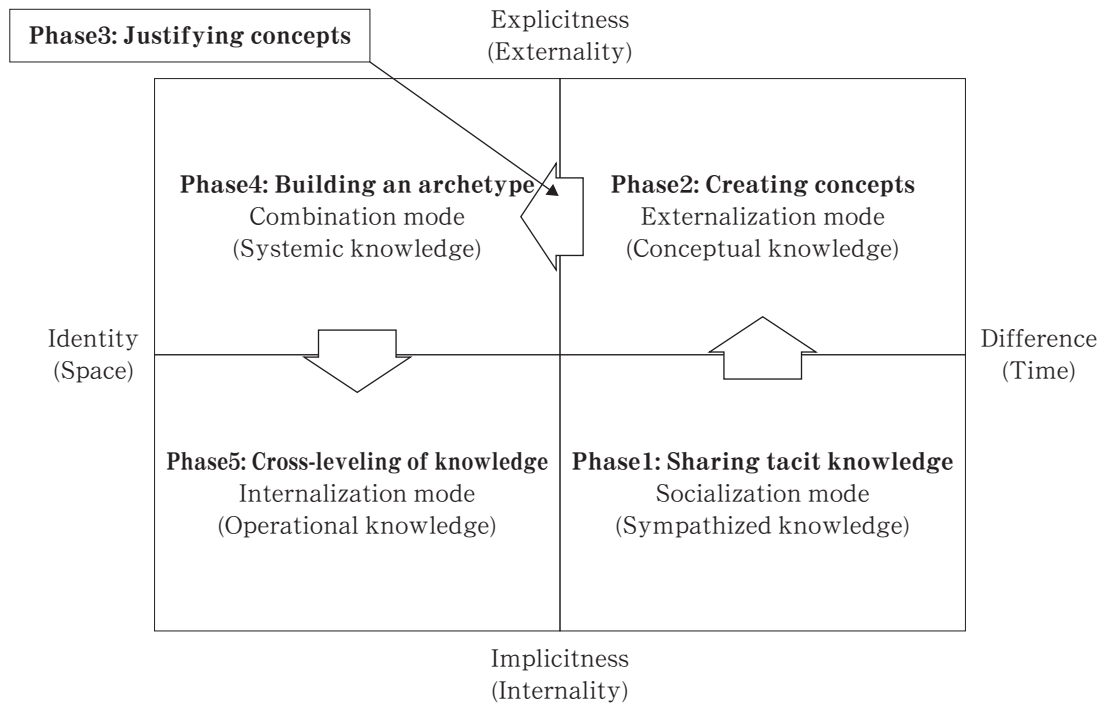


Figure 2: Integrated framework of the TEAM linguistic structure and Nonaka's five-phase model (Source: Author)

Table 2: Nonaka's five organizational conditions
(Source: Made by Author based on Nonaka & Takeuchi (1995))

Five conditions for knowledge creation	Meanings (related notions)
Organizational intention	An organization's aspiration to its goal (e.g. Strategy, knowledge vision & justification criteria)
Individual and group autonomy	Autonomy at the individual and group levels, which provides individuals with the chance of introducing unexpected opportunities and a group with greater flexibility (e.g. Self-motivation & self-organizing teams)
Fluctuation / creative chaos	A chance that is hard to predict, which provides organizational members with opportunities to reconsider their basic mindsets and to provide a sense of crisis (e.g. 'Breakdown' of routines, habits, or cognitive frameworks)
Informational redundancy	The existence of information that goes beyond the immediate operational requirements of organizational members (e.g. Intentional overlapping of information & loosely-connected individuals)
Requisite variety	A minimum in terms of organizational integration and at the same time a maximum for effective adaptation to environmental change (e.g. Internal diversity & a minimum for organizational integration)

collection such as experiments, surveys or histories, one of the strengths of case study research in collecting data is the use of *multiple sources of evidence*, which includes documents, archival records, interviews, direct observation, participant-observation and physical artefacts. The use of multiple sources of evidence in the data collection process has at least two advantages. Firstly, it enables a researcher to address a broader range of historical, attitudinal, behavioural and organizational issues (Yin, 2003), which have to be dealt with in the type of empirical research presented here. Secondly, this can provide multiple evidence or measures of the same phenomenon (Yin, 2003). In other words, when the events or facts of the case study have been supported by multiple sources of evidence, then any findings or conclusions are likely to be much more convincing and accurate in terms of their overall quality.¹⁰⁾ Given this, the empirical research presented paid close attention to the use of multiple sources of evidence.

One of the most rewarding sources of collecting data in this type of qualitative empirical case study research is the *in-depth interview*, which provides rich insights into people's experiences, opinions, values, aspirations, attitudes and feelings (May, 2001), which are essential for this research. Given its nature, the majority of empirical material was collected through *focused interview technique* and supported by *semi-structured (open-ended) techniques*. *Focused interview* is the method of collecting data in terms of the research question, that is, on the basis of the theoretical propositions. Respondents can be asked about the facts of a matter as well as their opinions about events. A set of questions

are derived from the case study propositions in order to corroborate certain facts. *Semi-structured interview* is conducted in such a way as to provide the interviewee with latitude in order to provide information that may not have been anticipated by the interviewer, potentially enriching interpretative analysis. This technique provides qualitative depth by allowing interviewees to talk about the subject within their own framework (May, 2001).

In this research, interviewees include key representatives of CTI. Every interview cannot be considered of equal value to the research because key interviewees are often critical to the success of case study research (Yin, 2003).¹¹⁾ It, however, should be noted that to avoid over-dependence on key interviewees, case studies should use other sources of evidence which can corroborate the data collected from the key interviewees. Although basic questions were generated along the theoretical propositions posed by the researcher (see Figure 2 and Table 2), they were amended on an interviewee by interviewee basis because each member of CTI was deemed to play different roles and to have other important areas of information in knowledge creation invaluable to the strategy-making processes, which may be considered 'focused interviews'.

Document information, which takes many forms such as letters, written reports of events and administrative data, is most likely to be relevant for case study work. However, many academics have been suspicious of the heavy use of such documents in social research (May, 2001) and in case study research in particular (Yin, 2003). This is likely to be because the casual researcher may mistakenly

assume that all kinds of documents contain the unmitigated truth, without considering that such documents were written for some specific purpose and/or specific audience. Documentary evidence, therefore, should be used cautiously. One of the most prudent methods of using documentary evidence is to corroborate and enhance evidence from other sources. Documentary evidence also helps the researcher to make 'in-depth' questionnaires on particular events on a person-by-person basis. Moreover, it leads one to make inferences, which may provide clues worthy of further investigation. Based on the kind of awareness and purposive use outlined above, documentary evidence for this research was collected from sources such as the web site of CTI (<http://www.huddersfieldpride.com/archive/cti/ctimain.htm>), *Huddersfield: Creative Town Initiative*, a proposal of CTI (KMC, 1996), annual and final reports, a document on CTI written by Landry (2000b) and a pre-conference reader *'The Creative City'* (also see references).¹²⁾

The researcher first contacted the manager of CTI (Mr. Phil. Wood) at the time of the study, to ask him to send a set of the most important written documents relating to CTI since its conception and to list people who were most active in the process of creating the CTI proposal, together with details of the stakeholders. In October and November 2003, based on the information provided, 9 stakeholders who agreed to meet up with the researcher met on a face-to-face basis. This included the manager of CTI, an Economic Development Officer in the Council, the Director of the Media Centre, the Director of Beaumont Street Studio (representing the voluntary sector),

the Director of ARTIMEDIA (a private media company), the Director of Huddersfield Pride (an urban regeneration organization in Kirklees), the Director of the Creative Industries Development Agency (CIDA), the Assistant Head of the Cultural Services in KMC, a Professor of Entrepreneurship at the University of Huddersfield's Business School (prof. John Thompson) and the Manager of Business Generator (a Business Incubator). All interviewees were conducted with tailor-made questionnaires given prior to the interviews in order to demonstrate the nature of the questioning, and potentially provide interviewees with an opportunity to prepare their answers. Wherever possible, interviews were recorded because using recording devices provides a more accurate rendition of any interview than any other method and the tape-scripts were transcribed. These interviews are cited in the case study research and quotations employed. Additional documents related to CTI were also collected when the interviews were conducted.

2.4 Methodology of data analysis

Analysing evidence can prove to be a difficult part in the qualitative research process in general and case study research in particular because the methods and techniques for this purpose have not been well established (Tao & Wakabayashi, 2001). Yin (2003), however, provides some general analytical strategies in analysing case study data, which can assist a researcher to treat the evidence fairly, produce compelling analytical conclusions, and rule out alternative interpretations. One such strategy is the *pattern-matching technique* which is a way of relating the data to the propositions that aim to compare an empirically based pattern with a predicted one. The pattern-

matching technique is utilized here in the illustration of Nonaka’s theory using CTI in Huddersfield, which compares the theoretical propositions presented with the empirical facts established by the case study.

3. Generalisability of the research and limitations of case studies

As argued above, there is considerable cause for concern about the lack of rigour in case study research. This is partly because on many occasions, the case study researcher does not establish a systematic procedure and partly because case study research is inherently influenced by biased views which impact the direction of its findings (Yin, 2003). It has therefore been argued that the result of a case study cannot be generalizable.¹³⁾ Given

this criticism, it is crucial here to consider how a single case can lead to generalization.

Whilst acknowledging the inherent limitations of the case study research presented here, the major findings derived from this research are expected to have resonance to other ‘knowledge-creating, proposal making’ in the urban regeneration context. This is because a case study may be generalizable to theoretical propositions and not to populations or universes based on sampling techniques. In other words, theory development is the level at which the generalization of the case study results will occur. In this instance the role of theory has been characterized as *analytic generalization* and contrasted with another way of generalizing results, known

Table3: Design of the case study research

Aim of proposed empirical research here	To examine the applicability of Nonaka’s theory to the practical context of urban regeneration in the UK in the form of illustration
Research method employed	Case study research
Type of design for the case study	Holistic single-unit of analysis
Selected research site	Creative Town Initiative (CTI) in Huddersfield
Unit of analysis	Time: The period from the origin of CTI to post-CTI with the focus on the CTI proposal making Space: Focuses on people and organizations engaged in the CTI proposal making and pre and post events of CTI
Main sources of data	In-depth interviews and documents (see References)
Principle of data collection	Following <i>the theoretical propositions</i> (The integrated framework of the TEAM linguistic structure and Nonaka’s five-phase model of organizational knowledge creation and his five conditions for organizational knowledge creation) (see Figure 2 & Table 2). Using multiple sources of evidence (triangulation)
No. of interviews	9
Av. length of interview	1-2 hours
Methodology of data analysis	Pattern matching technique in the form of illustration of Nonaka’s theory (relating the empirical facts to the propositions)
Generalisability	Analytic (not statistical) generalization

as *statistical generalization* (see Yin, 2003). Although this particular piece of research does not aim to achieve statistical generalization by using statistically rich data and enumerating frequencies with a large number of samples, it does aim to expand and generalize the relevancy / applicability of Nonaka's theory to the UK urban regeneration context, which constitutes an analytic generalization. Moreover, it has to be acknowledged that the results of this research could be further refined by conducting additional case studies in similar urban regeneration contexts to further test the conclusions reached. Table 3 summarizes design of the case study research.

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Notes

- 1) See Adachi(2007), 'Examining Communicative Rationality in Communicative Planning in terms of the TEAM Linguistic Theory' (日本都市計画論文集) and Adachi (2008) , 'An Examination of Systems Theories and Rational Theories of Planning in terms of Knowledge' (Proceedings of International Symposium on City Planning).
- 2) These include experiments, surveys, histories, case studies, ethnography (fieldwork), action research, archival information and official statistics analyses (Robson, 1993; May, 2001; Yin, 2003).
- 3) According to Yin (2003), although a certain method (strategy) is suitable in certain situations, the various methods are not mutually exclusive and therefore, multiple methods are used in any given research (e.g. a survey within a case study or a case study within a survey).
- 4) One common account of the case study is to view it in either ethnographic or qualitative research (as a data collection technique). Another common flaw is to place case studies at the exploratory (rather than explanatory) stage of some other type of research methods.
- 5) This matrix is coordinated by axes, one regarding single-case designs / multiple-case designs and the other regarding holistic (single unit of analysis) / embedded (multiple units of analysis) (see Figure1). The matrix generates four types of designs for studies, which are single-case holistic designs (Type1), single-case embedded designs (Type2), multi-case holistic designs (Type3), and multi-case embedded designs (Type4).
- 6) See Adachi(2007), Adachi(2008) , Adachi(2010), Adachi(2012) and Adachi(2013)
- 7) CTI does not seem to clearly define 'citizen's creativity'. However, in the proposal document (CTI, 1996, p3), CTI claims 'Today towns and cities like Huddersfield only have one crucial resource - their people: their cleverness, ingenuity, aspirations, motivations, imagination and creativity'. In this sense, 'citizen's creativity' seems to mean the potential power of citizen's thinking and ideas, which can solve urban problems.
- 8) The theoretical integrated framework of the five-phase model and the TEAM linguistic structure has developed in Adachi (Yamanashi Global Studies No.6, Figure 2-9), which Figure2 modified as a working model.
- 9) See Nonaka, I. & Takeuchi, H. (1995)
- 10) There has been a certain amount of criticism of the use of case studies and this includes claims that a case study researcher 'subjectively' collects the data, failing to develop a sufficiently operational set of measures. The introduction of the linguistic approach to the hypothesis-formulation, as this paper has been applied for (see Adachi, 2010 in more details), may address such potential problems of *validity*.
- 11) The key interviewees not only provide the case study researcher with insights into a variety of matters, but also may initiate access to additional important sources.
- 12) Regarding other sources of data, as an archival record (which may also be useful in case study research), reports on the *Creative City Conference 25th - 27th May 2000* were collected for this case study. Physical or cultural artefacts (such as a

technological devices, tools or instruments, built environments or some other physical evidence) as other sources of evidence have less potential relevance to the case study in question owing to the research focus on the process of strategy-making. Although 4,117 square metre areas which were made up of derelict industrial and commercial property and were renovated by implementing CIT projects, are important physical artefacts, they are not deemed to be of prime concern.

- 13) It is true that a single case (or multiple cases) is not chosen based on statistical procedure such as a sampling technique.

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