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Author(s)	Negoro, Tatsuyuki
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# Business Model Analysis as a Systems Approach

Tatsuyuki Negoro

School of Commerce, Waseda University  
1-6-1, Nishi-Waseda, Shinjuku-ku, Tokyo, 169-8050, Japan  
negoro@waseda.jp

## ABSTRACT

A method of business model analysis is proposed in this paper. This business model analysis is an application of the Soft Systems Methodology (SSM). Strategy model is a kind of root definition and the context is a kind of declaration of Weltanschauung (W).

**Keywords:** Business model, Context, Soft Systems Methodology, Root definition, Weltanschauung

## 1. WHAT IS BUSINESS MODEL?

This paper discusses a framework for analysis of business models as a systems approach.

The term “business model” is very frequently used in a variety of texts. One example is the “business model patent.” The business model in this paper, however, is different from what is meant by the business model used in “business model patent.”

“The business model” referred to is a model with which you express what business activities you are engaged in or what kind of business you project into the future. It is sort of an abstract blueprint of an undertaking. However, it is not on a parity with “business concept” because when you are building up a business model to examine your business plan, you cannot communicate the model as sweepingly as when you communicate a business concept to others. The paper insists that you cannot express the core part of your business activities without the clarification of at least the three sub-models argued below. Business concept, on the other hand, can be referred to as a kind of watchword to convey the idiosyncratic part of the strategy sub-model defined below.

## 2. Three sub-models

The three sub-models minimally required based on the author’s practice to conceptualize a business are the strategy model, the operation model and the profit model. They are explained in details in the following. Depending on the nature of an industry and specific industry segment, other sub-models should also be

examined in addition to the three sub-models. Also in most businesses in their planning phase, analysis only by the three sub-models will not be sufficient. Some supplemental sub-models are needed; Market model to describe the current and future structure of the market demand and its characteristics, and features of prospective customers, Competition model to describe how to compete with rivals and new entrants, Supply chain model to describe whom to choose as a partner and what relationship to build with that company, Community model to describe what relationship to establish with user communities, etc. It should be noted that they are not exhaustive and in certain cases it may be necessary to conduct a more extensive analysis by using some other sub-models.

### 1) Strategy model

This is a model to portray which customers to address with what product bearing what appeal. In other words, it tells who will be the targeted customers, what will be the product marketed, how it should appeal to the customer, and what will be the core resources of the business.

### 2) Operation model

This is a model to illustrate the basic structure of operation to implement the strategy model. This sub-model basically facilitates the consideration of how operations should be carried out. What is supposed to be examined here includes what part of the operation should be outsourced, how to develop an information system to support the operation, what business procedures should be introduced to realize the operation, etc.

### 3) Profit model

This is a model to describe the mechanism of generating earnings and the cost structure behind it, which demonstrates how to secure profits from business activities. Any business in a capitalistic society cannot keep going without making profits. This is the reason why this sub-model is required. It is designed to show what earnings are projected, how, from whom, with what unit price set.

In the case of an Internet based business, there is an often-argued model of earnings. It is a model that

generates revenue not from the user of the service but from the companies that put their advertisements on the web site. This is the one referred to as a free service type business model, which is prevailing in the internet. A business model analysis should address not only the revenue side of the business but also the expense side because a business, to be viable, must have a pattern of expense flow that is justifiable under its revenue flow. The term “business model” is sometimes used as a term that means “an arrangement to make a profit.” The term used this way is considered to refer to the profit sub-model discussed here.

### 3. THE CONTEXT OF THE MODELS

Every business model and sub-models exist in a context. There is no business model without it. There is no business model that serves unconditionally. A business model holds good only when it fits in the context. When you build up a business model, it is not sufficient to pursue such sub-models as the one concerning targeted customers, business resources, attractiveness and the like. It is essential that you have an insight into the context or assumption that underlies your business model. You cannot afford not to clarify the context.

What makes a business viable is the certainty of the context. It should be emphasized that there is no context that is always true.

There is, for instance, an ISP business model free of charge that currently pays. This is because margin from telecommunication company flows in from the subscribers who access to the service. It is obvious that this business model completely fails if the industry climate is shifted towards the one in which telecommunication company itself provides Internet Services free of charge. A lesson we learn here is that there always is a possibility for a context to turn untrue as time goes by.

To formulate a new undertaking plan is to create a business model projected in the future based on a hypothetical context.

A concept referred to as “context” means, to be exact, something that “justifies the cognizance, decision and action.” While it is true that a person’s cognizance and action are limited by the context he/she stands on, it is also true that they can change or enhance the context conversely.

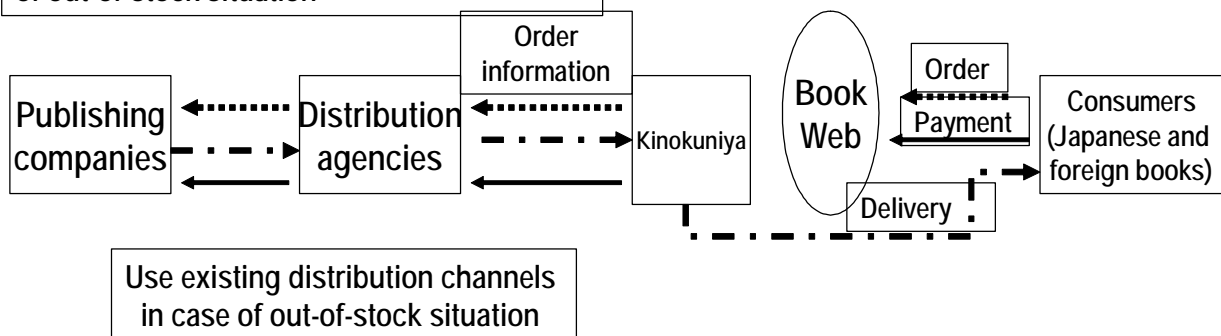
A context supporting a business model increases the efficiency of the model by getting business areas focused, but on the other hand it puts restrictions on business expansion. Changes in a context inevitably

#### The Operation Model of Kinokuniya’s BookWeb

- An Internet bookshop aiming at extending the market
- Incoming orders via the Internet are in principle fulfilled with shipment from store inventory
- Place orders to distribution agents in case of out-of-stock situation

Attractiveness:  
Quick delivery if stock is available

Resource:  
Shop front inventory



(Source: Negoro/Ogawa - 2001)

occur whenever cognizance and action become unfit for the reality. By turning the tables on this fact, it is wise to proactively cause changes to a context always at an early timing so that you can sustain the success in your business.

#### 4. BUSINESS MODEL AND RESOURCES

Business operation is not made possible until you secure management resources. Management resources include not only a company's own resources (composed of human resources, technology, facilities, information systems, etc.), but also management resources that suppliers as partners have, and even the customers have that your company has accumulated so far. While management resources keep the company going through competition, they can restrict the way when you want to change business directions in some cases. Realization of a new business plan requires securing of resources to facilitate the attractiveness expressed in the strategy model and implementing operations that realize the strategy model effectively and efficiently. In other words, business operation is not made possible until you secure management resources needed.

People speaking well of "management without resources" argue that it is not wise to retain a

company's own resources. This is not right. That is a question of degree, namely, it is a question of how much and in what breadth you should keep your own resources, but you can not run a company empty handed.

Misumi that is said to outsource every operation is often referred to as a champion of "management without resources." However, the fact that company staff who devise the business model for the company play vital roles as in-house resources.

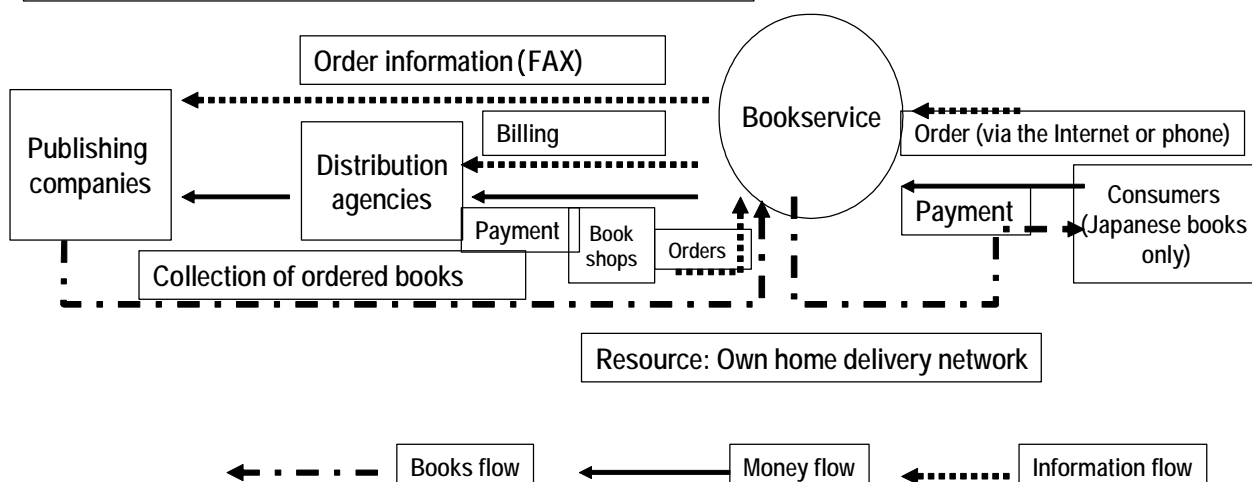
Mr. Masayoshi Son, the leader of Softbank group, says in a book that all he needs to run a company with in an ultimate company image is "one personal computer and a corporation that has him as a single registered employee." Even in this case at least his brain exists as a resource involved. No one will dispute now that it is meaningful to put a limit on the "scope of the possession," but "management without resources" is nothing but a futile slogan.

Your business will fail to fly if you do not accumulate management resources, which are there to empower your company against your competitors. Without superior management resources in your hand, you cannot stay competitive in the market any way although it may make sense to scrutinize the breadth of resources to own.

### The Operation Model of Kuroneko's Bookservice

- Business of a Yamato Transport's subsidiary
- Get books on Internet-order directly from publishing companies without intermediary of distribution agencies
- But, use distribution agencies for billing etc.
- Accept orders from bookshops too

Attractiveness:  
Quick delivery of  
books from small and  
medium publishing  
companies



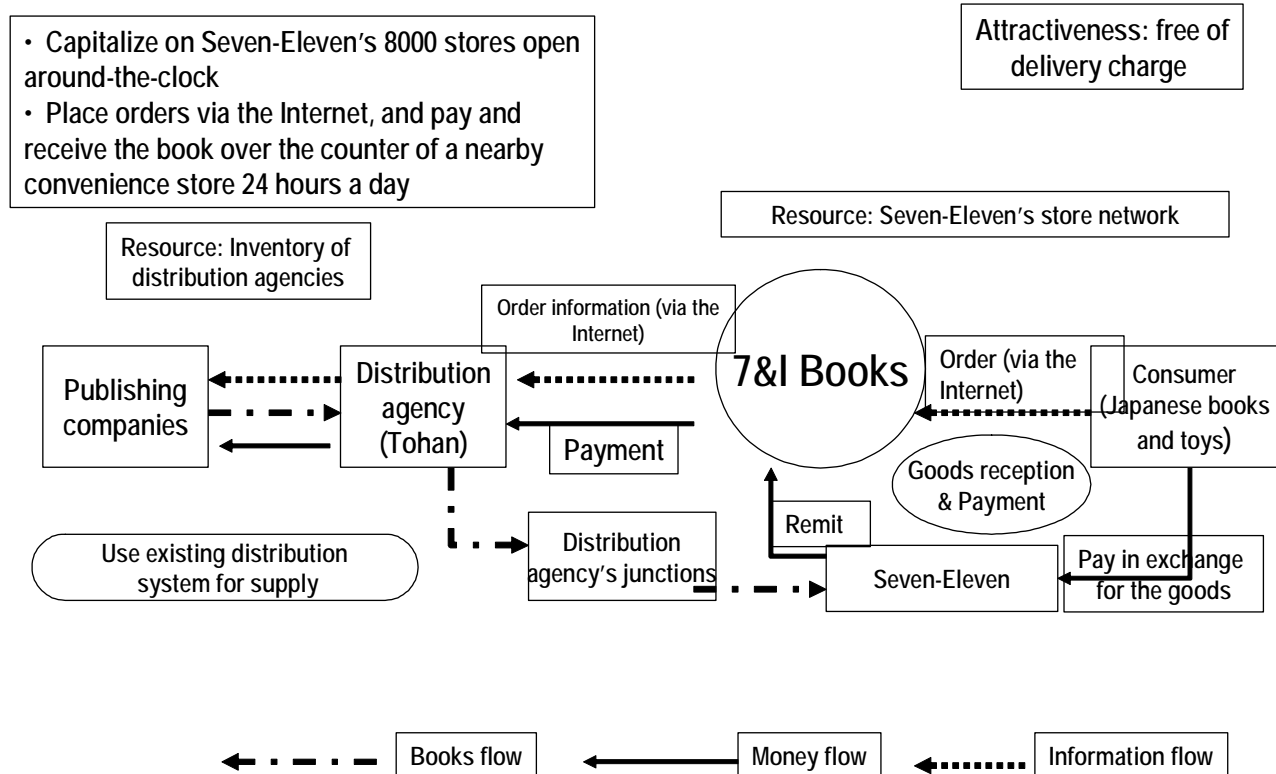
## 5. A COMPARISON OF BUSINESS MODELS OF INTERNET BOOKSHOPS

In what follows, an analysis of business models by using Internet bookshops is demonstrated as a case study. Three shops for this purpose are picked up. They are Kinokuniya's BookWeb (bookweb.kinokuniya.co.jp), Yamato Transport's Bookservice (www.bookservice.co.jp), and 7&I Books (www.7andy.jp).

The Internet bookshop at the top of sales rankings in Japan as at 2000 was Kinokuniya, which started its business in October 1996. The company cleared 1.5 Billion yen in 1999. Kinokuniya's database is known to be the most detailed one in Japan. They originally started creating it to control inventory of books on the store shelves, which they later exploited for the application of BookWeb. Therefore, their detailed database, even covering out-of-print books, played an important role as a management resource. It is said that the number of books registered in the database of amazon.com is roughly three million. Kinokuniya compares favorably with amazon on that account if you count foreign books.

The business model of Kinokuniya is characterized by

### The Operation Model of 7&IBooks



its shipping operations. As much as 75% of incoming orders via the Internet are fulfilled with shipment from the store inventory of the Shinjuku Main Store and Shinjuku South Store. If Kinokuniya issued orders to book distribution agents such as Tohan and Nippan, every time they received a customer order, it would take an unbearably long time to fulfill customer orders. Kinokuniya's fairly short lead-time is realized by real inventory at the shop front readily shippable. In conclusion, Kinokuniya has a great management resource, and that is the brick-and-mortar bookstore, which they exploit to make BookWeb attractive. However, 25% of orders which cannot be fulfilled with the shipment from the shop front inventory create a weak point because their delivery gets relatively late. It is not rare at all that the delivery takes more than one week, inconveniencing the customer and the shop. It is assumed, to illustrate the problem, that one of five different books in an order is not shippable from the real inventory. Kinokuniya ships four of the five anyway leaving the one book for later delivery in a separate package. Since the customer is not happy with getting charged for extra shipping, Kinokuniya charges nothing for the second and any follow-on deliveries, if there is any, on a single order. As the bookshop, not an operator of its own transportation network, uses distribution services of an outside company, shipping

costs on 25% of orders become losses out of the company's own pocket. This is a structural shortcoming involved in this specific business model.

A core management resource that Kuroneko (Yamato Transport) possesses for its Bookservice is its own home delivery network infrastructure. While Kinokuniya's BookWeb is said to be doing below-cost sale if initial investment is counted, Kuroneko is reportedly making profits in spite of the lower sales they achieve. This is because Kuroneko's cost structure is advantageous. They use a database of limited capability at best.

It seems that Kuroneko's Bookservice was intentionally designed without concern for people who need a book search service before buying books. Another characteristic of their business is that they do not have an inventory. Kuroneko takes advantage of their delivery network infrastructure for the realization of short lead-time delivery. That is, when they received an order for books they dispatch one of their delivery vans moving around the city for goods delivery and collection services any way directly to the publishing company to fetch the books on order. Kuroneko is more dependable than Kinokuniya in the delivery of books

published by small and medium publishing companies and technical books because those books are apt to be out of stock in Kinokuniya store shelves.

Delivery lead-time of Kinokuniya varies widely depending on the availability of shop front inventory, whereas that of Kuroneko Bookservice is kept relatively short without much fluctuation, which is facilitated by an infrastructure that is the home delivery network. If you visit Web sites run by small and medium book publishing companies you will notice that the number of sites that have a clickable banner of Kuroneko's Bookservice is on the increase. Presumably this is because publishers see merits in having Bookservice used by consumers.

7&I Books has a distribution network. The company is a joint corporation invested in by Yahoo! Japan (51%), Seven-Eleven Japan (31%), SoftbankBB (10%), and Tohan (8%). A conspicuous trait of the business of this company is that users can pay the price and receive purchased goods at any of approximately 10,000 Seven-Eleven stores deployed all over Japan. Since Seven-Eleven stores are open around the clock, the user can fetch the book from a nearby store at night and pay

## A comparison of Strategy models (for Internet bookshops)

As at 2000 Summer

	Kinokuniya's BookWeb	Kuroneko Yamato's BookService	7&I Books
<b>Customers</b>	General consumers (no segmentation)	General consumers (of Japanese books)	General consumers (of Japanese books)
<b>Functions</b>	Search, Order, Deliver	Search (depends on other companies), Order, Deliver	Search, Order, Deliver
<b>Products</b>	Books (Japanese and Foreign)	Books (Japanese)	Books (Japanese) and Toys
<b>Competitors</b>	Brick-and-mortar bookshops, other Internet bookshops	Brick-and-mortar bookshops, other Internet bookshops, publishing companies (direct order)	Brick-and-mortar bookshops, other Internet bookshops
<b>Price &amp; delivery</b>	Delivery 480 yen, shortest 4 days, average 1 - 2 weeks	Delivery 380 yen, 4 - 7 days	Delivery free of charge, shortest 2 - 3 days
<b>Other Attractiveness</b>	Enriched database, fast delivery of books available in store inventory	Quick collection from publishing companies, option of cash on delivery	Receiving and paying over the counter of convenience store 24 hours a day
<b>Resources</b>	Inventory of real stores and inventory control system	Distribution network for home delivery services	Seven-Eleven's store network, inventory at distribution agencies, system development capability of Softbank, and Yahoo's customer allurements
<b>Context</b>	Most of orders are fulfilled with own inventory at shop front	Limited capability of search system is not a show-stopper	Consumers do not mind going to convenience stores to fetch goods

for it then and there. There is no need to prepay, so there is no need to use a credit card. How it works is, you place an order via your personal computer, the system responds with a payment slip with a bar code, you get it printed by your PC printer, then you go to a Seven-Eleven store with the slip, there a store clerk scans the slip with a bar code reader and you pay the price to complete the transaction. 7&I Books uses the book inventory of Tohan. It is a daily routine of Tohan to distribute magazines to Seven-Eleven stores. So all the company has to do is just to load ordered books on the supply truck. Thus the company can keep the distribution cost relatively low, which is the strength of 7&I Books' management resources made of 10,000+ stores combined with Tohan's distribution system.

From a consumer's point of view one of the attractive factors to choose a Web site for book shopping is charges for delivery. In Japan bookshops are not allowed to discount book prices like amazon.com does, because the book publishing industry is bound by the resale price maintenance law. Therefore, a key to differentiation hinges on charges for book delivery. As of September 2000, 7&I Books is the lowest as it is free

of charge, then comes Kuroneko with 380 yen followed by Kinokuniya with 480 yen.

The business models of the three companies are different in their contexts. In the case of Kinokuniya its business model holds good only if its context is true that they can fulfill most of customer orders with their inventory kept at their brick-and-mortar stores. Therefore, if customer orders for technical books increase this context would possibly go wrong. In the case of Kuroneko, the context to support its business model is that its limited book search capability would not become a critical disadvantage. If people's book buying behavior invariably starts from book searching actions, Kuroneko's Bookservice may go out of business. The context to underpin the business model here is that there always is a segment of consumers that does not depend on searching system when buying books. In the case of 7&I books, the business model can not be successful if consumers mind going to convenience stores to fetch books even for free charge of delivery. In reality, the company has not gained enough number of customers.

### Comparison Between RD and SM

Root Definition (SSM)		Strategy Model (Negoro)	
C 'customers'	the victims or beneficiaries of T	Customers	the beneficiaries the business unit provides the functions of its product or service
A 'actors'	those who would do T		(the business unit)
		Competitors	the other players the beneficiaries compare with the business unit
T 'transformation'	the conversion of input to output	Functions	the needs met by the product or service
		Other Attractiveness	the items the beneficiaries compare the reasons the beneficiaries selects the product or service of the business unit
		Price	the price policy of the product or service
W 'Weltanschauung'	the worldview which makes this T meaningful in context	Context	the premise or assumption why this SM is feasible the sense of value why the SM is desirable
O 'owner(s)'	those who could stop T		(the company)
E 'environmental'	elements outside the constraints' system which it takes as given	Resources	the visible and invisible assets and capabilities the company has kept going through competition

## 6. ROOT DEFINITION AND WELTANSCHAUUNG OF SSM

Soft Systems Methodology (SSM) is a learning system to improve a situation in the way the people involved participate in the situation. The root definition is a starting point in the SSM process. CATWOE is an acronym of the elements which root definitions of SSM are required to contain. Among the CATWOE elements, T and W are considered to constitute the core components (see Checkland and Scholes (1990), p.35). W, or Weltanschauung, is usually translated as the "world view" in English. CATWOE serves as a tool to evaluate the root definition, which usually takes the form of a sentence.

### 6. 1. Comparison between RD and SM

The strategy model (SM) is a kind of RD. If you see the comparison table, CATWOE is kept in the elements of SM. The actor and owner is not explicit in the SM but obvious. The elements of attractiveness and price are sub description of the function which is corresponding to the transformation of RD.

### 6. 2. The Meaning of W of SSM

Checkland and Davies (1986) describe Weltanschauung in SSM as follows:

1) Weltanschauung in SSM does not refer to the actual

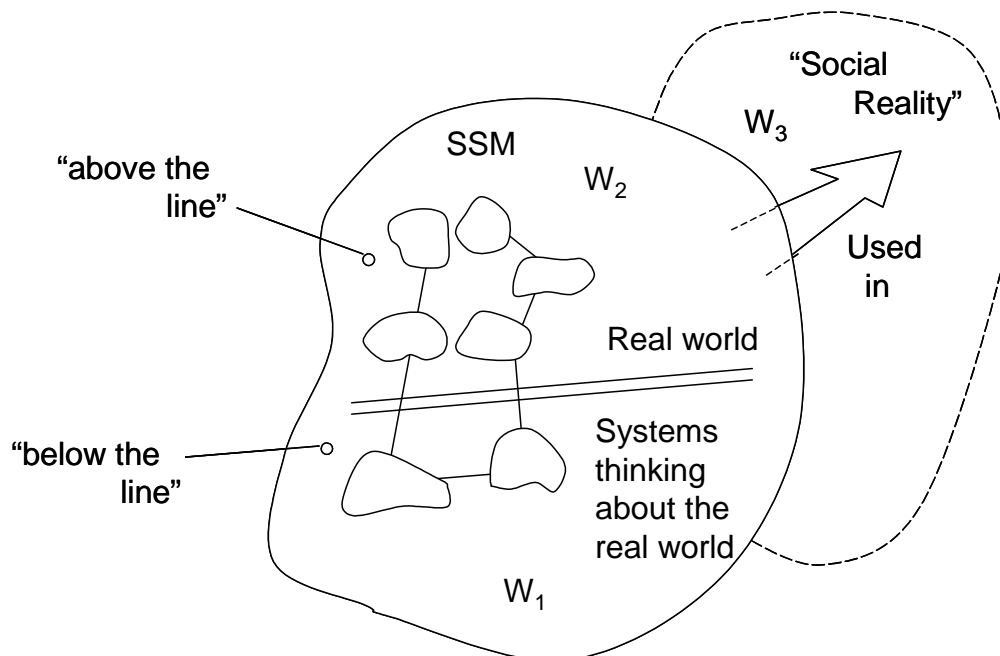
psyche of the participant in a given situation. That is, it does not represent a concept by which people's action or speech may be analyzed to clarify value systems or assumptions they currently hold. (Author's note: There probably is no "must" relationship. i.e., The Weltanschauung "does not necessarily have to" reflect the inner psyche of the participants in the situation.)

2) Weltanschauung in SSM is a concept that enables the observer to acquire better understanding of the situation. (Author's note: If W is considered useful in understanding the situation; it is valid, regardless of whether or not it coincides with the actual inner psyche of people.)

3) SSM regards the "social reality" as "a process in which participants (in the situation) continually interact and influence with each other with regard to the perception and interpretation of the world." This view serves as a premise to define Weltanschauung in SSM

4) Weltanschauung in SSM has three meanings (see the Figure):

W1: W1 is not directly related to the dynamic communication process which constitutes the social reality. It is a "taken-as-given set of assumptions about the world" that makes a particular root definition meaningful. As such, W1 should be made as consistency and simple as possible. It is nothing but a tool employed, together with other CATWOE elements, to build conceptual models based on the root definition. (And a debate deriving from a comparison between these conceptual models and observed reality yields



(Checkland, P. and Davies, L., The Use of the Term 'Weltanschauung' in Soft Systems Methodology, Journal of Applied Systems Analysis, Vol. 13, 1986)



ideas that lead to improvement of the situation.) Thus, W1 should be considered as an assumption which the observer of the situation adopts for analytical purposes. In other words, W1 is an assumption that mediates the understanding of the observed situation.

W2: W2, always existing in the plural, is a set of implicit assumptions that are adopted as premises based on which certain "purposeful activities" in a particular situation are selected to serve as a system that brings about improvement of the situation. In other words, W2 is a premise the SSM participants introduce into the SSM process.

W3: W3 shares W2's complex and dynamic (always on the move) characteristics. It, however, differs from W2 in the following aspect: While W2 is related only to the world identified as a problem situation, W3 is related to the social reality, whose boundary can expand infinitely. Thus, W3 is more complex and more dynamic than W2. W3 represents (all) interpretations of the world held by individual actors under the situation, whereas W3 serves a premise for communication among participants in the situation.

5) To avoid confusions among W1, W2 and W3, it might be advisable to designate W1 (W in CATWOE) as W, instead of Weltanschauung.

6) SSM users, i.e., observers in the SSM process, are at the same time participants in the situation. W1 provides the SSM users with a starting point toward clarifying the root definition, making conceptual models, and comparing them with the perceived real world. Such comparison enables the users to enquire into W2 and W3, and cause changes in the situation.

### 6. 3. The Meaning of Context of SD

The context of SM is a kind of W1. Therefore the expression can be simple and should be uncontradictory within the context. W2 is premises to be argued in the process to discuss the appropriateness of the SM. W3 is all the interpretations of the world held by the players in the industry. If W1 is considerably contradictory to W3 of their segment, the business can not be successful.

## 7. Conclusion

The business model analysis is an application of the Soft Systems Methodology (SSM). Strategy model is a kind of root definition and context is a kind of declaration of Weltanschauung (W). W provides the SSM users with an assumption point toward clarifying the root definition, making conceptual models, and comparing them with the perceived real world. Although the elements to define them are slightly

different, strategy model is equivalent to root definition, and context is equivalent to Weltanschauung or W1 to be exact.

## REFERENCES

- [1] Checkland, Peter and Jim Scholes, *Soft Systems Methodology in Action*, John-Wiley, 1990.
- [2] Checkland, Peter and Linda Davies, "The Use of the Term 'Weltanschauung' in Soft Systems Methodology," *Journal of Applied Systems Analysis*, Vol. 13, 1986.
- [3] Negoro, Tatsuyuki and Sachiyo Ogawa, *Seiyaku Sangyo no Mirai Senryaku*, Toyokeizai, 2001. (In Japanese)
- [4] Negoro, Tatsuyuki and Makoto Kimura, *Net Business No Keiei Senryaku*, Nikkagiren, 1999. (In Japanese)
- [5] Negoro, Tatsuyuki, "A Potentiality of Soft Systems Methodology as a Device of Intervention on Strategy formulation," *CEMIT92/CECOIA3*, 1993.
- [6] Negoro, Tatsuyuki, "Soft Systems Methodology Niyoru Jiggyo Teigi no Saikouchiku," *Diamond Harvard Business Review*, 1991. (In Japanese)
- [7] Ono, Keinosuke and Tatsuyuki Negoro, *The Strategic Management of Manufacturing Businesses*, 3ACorporation, 1992.