Idealization-based Marketing with Global Market Ceiling for Global Ecology: Automobile Industry as Example

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Abstract

Humankind faces a fundamental conflict between global ecology and marketing-oriented consumption culture. Incremental improvements in marketing for the unlimited global market, will probably not do enough to take us away from various global ecological crises circa 2025. The author proposes idealization-based marketing, with the world automobile industry as an example. 1. Idealization of the automobile society; 2. Idealization of the world transportation system including the automobiles; 3. Global ceiling on the total number of automobiles that can exist worldwide; 4. Global ceiling on the annual total automobile production; and, then, 5. Free competition among the automobile manufacturers within the cohesive idealized global images of the automobile society, and the automobile production ceiling above. Further, the author proposes idealization-based marketing for various other product categories. Current marketing practice of free competition in the unlimited global market must be changed now. "Failure is not an option" in our war in global ecology.

Keywords:

management, idealization-based marketing, idealized systems design

1. Statement of Problem: Strategically We Are Losing the War in Global Ecology

- 1.1 It is often said that when you visit India or Pakistan, your worldview changes. That happened to the author upon visiting Islamabad to Peshawar in the northern Pakistan some fifteen years ago. Children have good eyes. People seem to have a simple but rich life. In a sharp contrast, people in the downtown Tokyo business district might have material wealth and convenience of modern life, but the author could not think of something that only the Tokyo business district people have but not the people in the northern Pakistan. This experience triggered a question about the current consumption-oriented society and marketing.
- 1.2 Today, there are numerous proposals and action plans for global ecology, based on the current state (or near past) as the reference point and trying to make improvements from it. In other words, these proposals are incrementalism. For example, the global carbon dioxide reduction target based on the 1990 emission level. The author argues that the seriousness of our environmental problems far exceeds what we can do with incrementalism alone. Unless we make a drastic shift in our worldview and lifestyles, by 2025 humankind might be facing serious global crises related to ecology, such as water and food shortage, severe climate fluctuations, etc. Schumacher [Schumacher (1986), pp. 226-27] stressed the urgent need for systemic designing of the humankind future more than a decade ago.
- 1.3 The 1997 Kyoto Protocol on Climate Change calls for 5.2 percent reduction of global greenhouse gas emissions during 2008-12 from the baseline of the 1990 emission level. However, the reality is that humankind is producing more emissions globally even after we realized the current global warming problem: "Global emissions from fossil fuel combustion rose by 9.1 percent between 1990 and 2000. Cumulative global emissions between 1990 and

- 2000, slightly over 68 billion tons, reflects a 15-percent increase over the 59 billion tons emitted worldwide between 1980 and 1990." [World Watch Institute (2002), p. 34]
- 1.4 Regarding the magnitude of the humankind task for global ecology, Weizsaecker et al. [Weizsaecker et al. (1998), pp. 334-35] indicates, "In order to understand the magnitude of the problem, first of all, we need to remember our consensus based on the IPCC formula that in total, we need to achieve 60% reduction of gas that causes global warming-effects."

1.1 No Shared Vision

1.1.1 Brown [Brown (2001), p. xv] is concerned about our lack of vision for our desirable future: "At present there is no shared vision even within the environmental community, much less in society at large. Unless we have such a vision of where we want to go, we are not likely to get there.... We are winning occasional battles now, but we are losing the war because we do not have a strategy for the systemic economic change that will put the world on a development path that is environmentally sustainable." [Brown (2001), p. 81)] (Underline added by the author.)

1.2 Not One Country Has a Strategy

1.2.1 Brown [Brown (2001), p. 1] further points out that not a single country has yet to develop a nation-wide strategy for ecology: "Although the concept of environmentally sustainable development evolved a quarter-century ago, not one country has a strategy to build an eco-economy-to restore carbon balances, to stabilize population and water tables, and to conserve its forests, soils, and diversity of plant and animal life." [Brown (2001), p. 81] (Underline added by the author.) The author argues that the problem is not only with the public sector, but also the private sector. If we consider the global impacts of marketing and consumption culture, corporations, besides governments need to develop global strategies for changing our consumption orientation.

2. Idealized Systems Design (ISD) Steps and Importance of a Larger Systems Perspective

- 2.1 In Russell L. Ackoff's Idealized Systems Design (ISD) as well as the author's Social Systems Navigation (SSNV), the systems designers are to: identify the "mess" or the "problematique," that is a system of the fundamental problems in the appropriate system level; identify self-imposed constraints among the stakeholders of the system in concern; and, dissolve the problem by idealizing the desirable state. [Ackoff (1978) and (1999), and Horiuchi (1994)]
- 2.2 ISD (and SSNV) is a social systems planning paradigm that has several steps: (1) Situation Analysis at the appropriate, high enough systems level for the problem in concern and formulate the mess or problematique; (2) Reference Projection which is to project the current state of the system to the future without any intervention, in order to identify the fundamental problems of the system in concern; (3) Formulation of Ideal Images of the system in the future state (for example, idealized future of humankind); (4) Defining Goals that will take the system as close as possible to the ideal state; and, (5) Design of Enabling Systems to attain such goals. [Ackoff (1978) and (1999)]
- 2.3 ISD has several advantages over the incremental planning such as:
- 1. It is easier to reach a consensus among the systems designers on the idealized state in the future away from the current state of the problem, compared to reach an agreement on the projected future state in the incremental planning.

- 2. Through the ISD process, the systems designers can develop perspectives they have not had before
- 3. In ISD, the systems designers realize that future is not a subject of forecasting, rather, a subject of design. The future is not something we predict from the present state. Rather, the future is formulated by our actions from the present until that time in the future. [Ackoff (1978) and (1999)]

This paper follows several ISD steps starting with the Situation Analysis, followed by Reference Projection, Problematique, and Formulation of Ideal Images.

3. Situation Analysis

3.1 Situation Analysis Defined

3.1.1 In the Situation Analysis phase of ISD, the systems designers will grasp the fundamental nature of the problem without preconditions, at the appropriate, high enough systems level. [Ackoff (1978)] Here we collect facts and theories that demonstrate fundamental conflicts between the current marketing-oriented consumption culture and global ecology.

3.2 Shortcomings of Free Market Economy and Marketing

3.2.1 Weizsaecker et al. [Weizsaecker et al. (1998), pp. 433-34] lists shortcomings of the contemporary market economy: "What the free market cannot do are the following three: Determine the self-sustaining capabilities of the planet Earth; Indicate which consumer wants are essential needs, and which are demands of luxury nature; To clarify at what point need satisfaction ends, and limitless desire begins." (Reverse translation from Japanese to English by the author. Underline added by the author.) Hence, as we will see below, an essential problem of the current marketing practice is its "Customer is always right" attitude, because the customers and the marketing people seem to be in an endless loop of confusion between essential needs and luxury demands. Meanwhile, the planet Earth stands speechless, while the customers and the marketing people are consuming precious time left for global ecological recovery.

3.3 Marketing and Societal Marketing Defined

3.3.1 Philip Kotler defines marketing as, "A social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others." [Kotler (2001). p.6] Over the years, from such a marketing concept, the societal marketing concept was developed to accommodate the consumer's and the society's long-term interests. Kotler [Kotler (2001), p. 70] defines societal marketing as: "A principle of enlightened marketing that holds that a company should make marketing decisions by considering consumers' wants, the company's requirements, consumer's long-run interests, and society's long-run interests." The author argues that such a process in expanding the marketing concept is incrementalism. For, the marketing concept in its essence--whether it is marketing or societal marketing--is based on the free competition in the unlimited market, trying to maximize each individual company's profit. In many product categories, no one seems to be in charge of watching the balance between the total global demand for a certain product category and global ecology.

3.4 Consumption Society as Historical Anomaly

3.4.1 "Historically, the consumption society has not been around for long. Rather than a simple, modest life, consumption is an anomaly of value systems for humankind. Consumption-oriented lifestyle is indeed an extreme deviation from thrift-orientation that humankind has been developing over centuries." [Durning (1999), p. 157] (Reverse translation from Japanese to English by the author.)

3.5 Problematique: Limitations of Contemporary Marketing from Global Ecological Systems Viewpoint

- 3.5.1 In today's consumption society, marketing has significant impacts not only on people's consumption, but also lifestyles and life goals. There are contemporary marketing practices such as one-to-one marketing, relationship marketing, etc. Yet, for the consumers concerned about the seriousness of the global ecological issues, these marketing talks might sound like "The road we have taken before." Current marketing practices seem to convey a contradictory message to the consumers: Hit the gas pedal (Consume more.) and then hit the brake pedal (Be ecology-minded, and do not waste.) at the same time. Marketing people, on the one hand stimulate consumption, and at the same time, discourage "excessive consumption." If that is the case, it is time we need to develop new perspectives in marketing.
- 3.5.2 Uchihashi [Uchihashi (2000), pp. 171-72] describes conscious, ecology-minded consumers who have stopped dancing with the marketing people's music and writes: "People have already started rejecting short-cycle marketing practices. They do no longer replace their goods with newer models. Ecology-minded consumers are ahead of the structural reform of the Japanese economy." (Japanese to English translation by the author. Underline added by the author.)

4. Reference Projection (RP)

4.1 Reference Projection Defined

4.1.1 Reference Projection is a step of ISD between the Situation Analysis and Formulation of Idealized Images. RP is to project how the system in concern breaks down if the people leave the system as is without doing anything about it, and let it function as it does now. Therefore, RP is not a forecast or prediction of the future, but a projection of an outcome, the worst state logically possible, but which is unlikely to happen. RP helps the systems designers to understand the essential problems of the current system in concern. [Ackoff (1978) and (1999)]

4.2 We Cannot Afford "Fossil-fuel-based, Automobile-centered, Throwaway Economy" in Global Scale

- 4.2.1 What we can see from the Situation Analysis is that the current marketing system and the consumption culture not only cause heavy burden on the environment, but also strongly motivates humankind for a consumption culture and economic development. "There is flood of information on enchanting and fascinating consumption culture started in the U.S. Fascination for such a consumption culture exists in all the remote lands in Africa.... My friends in developing nations want the Japanese to think: Japanese invent many wonderful things, but please consider how miserable our life became, longing to obtain such wonderful goods." [Ishi et al. (1992), p. 140] (Translation from Japanese to English by the author.)
- 4.2.2 Yet, we know it very well that the planet Earth cannot possibly afford luxury of western, industrial consumption culture for the entire humankind. Therefore, if we continue the

current incremental marketing without defining our ideal state of our future, we cannot dissolve our fundamental conflict of the consumption culture and limited capacity of our planet Earth. [Horiuchi (1998)]

- 4.2.3 Even if automobiles with quite low emission levels are developed, due to limitations in natural resources and environmental capacity, it is impossible for the entire humankind to own and use automobiles. For example, if dwellers of large Chinese cities own and drive automobiles for about the same annual distance as the contemporary Americans, their carbon dioxide emission alone will exceed one billion tons a year, which is roughly equivalent to the total annual carbon dioxide emission from all forms of transportation of the world now. [State of the World (1999), p. 143]
- 4.2.4 "If the <u>fossil-fuel-based</u>, <u>automobile-centered</u>, <u>throwaway economy</u> will not work for China, then it will not work for India with its 1 billion people, or for the other 2 billion people in the developing world. In a world with a shared ecosystem and an increasingly integrated global economy, it <u>will ultimately not work for the industrial economies either</u>." [Brown (2001), p. 18] (Underline added by the author.)
- 4.2.5 Japanese journalist Kajiwara and motor journalist Tokudaiji [Kajiwara and Tokudaiji (1993), p. 166] state, "The mass production and mass consumption cycle is already nearing its limit. Even if we create small-quantity production systems tailored for individual consumer's preferences with fine-tuned market-segmentation, their sum is still mass production.... Unless we drastically change the consumption patterns of us humankind, we will create a situation where very survival of us humankind will no longer be guaranteed." (Translation from Japanese to English by the author.)

4.3 Conflict of Global Ecology and Global Consumption Culture

- 4.3.1 If humankind continues our current consumption-culture, we will hit the walls:
- 1. The Earth does not have sufficient resources for the entire humankind to enjoy such a consumption-oriented society; and,
- 2. Unless humankind makes a stand for the wellbeing of the whole Earth and its stakeholders, sooner or later the markets and the companies will become unable to balance their short-term profit and the long-term wellbeing of us all.

4.4 Global Ecological Crises Circa 2025?

4.4.1 According to several ecologists, our global ecological problems will become much more serious than the public vaguely senses. For example, Konishi writes, "By around 2010, malnutrition population increases in developing nations. For this crisis, the world, led by the developed nations will try to increase grain production. However, by around 2025 even such increase in food production in developed nations will become unable to keep pace with the population explosion in developing nations. This will cause a major food-shortage crisis, in other words, catastrophe of food supply." [Konishi (1994), p. 226] (Translation from Japanese to English by the author.)

5. Problematique: Impact of Marketing and Global Consumption Culture on Global Ecology--Automobile as Example

5.1 Marketing people claim that they are simply satisfying pre-existed human needs. Yet, as we can see from the Situation Analysis and the Reference Projection, marketing has side effects of creating non-essential demands, and strong desire for western, industrial lifestyle all

over the world. Marketing people must realize their responsibilities in having such a strong social influence

- Another point is the marketing people's tendency to consider the global market as an unlimited market for free competition. As an example, as far as the author investigated, there is not a single automobile manufacturer in the world that takes into account the global maximum number of cars that can exist worldwide, and the total number of annual automobile production by all the world automobile manufacturers combined, <u>before</u> deciding on their company's own marketing plan. Each company is busy marketing their cars according to their own marketing plans. The total annual production figure of all the automobile manufacturers combined is merely the result of such uncontrolled sum of free competition and limitless marketing activities by the automobile companies.
- 5.3 Without taking such global issues before deciding upon each automobile manufacturer's annual marketing plan, those companies might face a criticism someday, that they are not actually practicing marketing--which is to satisfy consumers' needs--but placing their own wellbeing before the consumers' wellbeing.

6. Formulation of Ideal Images: Idealization-based Marketing

6.1 Ideal Image Defined

6.1.1 Ideal images in the ISD mean something highly difficult to attain but nevertheless we wish to pursue, which is technologically feasible and self-sustaining. [Ackoff (1978) and (1999)]

6.2 Sinking Spaceship Earth and Merry Profitable Companies Aboard

Mhen the Spaceship Earth is losing its ecological balance and starts sinking, there is not much point for each company to be merry making a profit aboard the ship. Corporate philosophy should be changed to place the global wellbeing as the first priority, rather than individual company's profit. Weizsaecker et al. [Weizsaecker et al. (1998), p. 121] states, "If we continue our effort in the same manner as we have been doing, we can achieve only so much in reduction in energy consumption.... Therefore, we desperately need a new perspective that is fundamentally different from our current measures...." (Reverse translation from Japanese to English by the author.)

6.3 Idealization-based Marketing: Need for Copernican Paradigm Shift

6.3.1 As we consider the seriousness of our global ecological issues, paradigm shift from the current marketing-oriented consumption culture should not be merely a desirable goal, but something humankind must realize soon.

6.4 Current Automobile Marketing without Global Ecological Systems Design (Figure 1)

- 6.4.1 Current automobile marketing without global ecological systems design seems to have the following nonsystemic structure:
- 1. On the highest level is global ecology, which exists without systemic interactions with automobile manufacturers' annual marketing plans, the total number of automobiles existing on the Earth or the total number of automobiles produced annually by all the manufacturers combined. In other words, there is a one-way input from the global automobile marketing to global ecology without systemic check on the former's impacts on the latter.

- 2. Global automobile market with no limit, where automobile manufacturers are engaged in free competition against one another.
- 3. Annual marketing plan of each automobile manufacturer, which each company plans without consulting with other automobile manufactures about their overall global ecological impacts. In total, there is no cohesive body to consider neither the role of automobiles in the society, nor the global impacts of the total automobile production by all the automobile manufacturers combined.

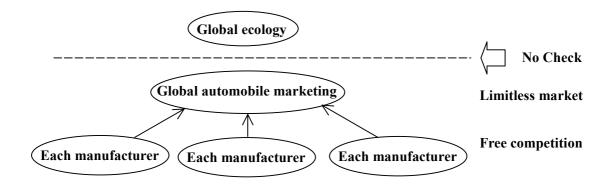


Figure 1: Current State of Automobile Marketing

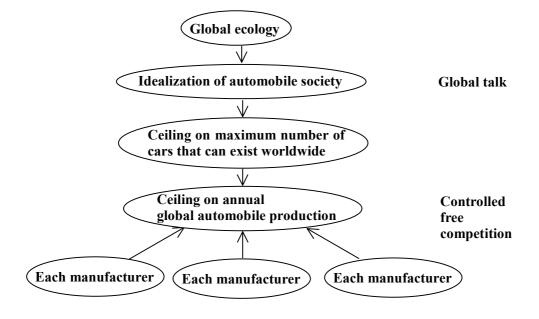


Figure 2: Idealization of Automobile Marketing

6.5 Mission Statement: Idealization-based Automobile Marketing by All the World Automobile Manufacturers Together (Figure 2)

6.5.1 Kajiwara [Kajiwara and Tokudaiji (1993), p. 58] also gives considerations to the total global limit. "Firstly, Automobile manufacturers should <u>clarify how many automobiles the planet Earth can afford to have</u>. What is the size of the pie? Until now, each automobile manufacturer produces whatever the number of cars they wish to produce. As a result, there are

- 530 million automobiles in the world now. We have to rethink and define how many automobiles we can have in the world as a total." Kajiwara made this argument as early as in 1993. (Japanese to English translation by the author. Underlines added by the author.)
- 6.5.2 In the case of automobiles, firstly, we need to idealize the role of automobiles in the society. Automobiles have significant social, cultural, economic and other impacts on our society other than its transportation function. Secondly, idealize the world transportation system including the role of the automobiles; Thirdly, idealize the total global automobile market size. How many automobiles can exist on the Earth without ecological damages? Then, we idealize the annual global production of automobiles in order to meet such an ideal state of the world transportation. After defining such an ideal state of the world related to the automobiles, each automobile manufacturer can engage in marketing their own cars, competing against each other within the cohesive idealized global images of the automobile society. The author calls it idealization-based marketing.
- 6.5.3 Automobile manufacturers of the world could establish something like, "Global Automobile Demand Adjustment Organization" which determines the maximum number of automobiles that can exist on the Earth, as well as the maximum annual global automobile production. Within such limits, automobile manufacturers can compete against each other.
- 6.5.4 It should have responsibility for the following cycle of systemic interactions:
- 1. Idealization of the roles of automobiles in the society: Ideally what roles should automobiles play in the society?
- 2. Idealization of the world transportation system including the automobiles.
- 3. Investigation on the ecological ceiling on the total number of automobiles that can exist worldwide. Reach a consensus on the figure.
- 4. Investigation on the ecological ceiling on the annual global automobile production by all the automobile manufacturers combined. Reach a consensus on the figure.
- 5. Free Competition among Automobile Manufacturers: Automobile manufacturers can engage in their marketing activities, compete against each other within the cohesive idealized global images of automobile society and the annual automobile production ceiling above.

6.6 Idealization across Industries: Idealized Lifestyles and Idealized Levels of Consumption

- 6.6.1 For the larger issue of various humankind activities and their impacts on global ecology, the author proposes that humankind needs to idealize our desirable lifestyles and consumption patterns that our planet Earth can sustain. Companies should compete against one another within mutually agreed upon global annual production ceiling for various product categories. International conference should be held on idealizing humankind lifestyles and consumption patterns, and not just incremental discussions on what to do tomorrow based on what we do today.
- 6.6.2 Brown [Brown (1999), p. 38] emphasizes, "If we want an answer to the question of the sustainable global population on the planet Earth. firstly we must know 'What level of consumption do we wish to have." (Underline added by the author.) We need to idealize our lifestyles and maximum ceiling of our various activities—across industries that consume natural resources and produce emissions. The author proposes that the new marketing concept of "idealization-based marketing" for the planned global market as a closed system with limits, rather than with an unlimited market for free competition.
- 6.6.3 We need to enlighten each company (and government) to consider its appropriate system level of the future planning not only for each individual company, but also for the global case. What we need now is demand management for various product categories at the global level. For example, we need to set up the voluntary limit on the total annual production volume and natural resource consumption for each industry. This is not demarketing, but demand

management. Corporate marketing strategies should come after these global goals for the industry.

6.6.4 The author has been stressing the need for idealized systems design for the humankind future, including the proposal of the idealization of lifestyles for 2050, and that incrementalism alone will not be sufficient. [Horiuchi (1990), (1998) and (2000)] World Watch Institute makes a similar argument: "Major advances in sustainability over the next decade will not be attained through incremental efficiency gains.... (Define) production and consumption issues more broadly than their predecessors had." [World Watch Institute (2002), p. 22] (Underline added by the author.)

6.7 Role of Mass Media and Advertising for Changing Consumption Society

- 6.7.1 Katsura et al. [Katsura et al. (1997), p. 166] discusses relations between mass media and mass consumption, "Mass production-mass consumption cycle is nearing its limit. Even if we manage to establish small quantity production system for highly segmented markets, its total outcome is still mass production.... Unless we change our mass consumption style, we will cause a situation where the survival of humankind will no longer be guaranteed."
- 6.7.2 Furthermore, he points out: "Advertising in the multimedia age must change its role from means to stimulate consumption demands, to <u>adjust production and consumption</u>. The interactive function of multimedia should not be utilized as means to capture consumers for maximum profit for corporations. Rather, it should be utilized as <u>communication means to create appropriate consumption style</u> by corporations and citizens to protect natural resources and environment of the planet Earth which is in danger." [Katsura et al. (1997). p. 167] (Translation by Japanese to English by the author. Underlines added by the author.)

6.8 Means and End Balance

6.8.1 In such idealization of marketing and lifestyles, we should take into account the appropriate balance of means and ends. For example, for what occasions do we need an automobile as transportation, which weighs several times more than one person and his/her luggage probably totaling less than 100 kilograms?

7. Dissolving the Fundamental Problem in the Future: Beyond Contemporary Systems Design

7.1 We looked at the issues of the consumption culture and marketing. As we see in the previous discussions, the western, industrial, marketing-oriented consumption culture has major impacts on the lifestyles of many people on this planet. It is time that we produce alternative perspectives other than such a consumption-oriented marketing culture. Here, we will look at a system level higher than consumption and marketing, which is systems design paradigm. At the 2002 Fuschl International Systems Conversation, the Y3K Team, working on idealizing the humankind future for Year 3000, came to a finding that our contemporary systems design (CSD) is also under strong influence of the western, industrial culture, as consumption-orientation and marketing are.

7.1 What Comes After Contemporary Systems Design: Beyond Systems Design Paradigm

7.1.1 The Y3K Team Final Report states, "While what we currently use (contemporary systems design, CSD) is often described as comprehensive, we believe that as practiced it is fixed to a particular set of assumptions relating to culture and time, whereas we are actually

faced with a wide range of possible parameters in cultural time, etc. CSD has fixed value of time and culture. It is western; industrial, in the sense that it is active (versus receptive); dynamic and imposing." [Dyer et al. (2002)]

7.1.2 "For a future in which we are seeking harmony in a global scale we are faced with a wide range of possible parameters in terms of culture and appreciation of time, which a truly comprehensive systems design process must accommodate. A new paradigm as a basis for thinking and engaging in systems work of the future is proposed. The hypothesized paradigm includes key concepts such as homeopathic design (enhancing natural 'immune systems' of social systems and synchronizing efforts with nature), as well as the embodiment of culture and time aspects." [Dyer et al. (2002)]

7.2 Systems Education

7.2.1 Another issue of higher level than consumption-orientation and marketing is education of world consumers to be aware of the "throwaway mentality" and systemic understanding of consumption-ecology interactions. Brown [Brown (2001), p. 275] writes, "We are looking for changes in the industry, shifting from a throwaway mentality to a closed loop/cycle mindset.... The big remaining challenge is on the educational front: how can we help literally billions of people in the world understand not only the need for change, but how that change can bring a life far better than they have today?" (Underline added by the author.) We need such systems education for consumers as well as the marketing people of the world so that individuals can relate their activities with global ecology.

8. Conclusion: "Failure Is Not an Option." (From the Movie, "Apollo 13")

- 8.1 We have looked at a fundamental conflict between global ecology, and marketing-oriented consumption culture. We also realized the impacts of the "Fossil-fuel-based, automobile-centered, throwaway economy" on the lifestyles of the entire humankind. As Weizsaecker, Brown, World Watch Institute and others pointed out, incremental ecological actions will probably not be sufficient for us humankind to avoid various ecological crises circa 2025. We urgently need to idealize our lifestyles on a global scale.
- 8.2 The author proposed idealization-based marketing. In the case of the automobile industry, it is a consensus-based idealization of the automobile society, number of automobiles allowed on the planet Earth, and annual total global automobile production ceiling for cohesive, coordinated marketing activities of the automobile manufacturers around the world. Contemporary marketing is based on free competition in the unlimited global market, which does not take into account the global ecological balance as preconditions for each company's marketing planning.
- 8.3 In a larger systems level, we can propose: Idealization of lifestyle and consumption patterns of the entire humankind; and Idealization of the total world market size and the total global annual production for various product categories. Each individual company's marketing plan should come only within these self-imposed limits. Beyond immediate ecological problems, we took a quick glance at the proposed new systems design paradigm beyond contemporary systems design as well as systemic education. We must act now for global ecology. "Failure is not an option." ("Apollo 13")

References

Ackoff, Russell L. (1978). The Art of Problem Solving. Wiley, New York.

Ackoff, Russell L. (1999). *Re-creating the Corporation*. Oxford University Press, New York. Brown, Lester R. (2001). *Eco-Economy*. W.W. Norton, New York.

Durning, Alan Thein. How Much Is Enough? Translated by Santoh, Y. Tokyo: Diamond, 1996.

Dyer, Gordon; Hammond, Debora; Horiuchi, Yoshihide; Otsubo, Mayumi; and, Rowland, Gordon. (2002) The Fuschl Conversation 2002: Actions and Evolutionary Guidance for Y3K: Towards a New "Meta-systems" Paradigm. *Administration and Informatics*. vol. 15, no. 1. (In printing)

Horiuchi, Yoshihide (1990). Chikyu-kibo-no Kankyo-mondai-ni okeru Risouka-sekkeino Kouken [Contribution of Interactive Systems Planning for Global Environmental Issues]. *Social and Economic Systems Studies*. 9: 70-77.

Horiuchi, Yoshihide. (1994). Social Systems Navigation. *Proceedings of the International Conference, International Society for the Systems Sciences*. vol. 38, 1231-36.

Horiuchi, Yoshihide. (1998). Idealization of Mankind for Year 2050 for World Ecology: An Application of Social Systems Navigation. *Proceedings for the Systems Research: The New Generation* (A Systems Reunion-Conference Honoring Russell L. Ackoff): 34.

Horiuchi, Yoshihide. (2000). Proposal of Virtual Transportation as an Idealized Alternative in Consumption Society. *Systems: Journal of Transdisciplinary Science*. vol. 5, no. 1-2: 61-73.

Ishi, Hiroyuki; Okajima, Nariyuki; and Hara, Takashi. (1992). *Tettei-touron: Chikyu-kankyo [Intensive Discussion on Global Ecology]*. Fukutake, Tokyo.

Kajiwara, Kazuaki, and Tokudaiji, Aritsune. (1993). Mesaki-no Rieki-shugi Kaikakuron [Proposal of Paradigm Shift from Short-term Profit Orientation]. Kobunsha, Tokyo.

Katsura, Keiji; Hattori, Takaaki; Sudo, Haruo; and, Itoh, Youko. (1997). *Multi-media-jidai to Masukomi [Multi-media Age and Mass Communications]*. Ohtsuki-shoten, Tokyo.

Konishi, Seiichi. (1994). Chikyu-no Hasan [Bankruptcy of the Earth]. Kodansha, Tokyo.

Kotler, Philip. (2001). A Framework for Marketing Management. Prentice-Hall, Upper Saddle River, NJ.

Scientific American (2000), Special Issue: Key Technologies for the 21st Century. 2000.

Schumacher, Ernst F. (1998). *Small Is Beautiful: A Study of Economics as if People Mattered*. Translated by Kojima, K., and Sakai, T. Kodansha, Tokyo.

"What Science Will Know in 2050." (1999). Scientific American, December, 1999.

Uchihashi, Katsuhito. (2000). Rouhinaki Seicho [Growth without Waste]. Kobunsha, Tokyo.

Weizsaecker, E. U. v. (1994). *Chikyu-kankyo Seisaku [From Earth Summit to 21st Century of World Ecology]*. Translated by Miyamoto, K., Kusuda, M, and Sasaki, K. Yuhikaku, Tokyo.

World Watch Institute (1999). State of the World, 1999. W.W. Norton, New York.

World Watch Institute (2002). State of the World, 2002. W.W. Norton, New York.