

NEED FOR ECOENTERPRISE AND ECOTECHNOLOGIES

Ichiro Kaneda

Niigata Sangyo University, Japan

Keywords: Innovation, entrepreneurship, administrative restriction, taxation, environmental protection services, LCA (Life Cycle Assessment), Keynesian economics, recycling, CALS (Continuous Acquisition Life-cycle Support)

Contents

1. The Development of Ecoenterprise and Ecotechnology
 2. Ecobusiness Management
 3. Social Demand for Environmental Protection Services and Goods
 4. New Demand for Ecoenterprise
 5. Five Categories of Ecoenterprise
 6. Residual-Reducing Industries
 7. Reuse and Recycling of Residuals
 8. Treatment of Residuals
 9. Recycling and the Natural Environmental Recycling System
- Glossary
Bibliography
Biographical Sketch

Summary

Ecoenterprises are needed as an externalized and independent industrial section, for more effective development of ecobusiness. They are distinguished from mere ancillary or attached environmental departments of conventional enterprises.

If enterprise is to be distinguished from mere business, it will be seen to consist not only of the pursuit of profit but also of entrepreneurship that pursues innovation. Furthermore, an important basis for innovation in ecoenterprise is ecotechnology. Another important factor for innovation is social demand.

After World War II most industrial countries in the world attained high economic growth and reached a stage of economic maturity where almost all its citizens could obtain basically whatever they wanted. Until recently, modern economic and fiscal policies have been effective in depressions, which were more or less affected by Keynesian economics, and concentrated on creation of demand through demand management or, more concretely, through money supply expansion. At the stage of economic maturity, however, if people's demand increases as the result of money supply expansion policy, they will not purchase goods at once, and the social effective demand will increase less than expected. Hence we see the social and national necessity of discovery and development of a new social demand, other than the demand for products of conventional industries.

The social demand for ecological protection services and goods is now expected to

expand. Ecoenterprise is expected to be a future big industry as are the information and telecommunication industry, medicine, and the welfare industry, including old people's welfare. The combination of sufficient social demand and ecotechnology will possibly bring about innovation for ecoenterprise.

The progress and development of ecotechnology needs not only the relevant field sciences but also many sciences at large as a basis. For instance, materials technology is related to condensed-matter physics, and the latter is further related to elementary particle physics.

What ecobusiness aims at finally is recycling. In relation to this, the idea of the life cycle assessment (LCA) is becoming popular. The LCA deals with the whole life of the product: the production and consumption processes, the residuals treatment and rebirth, from the environmental protection viewpoint. The idea of the LCA will make way for the further development of ecobusiness.

1. The Development of Ecoenterprise and Ecotechnology

For ecoenterprise to exist, ecobusiness and the management for it must be established. For ecoenterprise to develop, ecotechnology must make progress and be developed. It could be said that the establishment of ecobusiness and the progress of ecotechnology are the basis for the existence and development of ecoenterprise. Furthermore, there is the problem of social demand as an important factor to sustain ecobusiness management and ecoenterprise.

Generally speaking, if enterprise is to be distinguished from mere business or mere business management, its characteristic will be not only the pursuit of profit but also entrepreneurship that pursues innovation. Compared with that, mere business management could be routine, though necessary as a premise for enterprise. Business management itself provides a system and a method for enterprise, but no more than that. Business itself provides an economic or commercial technique for enterprise but no more than that either. Only the innovation deriving from and based on entrepreneurship is the motive for the development of ecoenterprise. Historically, the concept of innovation that is now normally used in relation to economy and management was proposed by Schumpeter, a famous American but originally an Austrian economist. An important point in discussing the development of ecoenterprise is whether there is the possibility of innovation for ecoenterprise.

From the viewpoint of economics, enterprises incessantly pursue profit, but over time the profit gradually and naturally becomes extinct through entry of enterprises from other industries. That theory, which is easily demonstrated, is called the "law of cost" and is even now basically effective, though it is by no means a new concept and is somewhat old-fashioned. Incidentally, the concept of profit referred to here means the entrepreneur's profit, as it is called in modern economics, which in turn means the margin or difference between revenue and the amount of not only prime costs like wages, material costs, etc. and supplementary costs like rents, depreciation costs, salaries for directors, interest costs for borrowed capital as from banks, etc., but also imputed costs for the enterprise's own capital net worth.

In the end, it is innovation that brings new profit, and the condition that innovation is constantly and continuously sustained form the dynamic process of the economy, which is also an important prerequisite for the development of ecoenterprise. Furthermore, an important basis for innovation in ecoenterprise is ecotechnology. There is another important factor for innovation as well as for ecobusiness management. It is social demand that gives direction to innovation. Innovation cannot bear fruit without social demand for it. The creative entrepreneur will innovate in the direction of discovery of new possible social demand and give reality to it, applying technology to the economic field including ecoenterprise.

2. Ecobusiness Management

In the first place, there is the problem of the existence rather than the development of ecoenterprise, although any enterprise, including ecoenterprise, without development might be unable to exist over a long period of time, like a bicycle that comes to standstill. However, the conditions for the existence of ecoenterprise are first considered logically. An important condition for the existence of ecoenterprise is the establishment of ecobusiness management, as earlier mentioned. So, the discussion begins with that.

To be precise, ecobusiness is different from ecoenterprise. Ecobusiness can exist in a static state that does not bring forth an entrepreneur's profit in terms of economics. So, ecobusiness can exist also in a public or state organization—the public or state enterprise—as well as in a private business—the private enterprise—although it is not appropriate to use here the word “enterprise,” now that the words “business” and “enterprise” have been distinguished from each other. It might be better to use the word “firm” or “company” instead of “private enterprise” here.

Ecobusiness itself needs a social demand for it. The general social demand for ecobusiness has recently appeared. Although post-World War II economic development brought much luxury, environmental pollution and disruption followed it. People's concern about environmental pollution and disruption has gradually been aroused, and the social demand for the services and goods to remove or dispose them has been growing, too.

That state of affairs, however, could not be said to be sufficient. The basic reason could be that most environmental pollution and disruption is externalized from the market economy so that personal and individual concern is hardly related or connected to them. Individual concern is insensitive and inactive to them, notwithstanding that negative repercussions from the natural environment are by no means little or negligible, especially recently. That is the fundamental difference between the goods or services for environmental protection and ordinary ones. Hence the necessity for appropriate social policies and administrative restriction, taxation, imposing of fines, and, on the other hand, subsidies and economic incentives. Through them, social demand for the goods and services for natural environmental protection is to be created, and will be the basis for the existence of ecobusiness and ecobusiness management.

The circumstances for that will now be discussed.

3. Social Demand for Environmental Protection Services and Goods

In this section, the circumstances for the creation and development of social demand for natural environmental services and goods will be discussed.

National administration can see and identify a greater number of and more detailed relations between human environmental behaviors and changes caused in the natural environment, and can see and identify more accurately causality between human environmental behaviors and environmental repercussions on human beings, than can individual consumers and producers. So, they regulate and impose taxes and fines on consumers and producers, for environmental protection. First, households and individuals will be discussed.

Regulations have been brought down on disposal. Residuals from a household that are not disposed of or incompletely disposed of that are discharged directly into the natural environment will cause environmental degradation and environmentally harmful repercussions. Administrative regulations and prohibition of individual discharge and disposal of the residuals, which often emit pollutant harmful substances like polychlorinated biphenyl (PCB; also polychlorobiphenyl), dioxin, and carbon dioxide (CO₂), have been promulgated. The discharge and disposal of residuals have therefore been relegated to specialized business. This is a motivation for the formation of ecobusiness.

Another example is the regulations on cars, which emit nitrogen oxides, sulfur oxides, and CO₂. Although nitrogen oxides and sulfur oxides cause local environmental change, CO₂ causes global environmental change. So, it is more difficult to identify the relations between human behaviors and the changes in the natural environment in the case of CO₂ than with nitrogen oxides and sulfur oxides. Hence it is the turn of the administration to deal with this since it has authority and a wide enough field of vision to identify environmental elements and their relations. As to the emission of CO₂, a carbon tax or CO₂ tax has been considered in many countries in the world, and has already been adopted in some European countries.

If a carbon tax is to be set up and imposed on consumers as well as producers, they will each strive to reduce the emission of CO₂ and choose products, including cars, oil space heaters, etc., that emit little and less CO₂. Consequently, some producers will strive to develop and produce goods that emit little and less CO₂, and other producers will develop and supply devices and parts that reduce or prevent the emission of CO₂. This is another motivation for ecobusiness and its market.

Pollutant substances are brought about also in the process of production, such as PCB, cadmium, hexavalent chromium, organic mercury compounds, nitrogen oxides, sulfur oxides, chlorofluorocarbon (CFC, which has been injurious to health), CO₂ (which causes global warming), sludge (which disrupts the marine ecosystem), nitrogen (or more precisely nitrate salts), phosphorus (or more precisely phosphates) (which causes marine eutrophication), and radioactive substances.

Pollutant substances harm human health. Individuals and groups have demanded

compensation for injury, often through legal action against companies or enterprises, and this has been a cost to companies in lawsuits and compensation. Gradually, companies have become aware that it is more advantageous to prevent the emission of pollutant substances in the production process, from the viewpoint of ecobusiness management, and have developed environmental protection systems, including recycling, to prevent the emission of pollutant substances. This is a motivation for ecobusiness, although at the first stage an internal one, that is, it is an ancillary part of a business or company that has a principal industrial part, apart from the ancillary one. The two sections—the environment-related and the non-environment-related—are, in undifferentiated and unspecialized conditions, united under one management. Ecobusiness exists implicitly in those cases.

At the next stage, some companies specialize in producing and supplying environmental protection services covering the use of products, and produced and non-produced assets as objects. That creates externalized and independent ecobusinesses. Among these are companies that produce specialized devices and equipment to prevent the emission of pollutant substances, devices and equipment, and material specialized for environmental protection systems including recycling. This is great motivation for the formation and existence of ecobusiness.

In relation to environmental pollution and degradation derived from production processes, the life cycle assessment (LCA) must be referred to. The LCA is based on the concept of the life cycle of a product from the viewpoint of development of environmentally sound products. The life cycle means the course or career of a product consisting of natural resources mining, materials production, product manufacturing, transportation, use or consumption, discharging or dumping, disposal, and recycling, if traced from the beginning, or conception, to the end, or death of a product or product life. This concept is spreading and will contribute to the worldwide formation and expansion of ecobusiness. That will ensure a long lasting and continuously increasing social demand, and could develop mere ecobusiness into ecoenterprise.

-
-
-

TO ACCESS ALL THE 12 PAGES OF THIS CHAPTER,
Visit: <http://www.eolss.net/Eolss-sampleAllChapter.aspx>

Bibliography

Kaneda I. (1996). *Economics and Philosophy of Global Organic Production*. Tokyo: Chuo-keizai-sha. [in Japanese.] [This discusses productivity of natural assets, commenting on value theories of traditional economics.]

Makino N. (1998). *Environmental Big Business*. Tokyo: PHP Research Institute. [in Japanese.] [This discusses ecobusiness as a developing industry and green consumerism.]

United Nations. Statistical Office (1992). *Revised System of National Accounts (Provisional)*

(ST/ESA/STAT/SER.F/2/REV.4). New York: United Nations. [This represents the internationally standard accounting system for national economic accounting.]

United Nations. Statistical Division. Department for Economic and Social and Policy Analysis (1993). *Integrated Environmental and Economic Accounting: Interim Version* (Handbook of National Accounting. ST/ESA/STAT/SER.F/SER.F/61. Studies in Methods, Series F; No. 61), 182 pp. New York: United Nations. [This represents the standard accounting system to supplement the System of National Accounts (SNA) in treating environmental elements.]

Wada Y., Nakano K., and Yamamoto R. (1996). *Lifestyle Safe to the Environment*. Tokyo: Gihodo. [in Japanese.] [This discusses life cycle assessment (LCA) and ISO.]

Biographical Sketch

Professor Ichiro Kaneda, born February 22, 1934, in Tokyo, Japan, gained his bachelor's degree in Tokyo University in 1962 and his doctorate in Tokyo University in 1982. He is a professor at Niigata Sangyo University and ex-president of the same university, having served as president from 1988 to 1996. His fields of specialization are environmental and food economics, mathematical economics, and regional economics. His main recent scientific publications are Economic, technical and political aspects of LNG carriers in comparison with NG pipelines (based on the paper he was invited to present at the U.N. Symposium on Natural Gas Transport and Utilization in Northeast Asia, Beijing, December 2000), *Bulletin of Niigata Sangyo University* (Faculty of Economics), **23**, June 2001; *NHK-Books: The Japan Sea Economic Rim* (The Economic Region Surrounding the Sea of Japan) [in Japanese] (Tokyo: NHK Publishing, 1997); *Economics and Philosophy of Organic Production by Global Nature* (ecological and agricultural economics) [in Japanese] (Tokyo: Chuo-keizai-sha Publishing, 1996); and The change of the viewpoint on the Japan sea rim, *DBI Economic Review* [in Korean] (Daegu Korea: Daegu Banking Institute, 1995).