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Toward genuine and original - production strategies under the pressure of globalisation -

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After the collapse of the socialistic economy in the Soviet Union and Eastern Europe, prestige of market-oriented economy is often admired these days. However the market-oriented economy is always with a problem of finding out what are profitable goods for the days and of producing them so that they will be marketed. Thus the economy is said to be a system always pregnant with a kind of tension for each enterprise. Multiplication of goods in species accounts for a major proportion of the stream of the economy as a result of maturity of the market, and some trouble is liable to be caused nowadays due to such multiplication. For example, excessive goods cannot be accommodated in showcases in stores. In some cases, sales clerks often find it difficult to explain to their customers what kind of goods they have or where they store their commodities, because there are too many species of merchandise. However judging from another viewpoint, multiplication of products in species is, as it were, to imply that individual enterprises cannot secure their sale required for the maintenance and development of their own unless nets with small meshes will be so designed as to be used for catching small fishes (mini-demand) swimming in a sea, the market. In addition to the above, we should take an account of the apprehension ³what shall we do after the resources of such small fishes are exhausted? ².The author of this paper is now inclined to think that a flow of the commodity production will be steered into a direction of a genuine-product-oriented system as a product characteristic.

Second trend of production is the shift toward the upstream of production i.e. R&D to produce original product earlier than others. Globalization brought so called mega competition in which whole countries in the world participate the market to compete each other for selling goods and services. For competing with other countries, especially with other Asian countries who are catching up the level of industrialization, Japanese manufacturing industries can not survive without bearing the burden of highest workers wage level in terms of US dollar. In the process of appreciation of Japanese Yen after 1986 which promoted the move of their factories to foreign countries and consequently occurred hollowing out of manufacturing, Japan is trying to find new international division of labor in which Japan has a role of R&D center.

When we largely divide the function of manufacturing industries R&D as upstream and processing and assembling as downstream, the function of internal manufacturing industries are gradually moving to the upstream region and this trend is clearly recognized by increasing ratio of R&D investment to equipment investment and the number of R&D workers to factory workers. To endure the huge wage gap with other Asian countries reaching several times (or even several ten) times it is obviously impossible to rely on diligence or skill of physical worker in Japan. For maintain the higher wage level of Japanese workers it is inevitable to intend higher value addition of products through the excellence of R&D work or improvement work as a part of intellectual works, because the gap of

intellectual efficiency among people reflecting education infrastructure and R&D infrastructure can be much bigger than the gap of physical function. In this context the necessity of strengthening the innovation or development capability of new products or process based upon the excellence of intellectual work of Japanese worker is advocated as the right course of Japanese manufacturing industries. And it is also emphasized that the competition strategy must shift from ³ providing higher quality with cheaper price² to ³ providing original products earlier than others².

In this paper, these two types of orientation of production(or product) strategies is to be discussed. At that time, the author wishes to express his intention in purport: Not a production system should be constructed as perfect automatization, i.e. as an automation system in order to produce genuine goods, but aggressive utilization of human skillfulness is required. Therefore everyone should be more concerned with the direction of the craftisation of industry which is kept in mind by people as a concept of the human-centered system. Prior to laying such insistence, it should be explained what a genuine product is.

1. What is a genuine product?

What will a consumer seek finally? That will be a product sufficing perfectly his or her needs and wants. Hereafter this shall be called a genuine product. Furthermore when a genuine product is in consideration as a product characteristic, the condition to be imposed by the genuine product is believed to be aligned as shown below.

1) Usefulness--being excellent in intrinsic functions--

A consumer purchases a product to suffice some kinds of needs. Accordingly the genuine product should possess utility value perfectly sufficing the needs. Supposing by way of example that the genuine product is a food, it should have a sufficient nutritive value and is both tasteful and eatable without any anxiety in digestion. A car should always be excellent in running performance and safety. Here is an expression "things excellent." However this does not mean that the things are luxurious or have a variety of additional functions, but means that this is the first condition for allowing the things to own high usefulness in their intrinsic functions.

2) Originality--macroscopic and microscopic originality--

The opposite of genuine is counterfeit. A counterfeit substance is just an imitation (copied one) and none of creativity of the person who manufactured it is found there. If creativity is applied, then original personality is provided there as a matter of course. Thus a face of a skillful hand who manufactured the things, i.e. the maker becomes to be seen. A species is manufactured with its original function or design, which means that something common to all of the individual products manufactured based on the specifications of the species, i.e. macroscopic originality is pointed out, so to speak. Such originality is, needless to say, quite an important one, but personality with respect to the product apiece coming out as a result of the apiece-manufacturing production, i.e. microscopic originality becomes necessary, so to speak, provided that the species is intended to perfectly comply with customers' individual wants even if the species is the same one. In the conventional industrial production, subtle difference apiece in size and color is eliminated as irregularity, and it has been required that a species with a single kind should be the one that is of precisely the same dimension and exactly of the same color as requested in the specifications in a design map, i.e. a clone product. None of expectation is warranted there with the fact that fortune-endowed pleasure that would be exclusively felt when a material that could never be found in the world except itself can be obtained.

3) Durability--being usable for a considerably long term--

Perishables together with their similar foods fresh from stock should be evaluated based on another kind of standards, but the degree of durability is an important clue with the durable consuming goods to determine to what extent the product is genuine enough. The matter is in relation with the items referred to at first in the significance that long-term utility is great in consideration of being usable for a long period, but something not to be explained is still pointed out. As can be seen in trees of God in Shinto shrines, something divine surpassing the diameter of the trunk is felt with a giant tree having lived to be hundreds years of age. A kind of reverence we feel with the products having durability is believed to be derived from the reason that weightiness of time over which those products would pass has something to expedite us who live in the limited time.

4) Touches of humanity--idiosyncrasy and warmth feeling--

A genuine product is enriched in its quality with idiosyncrasy, tastefulness, and warmth feeling. Such invisible factors identifying quality are brought about by high degree of the technology and skillfulness contained in the product. Behind the technology, there exist activities in human life that have developed and supported the said expertise in industrial arts since the ancient ages. In the meanwhile with skillfulness, enthusiastic assiduity of the making hands as supporters of the skillfulness resides in it. A feeling for existence possessed by raw materials with good quality might also be a very important element. However among the roles of the factors designated above, i.e. technology, skillfulness, and raw materials, the one played by the skillfulness is in particular of decisive importance. In manufacturing processes of famed high-class automobiles such as Rolls-Royce, Benz, BMW, etc. some kinds of courses are intentionally left untouched so that they will be dealt with by skillful mechanics. This is because of the fact that something defective is liable to be pointed out with automation production from a viewpoint of the idiosyncrasy even if the processes are entirely free from functional trouble.

2. Situation change surrounding commodities--5 types of maturity--

In the previous chapter, it is argued what a genuine product is. At the next stage in glancing at the movement in advanced countries, the author wishes to explain that a situation that might be called maturity in relation to the 5 points shown below is going to come into existence, and therefore genuine-product-oriented policies are being strengthened.

1) Maturity in earnings--preferring good products even if they are expensive--

Here, maturity in earnings means that it has become possible for many people to be in possession of money sufficient in acquiring purchasing power for the products truly desired or undoubtedly excellent even if they are considerably expensive. Needless to say, there are several exceptions such as problems of dwellings, high-class automobiles, etc., but situations have allowed people to buy even considerably expensive things provided that some endurance for such expenses is taken. Judging from a standpoint of purchasing power, a situation that should be called maturity of the income earning level is going to come into existence. As another viewpoint concerning maturity of earnings, maturity in desire for acquisition of earnings is designated. Since many of the people including the Japanese who are the nations of Japan as a major economic power have been strongly desirous of acquiring higher salaries or wages, it cannot be denied that no elevation of the income earning level is sought more highly than now. Accordingly no expression can be made with respect to maturity of earnings in an absolute meaning, but the income earning level is heightened to a considerable extent compared with the past. Thus it can be said that people's desire in acquisition of earnings is accepting arrival of a relatively matured stage in a sense that people's viewpoint for values is steered into a direction from money to

buy things to time to pass away freely for leisure. While possession of expensive consumer goods becomes useless as a measure to claim an advantage over other people, each consumer is challenged to seek a way how to choose genuine products in buying things in a relation with the life-style for passing away free time.

2) Maturity in the selecting eye--the eye viewing genuine products--Even if one has enough income to buy genuine products, his or her purchasing power is never activated without having ability to choose the genuine products with him or her. As seen from the fact that many of consumers cannot extricate themselves from their famous-brands-oriented policy, it is no easy to have the eye to find out what are genuine products. As can be said with antiques, it is necessary to be provided with many opportunities to see a large amount of valuables and precious materials high enough in quality in distinguishing genuine products from other things without elaborating on this subject. It is also necessary to be provided with consumers' maturity in intelligence and sensitivity. Despite the fact that we have not yet reached such a stage of the distinction referred to above by any means, opportunities for us to come into contact with genuine products directly or indirectly and know-hows to evaluate them are gradually becoming abundant in volume as seen in the enhancement of the education level, widening of the range for activities, multiplication of media brought about by development of information technology, expansion of free time to make choice by taking sufficient time, etc. Thus the condition for enriching the eye to choose product groups with which people are concerned is becoming satisfied.

3) Maturity of markets--from multiplication in species to single(apiece) production--

As necessities for daily life of people are almost diffused throughout individual homes as a result of maturity of markets, decision of purchase is made in accordance not with needs but with wants, that is to say, in accordance with consumers' liking. After such decision, a tendency is noted as a matter of certainty that a variety of commodities to be obtained as far as possible is to be in hand for the purpose of enhancing a possibility to comply with consumers' liking.

However in the event of multiplication in species of goods being accomplished, is everything sufficed with the matter? As human faces differ from each other, consumers' desire for functions or design of commodities must intrinsically differ from each other. If commodities wholeheartedly sought by consumers are produced, then such commodities should individually be manufactured as requested by each customer provided that the goods to perfectly comply with consumers' desire are produced. With multiplication of products in species, consumers' desire is more adequately sufficed than in case of a few kinds of species in a meaning that a range of choice is expanded. Despite the above, no expectation is fulfilled in allowing the desire possessed by consumers to be sufficed 100 percent, except that coincidence with fulfillment of the expectation is made by chance owing to the fact that the number of the species is a restricted one. In short, the multiplication in species at present is, for the consumers, equal to the given variety where the number of the species is restricted even if the number is increased, i.e. the variety is, as it were, preprogrammed variety and is never be called the multiplication of products in species perfectly reflecting the diversification owned by people. In such a situation of the multiplication at present, consumers are obliged to buy things by compromising with themselves on the given variety as before with slight awkwardness in feeling caused by their real liking irrespective of whether they are distinctively aware of the said fact or not.

According to such a concept, a production system for a single(apiece) production system comes into existence as a way how the production system placed on the very tip of the multiplication in species is. Making each commodity based on the specifications as requested by a customer or making

each commodity based on the maker's own mind for creation as with the case of earthenware made by potters implies the reality of apiece-making production system. The characteristic to be required there is to possess peculiar personality as a piece of the work. From such a meaning, it might safely be said that the product thus obtained is undoubtedly a genuine product. This is because there is no meaning for producing single(apiece) commodities intentionally unless such personality is endowed.

(4) Maturity of function -- technological final arrival point --

When a commodity has diffused in the markets to a certain level that majority of people benefit by its standard function, there exists a way to arouse new demand besides merely multiplying the commodity--which we have already seen. The way is to produce a new model that possesses modified functions or designs. This method, making new models, has been accelerated over the recent years competing for market share; and in relation with the multiplication tendency of products, this life-cycle is becoming shorter. The shorter life cycle of products could be raised by high-speed technological progress and, when there is no further technological progress, by supplying new models one after another corresponding to hectic change of consumer's taste and mode. Video-cameras and personal computers are former illustrations, and most of clothes and foodstuff are of the latter ones. In this latter case, the sense of consumers is the more decisive factor in terms of purchasing rather than the differences in functions.

The situation of latter case held the assumption that the basic functions of the product has sufficiently diffused in the market. In this sense, this state indicates market maturity. An commodity, even included in the former group, will finally enter into a functionally matured phase with time progress, and subsequently the markets also will mature. To elaborate this point, we need to look at characteristic of the commodities' life cycle

The life span of commodities can be categorized into two parts; micro (individual) and macro (species). For instance, the television appeared after World War II, and with sever competition of household electrical products companies, TV models have been intensively changed. The life-cycle of commodities itself--that is, life span of individual model, have been fairly short. However, in regards to the historical development of the TV (as a receiver) it follows the first stage (black-and-white TV period), the second stage (color TV period), and the third stage (high quality vision TV period). It shows that the TV life cycle i.e. the life span as a species is still vigorously lasting, and we can now say that TV is in a path towards in a high quality vision period, the third stage. The reason why TV has been one of the leading commodities for a long term is that the development of the TV as a species has shifted favorably. When the black-and-white TV satisfied the market in the first stage, the color TV appeared as more than a mere model change, and just when the color TV closes to diffuse, then, the high-vision TV which is also a epochal product compared with the color TV is going to take the place. Of course, the technological progress with the TV is not limited only in the changes from black-and-white to color, or from color to high quality vision. There are also in several changes such as the picture size (more compact or wider), satellite broadcasting, and the appearance of video as a peripheral. Anyhow, it could be quite feasible that the TV takes on a life span of a species as well as of an individual commodity.

In addition to the distinction between individual and species cycle, what we should be concerned with in relation to life cycle of commodities is the concept of technological final arrival point or maturity of the commodities' function. Next, I will mention briefly this point. Every commodity has some functions as a substance of the utility value. Generally, when a commodity appears, performance level of the functions is very low. It could be slightly better than we have nothing, easy to break

down, or difficult to manipulate etc. From such state of functions, the commodity is gradually improved its function by repeating incremental technological innovation, and finally it arrive the level where more functional progress is not needed. This level is called the technological final arrival point. And this concept of final arrival point has also its sub-final arrival point; for example, in the previous instance of the TV, each stage of the black-and-white, the color, and the high quality vision has its technological final arrival point as a sub-final arrival point of the TV. The electronic calculator is an example of which arrived the point comparatively in a short term. The calculator is already perfect in speed and accuracy. Also in respect of size, if it becomes smaller, it will make difficult to input numbers with fingers, and if it becomes thinner, we will easily snap it in our pocket. Even there would be another expectable parts of progress, like a display with clearer definition or voice-input, we can say that the electric calculator is almost matured in its functions. Namely, the calculator has reached its technological final arrival point. Though electronic pocket notebook is being highlighted recently and it has functions of processing and memorizing words-information in addition to the computing function of calculator, it is better to take as a birth of a new species of commodity than multiplication of calculator. Some day also the electronic pocket notebook will reach its technological final arrival point through repeating incremental innovation.

Apart from the electric calculator, we can find another products that are already mature in its function. Watches are mature commodities for the same reason with calculators and the bicycle can be thought in the same way. Most of merchandise in our daily life such as clothes and furniture have come to their functional maturity and for these functionally mature commodities makers can not get lead by better functions of their products. Consequently, the way for appealing to customers is to make difference in quality and design. In mature market, necessary functions have been satisfied with products that we bought already. Lower price of products can not be enough for creating new demand. The fact that superiority of design sense plays decisive role, means that commodities generally become "fashion goods" as we see on clothes and watches. Sound of "fashion goods" may give a frivolous image, but by going through this process, consumers come to the stage where they select the genuine product faithfully to their sense of beauty free from the restriction of function.

(5) Maturity of technology--limits of automation--

In addition to the change of demand side; maturity of market, the change of supply side also inclines manufacturing companies to multiplication of goods in species. Development of micro-electronics and other technologies make it possible that production systems have flexibility to adapt itself to the wide range variation of products, with change of soft ware, i.e. without change of machinery equipments as hard ware. This means that production of multiple types of commodities is become feasible without increasing production cost seriously. We can say technology reached in the stage of maturity in the sense that it got ability to respond various types of products with reasonable cost.

However, while it contributes to multiplication of products, the technological development show limit of the production system which only relies on technology. That is, the development is making clear the necessity of craftsmanship or human skill, that only human beings have, for making genuine products. For explaining the reasons of necessity of human skill, I have to describe various factors which are unable to be transformed into hard and soft ware; such as tacit knowledge, intuition, strength of will, imagination, creativity, and so on. Here, I just mention that, the technological development is reaching the stage where limit of technology is coming in sight and in such sense maturity of technology is being observed.

3. To make genuine product -craftisation of industry -

This paper has shown that people is going to orient genuine products in developed countries. But when we look at the fact that, in developing countries, people can not satisfy even their basic needs for life, ethical problems that whether we are allowed to satisfy our wants more, may appear as another problem . However, it may possible to say that genuine products with physical durability and permanent attractiveness are desirable for saving natural resources.

Now, how should be exist the production systems in the genuine-product-oriented age? I have pointed the importance of human skill for satisfying the requirements of genuine products. So concerning that factors which can not explain with mere qualities or functions; such as idiosyncrasy, and warmish feeling, will get great importance, we have to reinvestigate production systems which put priority too much on efficiency. For pursuing efficiency and speed, automation systems has progressed under the name of ME (micro-electronics), or informatization (computerization). My view is that we are in the time to think the limit of automation and to look for the future perspective of production system.

And our destination should be a system utilizing the human skill and the hand manufacturing process not only as a substitute for the automation but as the core of the system, utilizing the high-technology as a supporting tool of workers. In general, making craft goods instead of automated products, i.e. craftisation of industry is our goal. From the age of craft based on human skill of guild, passing through the "manufacture"¹ era and the era of "great industry by machinery"¹, we are now in the era of "networked automation system"¹. With high technology as a reliable tool, the return to craft again will bring us new era of the "craftisation of industry"¹.

4. Some strategies of Japan's manufacturing industries

1) traditional strategy:

Higher quality with cheaper price than others (to get maximum market share)

Basic strategy of Japanese manufacturing companies was to realize maximization of company scale. This strategy proved successful in attaining the economies of scale to cut down their cost and also in providing more of upper posts for their employee. Even stockholders were happy to enjoy capital gain resulted from rise of stock price. However, the maturity of domestic market and the frequent occurrence of trade conflicts is making this growth strategy inadequate and the rapid catch up of other developing countries with much cheaper labor cost is making the strategy also impossible.

2) a proposal of Mr. Akio Morita (the then President of Sony) in "Bungei Shunshu " (periodical journal in Japanese), February-1992:

Higher quality with profitable price to assure profit and thus, through reducing of market share resulted from relatively higher price which affords sufficient profit for Japanese industries, to avoid trade conflicts with other advanced countries. We can look upon this strategy as a variation of "higher quality with cheaper price"² strategy because it is a strategy of price setting based upon making things as cheap as possible.

3) a proposal of Mr. Hiroyuki Yoshikawa (the President of Tokyo University) in "Weekly Diamond (in Japanese)" June 18, 1994 :

Create new originals earlier than others to avoid trade conflicts with other advanced countries by not compete for existing products and also to cope with the pressure of chasing up by other Asian industrializing countries. To create new originals the R&D activity should be strengthened and the budgetary support of Japanese government should be more increased. And also education system in Japan have to change for promoting the creativity of Japanese nation.

5. Some comments on the " create new originals earlier " strategy

a. The share of existing goods in total production is much bigger than new original goods. Can we have enough number of employment opportunity by creating " new originals faster " than other countries ?

b. To do Research and Development for new original goods, is it possible for ordinary companies(especially for small business) ?

Majority of Japanese companies have contributed Japan's economic growth by supplying high quality products cheaper than other countries through process innovation. For them to be expected " create new originals faster " than other is too excessive burden.

c. Even after succeeding to create new originals, production of the goods or its parts would be ordered to foreign manufacturing companies in other Asian countries who can offer cheaper price.

d. Can we expect that Japanese people are superior in terms of originality than other people? The strategy that assumes Japanese nation as ordinary people is to be more normal and realistic.

e. Among existing goods or services we have a lot of things that we need or want, for example, house with wider space and safer structure for earthquake, road with safe sidewalk for pedestrians and attentive care for patients. And the priority of those existing goods or services would be more important or higher than future new originals .

f. Though the strategy of " new originals faster" does not aim at cost performance of manufacturing process, it aims at cost performance or time performance of research and development. In that sense the strategy still intends to strengthen the competitiveness of export oriented industry. Next evaluation of Japanese Yen currency will be inevitable and so is the "hollowing out" of major part of Japanese manufacturing industries that make existing goods.

Conclusion - ³hightech craftisation of manufacturing industry ² to make ³beautiful products thoroughly² -

Main purpose of economy or industry is not maximizing trade surplus. It is to ensure people the opportunity to work and high quality of life within the capacity of natural environment. And this requests an integration of the logic of production which wants to save the cost by eliminating human work and the logic of consumption which needs an opportunity to work for getting purchasing power. Reviewing and reflecting the automation system is necessary for Japan's production system.

Automation system inevitably needs high level of operation, in other words, mass production to clear break even point resulted from big amount of capital investments (fixed cost) for automation system.

Only way to get down the break even point and to have real flexibility of production items or elasticity of production volume is to utilize human skill. Human-oriented production system or skill oriented production system should be introduced to Japanese manufacturing industry.

Now, such trend has partially started in Japan. Automatic machines and robots are being removed from factory and workers are again introduced in place of machines and robots. A problem of such new trend is that the purpose of new human oriented system is mainly to save the production cost. Genuine human oriented system should utilize human skill for producing high designed -beautiful- products supported by high technology. The conclusion of this paper is that , after reaching the maturity stage of market, a sort of ³hightech recraftisation of manufacturing industry ² or ³ three highs strategies i.e. the integration of high technology, high skill and high design² to ³ make beautiful products thoroughly² must be considered as an important alternative for manufacturing companies in advanced countries.

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(abstract)

Though the major trend of production strategy in advanced countries like Japan is still to progress automation to save the labor cost, the limit of such strategy is becoming more and more clear. Automation system needs big amount of total production volume even when it can be adapted flexibly to the multi-products. For surviving of the major parts of industries the utilization of human skill supported by high technologies to make products with high design sense is to be the most important and adequate strategy of production.

This paper, firstly, proposes the ³ craftisation of industry ³ to produce genuine products for coping with matured market in advanced countries. The concept of genuine product should satisfy four conditions. 1) Usefulness i.e. being excellent in intrinsic functions. 2) Originality of function or design that perfectly comply with customers¹ individual wants. 3) Durability i.e. being usable for a considerably long term. 4) Touches of humanity including idiosyncrasy and warmth feeling. Genuine products is becoming more and more suitable when we consider the maturity in relation to the 5 points i.e. maturity in earnings, maturity in the selecting eye, maturity of markets, maturity of function and maturity of technology. To make such genuine product we have to reinvestigate the existing production system which put priority too much on efficiency. We are in the time to think the limit of automation and to find future perspective of production system in a system utilizing the human skill and hand manufacturing process not only as a substitute for the automation but as the core of the system.

In the latter half of this paper, after referring the traditional or existing strategy i.e. ³ higher quality with cheaper price² and ³ higher quality with profitable price³, the author criticizes the trend of ³ making original products earlier than others³ which is strongly being emphasized by some of top academicians or business executives in Japan implying the building up Japan as a strong technology and science based state.

This paper agrees to the importance of technology or science. However, like intellectual property, intellectual activity to compete for market is essentially so exclusive that only the earliest person or company that invent some original goods or process can get the right of survival. To assure the people sufficient opportunity of employment we should utilize human skill to ³make beautiful products thoroughly², not to ³make original products earlier than others².

The criticism to the strategy of ³making original products earlier than others³ may seem as a contradiction to the proposal of the strategy of ³

craftization of industry to make genuine product ³ that put the originality of product as a necessary condition. However, the originality of genuine products does not mean to have some intellectual property because the originality of genuine products can be got by having some human skill of manufacturing like pottery making. Even the nation of advanced countries can not assume the exclusive excellence of creativity to get intellectual properties. Our target of production strategies should focus on the more symbiotic system that can afford giving the sufficient opportunity of employment for all nations of the world.

The conclusion of this paper is the proposal of new strategy of ³high tech craftisation of manufacturing industry ² to make ³beautiful products thoroughly² -