

# Growth of Toyota Automobile Industry in Postwar and Structural Evolution of Organization

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## I Introduction

We can mention Toyota Automobile, if it is said the top automobile company where earning power is most in the worlds at the present day. Toyota Automobile starts at the consistent manufacturing factory of first popular Automobile in our country established by Kiichiro Toyoda needless to say, is a company that sticks to an original domestic production technology in abiding "Toyota Platform", while most automobile companies have achieved the high development by licensing-in from foreign countries and hit the peak even the top in the world. That is, Toyota Automobile in the public stock market value at one o'clock 1990 year is equal a big 3 of the United States, in a word, equal amount of the total of GM, Ford and Chrysler, and keeps surpassing the public stock market value of a big 3, even if entering 2000.

Then, what is the motive power of the growth of Toyota Automobile? Surely, one powerful explanation is an idea of being in the barrel Innovation activity of effusion of entrepreneurship that the leader of an Austrian sectarian and Schumpeter emphasize. The consideration of the organization of the enterprise is lacked though the method of this explanation is important. That is, what is performed from the upper layer to the lower layer in the organization of the enterprise and the character of people who try to learn it, has been filled in the organization of a reformative enter-

prise. There is not a shadow of the frustration, but there is a character that starts daring to run the risk. . . . In the organization of a reformative enterprise, the upper is on from the president to workman in the corner of the factory in the under, all please do a discussion on the new product and the new production process (morse [Innovation]). In other words, this is a cooperation of system with energies that I say, and the domination of any innovation is not brought without team work with energies with fluctuation of the cooperation of system and without timely the structural evolution. The cooperation of system with truly energies secures a semi-autonomy (fluctuation) at all levels of the hierarchy in principle multilayer system, and is achieved when it maintained through the structural evolution by the action of synergetic autocatalysis. That is, it is an explanation by the activity with fluctuation and the dynamics of self-organization through the action of autocatalysis.

Case studies of Toyota Automobile of this paper (name of the company before it integrates, Toyota Automobile Industry) are first of all in clarifying a dynamics of process as the activity with fluctuation in the growth of Toyota Automobile Industry from the viewpoint of the organization system, and next in verifying of the dynamics of selforganization, that is, the structural evolution, through the autocatalysis action and the action of synergetic autocatalysis.

## II Effusion of Entrepreneurship and Fluctuation

Those who establish it about Toyota Automobile Industry are Kiichiro Toyoda. He is a businessman who devoted his life to the establishment of the domestic production of automobile manufacturing in full-dress. That is, he had a vast sense of mission though it was a big failure of predeces-

sors, were created all organizational frameworks for the establishment of the domestic production of automobile manufacturing, and was promoted positively the popularization of domestic production automobile. Truly, it is a reformative leader. Moreover, the spirit of founder of Kiichiro Toyoda hangs fortunately as a creed of company in not only Toyota Automobile Industry but also the entire group. If it is necessary in the management practice according to successor Taizoo Ishida, added a new interpretation or is changed the expression in observing the basis, it will develop before long even into a mental base of all employees of Toyota Automobile Industry and universalized.<sup>1)</sup> Then, I will clarify whether the spirit of founder of Kiichiro Toyoda can be caused the action that draws out all employees' abilities to its maximum very, in other words, a big fluctuation and the action of autocatalysis . The sprit of founder of Kiichiro Toyoda is shown in "Toyota Platform".<sup>2)</sup> It is in clause 1 that the national policy of a wealth and military strength and industrial promotion was first reflected in the spirit of a business organization, to achieve effective the industrial reward to the nation bears a business, and is to contribute the national interest. Clause 2 of the Toyota Platform does the kernel of the Toyota Platform. That is, we will do the mind to the research and the creation, and exist always precedence in the current of the times. It runs to the spirit of Sakichi Toyoda that this is made "The splendid home product not

**Table 1 Toyota Platform**

1	It should be served an upper and lower agreement and the sincerity business, and be enumerated the real achievement in the national interest of industry.
2	It should be done with the mind to the research and the creation, and always the precedence in the current of the times.
3	It should be warned a gorgeousness and the simplicity and sturdy.
4	It should be demonstrate the spirit of warm hearted friendship and made the domestic good custom.
5	It should be worshiped the gods and the buddha, and done the life of gratitude and thanks.

1) Refer to the following literature. Taizoo Ishida, *Defend my Caslte forMyself*, Kodansya, 1969. Taizoo Ishida, *Live in the life Game*, niponsya of business, 1964.

2) Hirschmeyer, J, and Tsunehiko, Yuhi, *Development of management in Japan – Modernization and Business Management*, Toyokeizaishinhouya, 1982, p.245.

defeated at foreign goods with a Japanese head and the arm”, the research and the creation respect the idea of always inventing a science mind and the new one, and the purpose is in the creation of the best one by devising the best. Therefore, it is suggested that manufacturing a splendid domestic production automobile that doesn't defeat at the car of Europe and America be made the pressing need of the research and the creation in the business of automobile manufacturing. Clause 3 of the Toyota Platform is the one that it was expressed to warn all employees the luxury, to endeavor the saving and to work hard in a serious attitude to the duty. Clause 4 of the Toyota Platform means doing of formation of a family community with respect of “harmony” with sympathy and gentleness, and improving this even to the relation of the society and the home at the interpersonal relationship when encourage each other. And, clause 5 of the Toyota Platform is that it is the one to show the spirit of the running repaying the kindness, and had for the role to strengthen a family community or a family groupism to show a thanks of favor from the local society and a spirit of the running repaying the kindness as for this business to people of the local society. Then, I will clarify the practice action of the spirit of founder of Kiichiro Toyoda in the relation between fluctuation and the autocatalysis action.

#### 1 Creative Passion and Spontaneity

Kiichiro Toyoda demonstrated the inscrutable creative passion and spontaneity to manufacturing the domestic production automobile. That is, it is a common sense in now to think that it is a rash a little attempt if one private company organization still starts the automobile (especially passenger car) manufacturing business in a technical low level of industrial whole like Japan of 1930's. Moreover, when the machine required many millions yen of is bought, hundreds of people for about three years

work hard, and one automobile doesn't put it out to the market, a stockholder usually is that might be worried.<sup>3)</sup> However, he showed not a mere passionate person but the posture of a voluntary activity. In a word, there are two barriers that should exceed it for the entry into the automobile business. One is training of technical ability, and another is the training of economical ability.<sup>4)</sup> Kiichiro deliberately prepared, and got over the two barriers voluntarily by planning and executing the business. TI (Texas Instrument) did an indeed interesting investigation. In a word, it was found that the program of the strategy of total 50 of what dropped below to the failure or what has succeeded in a recent new product strategy (all processes from development to production and sales) was sure to be examined, and there is to be one common feature in failing what. That is, that is to say that there was no excellent talent who voluntarily acts with creative passion without the exception in the strategy program.<sup>5)</sup>

## 2 Seizure and Conjugation of Talent

Kiichiro Toyoda says. If not only the establishment of the automobile industry of our country might not accompany the establishment of manufacturing but also the establishment of academic research, either this business finish it like fireworks. . . . I think that it cannot permanently establish this business if academic research do not advance with this business. It is a sort of industry that accompanies the application of the latest science, and goes most in the point of the civilization. It is industry that consists of the set of the knowledge power of reaching not by one engineer's knowledge but each district.<sup>6)</sup> And, he appoints, and conjugate the talent in many fields. Exactly, it was a formation of "industry-university

3) Company history edit committee of Toyota Automobile Industry, *History 20years of Toyota Automobile*, Toyota Automobile Industry, 1958, p.26.

4) Cazu Wada edit, *Kiichiro Toyoda Document Collection*, Publication Association of Nagoya University, 1999, p.6.

5) Peters, T.J., and R.H. Waterman, *In Search of Excellence : Lessons from America's Best-Run Companies*, Harper Collins Business, 1982, p.203

6) Cazu Wada edit, *op. cit.*, pp.134~135.

cooperative team” that today meant. One of the creeds of First National Bank of Chicago is assumed to be “only talent is a key success factor”.<sup>7)</sup> and one of the philosophies of IBM is saying that “talent is respecting and conjugate”.<sup>8)</sup> In a word, when the example of the company that has succeeded is observed, the talent’s respect is a common success condition.

### 3 Freedom and Supporting Relation of Activity

One of the motive power of the growth of a business organization is a innovation. Even if the innovation is generated parting from the main stream of the business, the freedom of activity is indispensable. Well, Toyota Automobile Industry please. Toyota Automobile Industry has again kept independently researching many fields as a company of national policy. For instance, it is the research of astiren gas fuel that uses carbide, research of charcoal fuel automobile, and storage battery car, and is researches of diesel engine etc.<sup>9)</sup> It is the one by Kiichiro’s Toyoda practicing “the mind will be done to the research and the creation”, and having allowed the freedom of activity that the development research has extended to many fields like this. Supporting relation is necessary for a free activity. About this, Kiichiro Toyoda acted a role of center. For instance, it is the encouragement, the financial support, the examination room and the construction of the proving ground.

### 4 Innovation and Generosity of Failure

Clause 2 of the Toyota Platform hangs out “the mind will be done to the research and the creation, and precedence in the current of the times always”. Kiichiro Toyoda aimed to follow this spirit, for the passenger car that not defeated at Chevrolet and Ford, to make a popular passenger car including the hot technology, and to supply it to the people. He prepared for that the expensive latest special machine and equipment, and

7) Davis, S.M, *Managing Corporate Culture*, Harper & Row, 1984, p.36.

8) Peters, T.J, and R.H, Waterman, *op. cit.*, p.85.

9) Cazuo Wada edit, *op. cit.*, pp.309~310, p.312.

guided the development and the practical use of material experiment, the engine improvement, and the special steel.<sup>10)</sup> There is no specific medicine of the success in the innovation. However, being able to say one is that a keys to the success in the innovation are matches of the number of failures. He says. For instance, if the same 1,000 things are made, most workmen come to make the one that the hand become accustomed and doesn't make a mistake. It is the good things in many hundreds of on which it is made first, however remarks that the preparedness that threw this away was necessary by the time the hand is decided. Actually, it is doing of the fierce battle fighting hard to the casting of the cylinder block and the failure of putting out 5,000 defective goods is repeated, it attained to the success.<sup>11)</sup> The example of the company's succeeding by the number of failures is that there is no in the enumeration such as Hewlett Pakard, Minnesota Mining & Manufacturing, McDonald, GE, and Johnson & Johnson.<sup>12)</sup>

##### 5 Shopism and No Form, Opened Communications

The manager in Japan keeps always insisting to the employee. The person who has the first war knows work best. Therefore, inventiveness should come out from the shop.<sup>13)</sup> This shopism is typical in Toyota Automobile Industry. In a word, the shopism mentioned here is to expect that the manager is in the manufacturing shop, and it becomes to works on the problem solving in work with the employee according to circumstances, that the posture of the shop respect of the manager is shown by that, is always encouraged the shop, and at the same time, it is to give the authority and responsibility to the person in charge of the shop, expected to work independently on the problem solving in work the shop employee. Additionally, it is important for the manager to exchange the shop with the no form but opened communications. Kiichiro Toyoda had two respects. That

10) *Ibid.*, p.126.

11) *Ibid.*, p.19.

12) Peters, T.J, and R.H. Waterman, *op. cit.*, p.209.

13) *Ibid.*, p.237.

is, that is a respect where he is commanded the manager companion, and on respect where he exchanged the no form but opened communications with the employee.<sup>14)</sup>

## 6 Simple, Functional Organization

Kiichiro Toyoda says. All industries has an decentralized organization of the authority and has acquired the unprecedented progress, the production improvement, and the growth. The automobile industry cannot be the exception. However, when the current state of my Toyota Automobile Industry is observed, the organization at first are a organization of factory management that extremely synthesizes and are added to the sales part, the clerical work, and a simple, functional organization that arranges the director room with the highest decision making function was set up.<sup>15)</sup> Here, the synthesiz is to manage these several thousand parts well with control because several thousand parts are used one automobile (factory management), and to concise the complex business as much as possible secures the flexibility of the organization, was transferred the authority under the line, was given the large autonomy in shop, the few people comparatively at the headquarters level, and the purpose of it is to respect undertaking to the problem solving, the improvement on shop more than the document was checked at headquarters.

## 7 Popularization Orientation of Domestic Production Automobile

It is possible to look for the guidance idea of Kiichiro Toyoda called the popularization orientation of the domestic production automobile from the following some points. Even if a very good automobile can be done, the one that it is not possible to use it expensively, is useless economically. If how much amount is made, can it do really as a domestic production automobile in a suitable price in Japan? The automobile that we produce doesn't necessarily run only on the paved road from beginning to end like

14) Cazu Wada edit, *op. cit.*, pp.550-571.

15) *Ibid.*, p.243.



the foreign country. Perhaps at times, under special circumstances, it is necessary to pass an ugly rough road or on the road that cannot be said with the road.<sup>16)</sup> The popularization of the domestic production automobile won't suffice in the design for a foreign automobile even if it thinks from this respect. The problem of making to the performance suitable for the popularization of domestic production is here. From point "it is possible to drive economically" that is a purpose of the popularizative automobile, the economy of the popularizative automobile is absolutely indispensable. Therefore, the expenditure should go up cheaply in daily life when it requires to drive the automobile at the same time though it is necessary to become cheap the automobile.

#### 8 Social Sense of Mission

The social sense of mission that Toyota Automobile Industry shows is always a patriotism standpoint. Kiichiro Toyoda says. Fortunately, the Automobile Industry of Manufacturing Business Law passes to our country that was made a barren ground of the automobile sector. Government and the private sector been roused to the tendency to our country to growth and develop this business, and it is the one to make us on pleasure, feel the importance of responsibility of the person involved in this strongly. The automobile industry consists by synthesizing other industrial power to the wide range. Therefore, these establishment of this industry promotes the industry of other various kinds, and will bring a development, my industrial world where recentness is keeping progressing is sure to be enriched more and more.<sup>17)</sup> Toyota Platform form the organizational culture, the practice behavior of Kiichiro Toyoda based on this, in a word, creative passion and spontaneity, seizure and conjugationtalent of talent, freedom and supporting relation of activity, innovation and generosity of failure, shopism and no form opened communications, simple functional or-

16) *Ibid.*, p.368.

17) *Ibid.*, p.108.

ganization, popularization orientation of domestic production automobile, social sense of mission thought that it succeeds in causing the fluctuation largely, in causing doing selfcatalysis actively and in dragging a maximum the huge ability of people who compose Toyota Automobile Industry.

### Ⅲ Fluctuation and Process Dynamics of Organization System of Toyota Automobile Industry in Postwar

In World War II, the major city in our country and most of the factory were destroyed by the bombing, lost the overseas possession such as Korea, Karafuto, and Taiwan etc, and in addition, lost the raw material supply ground in Manshu, China, and the south region. Though only damage because of the bombing was negligible also for Toyota Automobile Industry, an overseas assets in an overseas subsidiary companies such as Kahoku Automobile Industry, Kachu Toyota Automobile Industry, etc, and such as the repair plant, the branch offices and the liaison offices in south seas islands were lost all at once. Therefore, it did not go well the revival of Japanese economy. Walking of Toyota Automobile Industry was not the smooth one at all in similar. The lot of problems and the difficult problems in the severe occupation policy such as the designation of the compensation maintenance facilities under special circumstanc, breaking off of munitions amends, dismantlement of Zaibatsu etc, and in the hyperinflation, Dodge lines, the progress of the stabilization crisis because of it had accumulated in the future. Kiichiro Toyoda came up with the plan and the policy that fundamentally revolutionized the management foundation of the company in preparation for a quick, new situation at time when a lot of managers were not able to decide the course for a while after the end of the war by shock of defeat. That is, the plan was, in sum, in the one

that it tried to adjust to an environmental change as soon as possible the management foundation of the company under of the prospect that the economy of our country will shift from the controlled economy during the war to liberal economy like the United States in the near future. It was the one that tries concretely to maintain Koromo Factory as the specialty factory of mass production of automobile, to produce a large amount of automobile that it is cheap and quality is high, and to provide competition with first class car company in the world.<sup>18)</sup> The main policy is that it is discontinued the first to do various automobile manufacturing to compete with the foreign company, in unavoidable situation, build in a special factory, according to the factories and present not the coarse worker shop, that it is to develop secondarily each factory, in a word, cast metal factory, press factory, body factory, the large-scale machinery processing factory, assembly factory (large automobile special factory), and the small machining processing factory (small automobile special factory) completely as a special factory, and establish the factory according to the product, and do the independent accounting to clarify the level of advancement of each factory, plan the rise of economic effect of factory with supporting a free economy outlook, that it is assumed changing thirdly with the establishment of factory according to the product in the organization of plant and the slip system to the assembly line system, and the wage system is assumed to be a wage system of piecework one by one.<sup>19)</sup>

GHQ was, on January 20, 1946, specified as the first stage about 400 of the arsenal of army and navy, the laboratory, the relative factory of aircraft etc, for the compensation maintenance facilities, was included Aichi Factory of Toyota Automobile Industry in that. On the continuing May 28 of the same year, though the specification of the compensation maintenance

18) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, Toyota Automobile Industry, 1967, p.237.

19) *Ibid.*, pp. 238~239.

nance facilities of Aichi Factory was released, three factories, in a word, the main Koromo Factory of Toyota Automobile Industry, Kariya-South Factory, and Kariya-North Factory received in turn the specification of the compensation maintenance facilities from GHQ.<sup>20)</sup> On the other hand, Kiichiro Toyoda kept explaining "Koromo Factory and Kariya South Factory are unrelated to the aircraft production during the war and have already obtained the permission of the private demands conversion, Koromo Factory produce about 40 % of the truck for the revival, and are going forward on the production of privat goods of the revival for Kariya South Factory, Kariya North Factory", and petitioning the specified release. This effort was successful. The specification of the compensation maintenance facilities of Koromo Factory was released on August 16 the same year, and was released one after another with Kariya South Factory and Kariya North Factory on the continuing March 1 next year. The second stage of GHQ was a dismantlement of Zaibutsu. As a result, the Toyota Industry that is the holding company in Toyota affiliates is dismantled on September 26, 1947.<sup>21)</sup> In addition, GHQ executed the labor reform again as the third stage extremely prompt, and ordering it. As a result, the Koromo Labor Union of Toyota Automobile Industry that adjusts part a staff and worker to on October, 1946, is formed in Toyota Automobile Industry.<sup>22)</sup> Kiichiro Toyoda accomplished the maintenance of production system, the maintenance and expansion of the the cooperation company of the automobile parts production (from the Tokai district to the Kanto district and the Kansai district), and the restructuring of a nationwide sales network in postwar while licking the hardship of the occupation policy by GHQ. And, the autommobile maker in Europe and America was expected to be going

20) Company history edit committee of Toyota Automobile Industry, *History 20years of Toyota Automobile*, *op. cit.*, p.238.

21) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, *op. cit.*, p.260.

22) *Ibid.*, p.262.

to advance to our country before long. Then, Toyota Automobile Industry was avoided an immediate competition with the Europe and America car, and decided to be specialized the production of compact automobile. Similarly, Diesel Automobile Industry is in 7-ton automobile, Nissan Heavy Industry will specialize in the compact car Datsun.<sup>23)</sup> When about September, 1947, the system of production of each factory was in order, the total of the employee counted 10,109 people, it became with the production capacity of 1650 monthly productions. However, a troublesome problem of making a lot of business organizations fall to an extreme management crisis. In a word, Azumahisashi Cabinet admitted the expense of a huge, temporary, military expense trying to prevent an economic catastrophe in postwar, and reached 26.6 billion yen by the amount in only three months until being prohibited by the GHQ instruction in November, 1946. This enormous amount of military expense is paid as serviceman civilian employee's retirement allowance and the demobilization expense, as an unpaid price to the munitions company and a loss amends money according to the order discontinuance. There is however a reactionary of the austerity life under the war and the general public's spending power is fueled, and the definite opportunity of hyper-inflation in postwar. Because Toyota Automobile Industry falls into the crisis since the company establishment by this hyper-inflation, will cause the housecleaning, the wage cut, and the strike before long, and president Kiichiro Toyoda is retires to sever this vicious circle. Is a successor president Taizoo Ishida an owner of a strong fate? Moribund Japanese economy by the hyper-inflation has recovered again in less than no time, with Korean War because of a military enhancing each country and the rapid increase of the strategy goods demand. Especially, the influence that the automobile sector had received, was greatly and the special procurements truck had accounted for 10,280, 22.69 million dollars in all

23) *Ibid.*, p.247.

special procurements contract about 305 million dollars for one year after the war accounted for 7% in all special procurements contract. In addition, the national police reservist was established in August, 1950, the automobile demand in this respect joined, and the automobile sector presented briskness. Seeing Toyota Automobile Industry, it was received on July 10, 1950 from the U.S. military logistics headquarters on 1000 military trucks, continuing August 29 on 2329, in March 1 on next year 1350, a formal order of 4679 totals, and concludes the contract respectively.<sup>24)</sup> On the other hand, it were ordered on 230 trucks from the national police reservist in our country in November, 1950 and on 720 trucks in March 1 next year, ordered on 950 totals and this also concluded the contract. As a result, to the deficit of 129.59 million yen in June, 1950, in the closing of accounts in March, 1951, it changed to the surplus of 249.3 million yen.

Taizoo Isida was often defended, executed the iron rule of industrial sector that a business organization that it often prepares in the recession in the boom, is foreseen in the future and management is led, was prosperous.<sup>25)</sup> He aimed under this policy, the modernization of the production facility that postwar days become superannuated, at improvement of efficiency by the equipment rationalization, and were ordered Eiji Toyoda and Hisashi Saito to inspect the Luge Factory that boasted the factory of maximum Ford in Detroit, that is, most modern production facility. The result of theirs of Ford inspection fruit as "Plan for the production facility modernization five years", and obtains the hint of Fords "Suggestion", they introduces the System of Originality-Device Suggestion and the Invention Design System.<sup>26)</sup> This "Plan for the Production Facility Modernization Five Years" was the one that became basic of today's rapid growth in

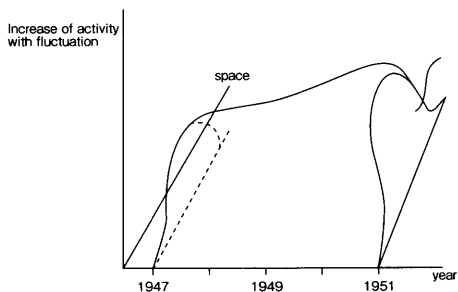
24) *Ibid.*, p.323.

25) The iron rule of the industrial world doesn't have a evidence empirical though one of the experience rules of the practice management of our country.

26) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, *op. cit.*, p.329.

Toyota Automobile Industry and the System of Originality-Device Suggestion targeted the employee individual and the Invention Design System was one to encourage the invention design on the running business as for an office group. Chart 1 is

**Chart 1 Increase of Activity with Fluctuation of Domestic Production of Compact Car**



the one that the strategic decision making to the compact automobile (generic name of the passenger car and the pickup truck) and the modernization of production facilities, the development activities, the modernization of the work management and management etc. were shown as an activity with fluctuation. Toyota Automobile Industry came for the difficult problem of the deregulation of trade that had surfaced rapidly, was to have to think about a new organizing on the further promotion of innovation and labor and management relations. Especially, there was year's of ten years technical delays in the automobile maker in our country by prohibiting or limiting the passenger car production in the war and postwar days. Then, Nissan Automobile, Hino Diesel Industry, Isuzu Automobile, and New Mitsubishi Heavy Industry competed to recover the delay, to deal with the deregulation of trade, and aimed at in partner with an advanced automobile maker in Europe and America, introduced a technique. Taizoo Ishida observes the Toyota Platform, and provided the policy of walking on an original road.<sup>27)</sup> It was a decision to dare to cut the thorny path and to open, was introduced, researched, improved a state-of-the-art machine of Europe and America, and was retrieved a technical delay. Moreover, Toyota Automobile Labor Union converts from "union that conflicts with the

27) Company history edit committee of Toyota Automobile Industry, *History 20years of Toyota Automobile*, op. cit., p.375.

company” to “union where it walks with the company” under of the guidance of new division of enforcement, declared a decision wrestled at the labor and management integral in predicament of deregulation of trade<sup>28)</sup>. This is a labor and management declaration for labor and management to say a expectation so the leap of well-known “Toyota in the world from Toyota in Japan”. Our country entered the age of high economic growth in 1956. This high economic growth brought a big change to the demand structure of the automobile. First, the large truck shifted from the gasoline automobile to the diesel automobile. It is because fuel expense cheap, large diesel automobile came to be liked in the large truck for the long distance mass transportation. Secondly, the compact size four wheel truck market has expanded. This depends on the market’s having requested needs of the increase of the demand for the short distance transportation and the low price and the economy. Thirdly, the specific gravity of the business car decreased, and the domination of the private car became definite in the passenger car section. Toyota Automobile Industry is that expands a vehicle charge chief of role corresponding to changing such a demand structure, and takes the strengthened strategy.<sup>29)</sup> In a word, it was the one of making it synthesize, promote all processes from the selection of range of customers to the customer needs, the engine, the design of vehicle, and the preparation of production. Toyota Automobile Industry executes the expansion strategy of sales network and the strategy of system of mass production at the same time. That is, the former was to have introduced the two or more sales system renewing one shop principle of one prefecture.<sup>30)</sup> As a result, corresponding to the expansion of demand by arriving

28) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, op. cit., pp.419~420.

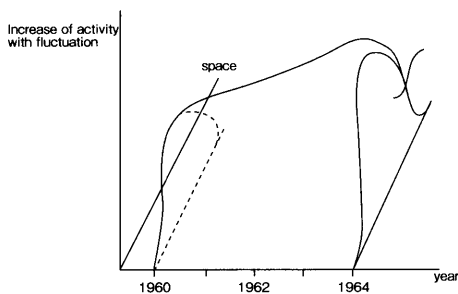
29) *Ibid.*, p.355. Mitsukuni Hasegawa “Fluctuation of Organization System and System of Toyota Production in Toyota Automobile Industry”, *Touakeizaikenkyu*, 66.1, 2007, p.24.

30) Company history edit committee of Toyota Automobile Sales, *Together with Motorization*, Toyota Automobile Industry, 1970, p.173.



at details became possible and the number of shops of whole countries became twice or more. It constructed in the latter the construction of Motomachi Factory it only for the passenger car aiming at and as a result, came to be able to specialize the fac-

**Chart 2 Increase of Activity with Fluctuation at Term of Growth**



tory only for the truck in an existing factory. Chart 2 is the one that the promotion of innovation, the organizing of new relation between labor and management, the strengthening of the vehicle charge chief corresponding to changing of the demand structures, the expansion strategy of the sales network, the strategy of mass production system etc, were shown as an increase of the activity with fluctuation. It is from 1959 to 1963 that the each one automobile maker in our country entered the passenger car market. And, it is after 1963 that the passenger car production sprang up to the center of the automobile sector of our country, it leaps greatly, and will come the one's own car popularization age before long. Then, the strategy that Toyota Automobile Industry took corresponding to the coming in the popularization age of passenger car, was consistently the diversification (or, diversified it) and an expansion of the system of mass production. Toyota Automobile Industry announced Paprika as a basic model following Crown and Corona in beginning 1961. This is achieved what of basic philosophy since the establishment of Toyota Automobile Industry, in a word 「the car is the general public. the real development of the car sector becomes possible according to manufacturing of general public's car, in other words, the car that all people buy easily<sup>31)</sup>」. It is achieved what of

31) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile, op. cit.*, p.534.

basic philosophy since Toyota Automobile Industry establishment. As Paprika having the high speed of the medium-size car class, the acceleration and the hill climbing ability, the price was epoch-making that is equal to the compact car. As a result, 2000 monthly productions would be exceeded in less than only one year from the sale on June 30, 1961, the second assembly shop in Motomachi Factory only for Paprika will operated on May next year, and the system of Paprika mass production was established. In addition, New Corona RT40 type is that gains the explosive popularity as family car that goes in an international level of high performance and the high quality, and plays the big role brought close to "Toyota in the world".<sup>32)</sup> Toyota Automobile Industry came in addition to think that a new popular car with the dream was necessary to cause a real motorization in the latter half of 1955's and to is low-priced at the same time. It was located in the middle of Paprika and Corona, and was a demand of car by which the user of the mini-passenger car and Paprika had the purchase substitution desire. Tatsuo Hasegawa who became a development chief is describing as follows. So that it is used as a wide family car, even if it is a near evaluation satisfiable by the performance like the medium-size car, for instance, the livability and the feeling etc, ordinary user's hand doesn't get out in respect of the maintenance expense and the price, so to speak, the evaluation from the popular car user is a disqualification in 50 points as the popular car. The popular car does become a passing grade in 80 points or more in all respects.<sup>33)</sup> Subsequent, it is a peculiar technology, the car is characterized, which respect is made an improving sales point from 80 points especially, and makes it to the selling point. It was the car developed so, that is, the body was integrated with the frame, adopted the yuni of structure work to distribute the strength material to the key point, and

32) Company history edit committee of Toyota Automobile Industry, *History 40years Memory of Toyota Step*, Toyota Automobile Industry, 1978, p.261.

33) *Ibid.*, p.277.

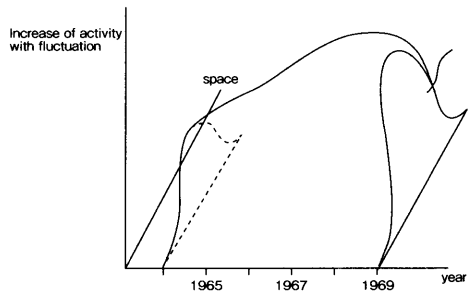
added the examination enough about the vibration by the one that was excellent as for lightness, strength, built-in, and the secret, and achieved a quiet body. This called Toyota Corolla, with the explosive vogue, and the appearance of Corolla became enough to wake up the popular passenger car boom. On the other side, the demand of the pickup truck expanded greatly, in the past of vogue Toyo Ace, Stout, and Daina were restyled one after another, the strengthening and the expansion of the small-size four wheel truck section were achieved.

The expansion of the Motomachi Factory was done in parallel with such a strategy of diversification. In a word, Motomachi Factory that had straightened the system as a passenger car of special factory newly established one after another the new establishment of the second machine factory and the expansion of the press factory, other small machine factories, the product maintenance, the vehicle audit factories, and the test truck and Paprika transportation course etc, in addition. The second machine factory completes as an engine special factory, straight the system of mass production for the Utype engine processing line of Paprika, the Rtype engine processing line, the mission processing line of Paprika, the 2Rtype engine processing line of new model Corona, and the engine of other small size four wheel of truck etc. The press factory is that is enhanced to twice in the floor space, and became the press factory of a worldwide level when a up-to-date press machine is introduced one after another, and it matches it to the existing press.<sup>34)</sup> The small machine factory aimed at the mass production of small parts that needed advanced accuracy such as the ball joints including the piston and kingpins, and the product maintenance and the vehicle audit factory demonstrated a power as a passenger car finality maintenance factory to achieve a further improvement of the shipment quality. Moreover, the establishment of a new factory comes one after

34) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile, op. cit.*, p.586.

another. First of all, it is a construction of Takaoka Factory on May, 1966. This Takaoka Factory was a specialty factory of mass production of the passenger car that queued up with Motomachi Factory in the scale, and the one that gathered the chic of the manufacturing technology that exceed out an international level about all the processes such as the body welding, painting, and assembly even if it saw substantially.<sup>35)</sup> Higashifuji Factory constructed continuously in November, 1966 as a special factory of the luxury car and the sports car and Miyoshi Factory was constructed one after another in in March, 1968 as a special factory of machining processing. Chart 3 is the one that the strategy of the many varieties of the passenger car (or, diversification), the expansion of demand, the development of product developments, the expansion of sales networks, the expansion of mass production systems and the TQC movements etc, were shown as an increase of the activity with fluctuation. The root problem of the automobile maker in our country of postwar days is a problem of decrease of the cost by mass production. This becomes possible for the first time that it was proved the market where a large amount of vehicles massproduced at the same time as as massproducing are sold. Therefore, even if the system of mass production of the automobile maker in our country is established, it is necessary to request the market from foreign countries when the domestic market that digests this is immature. The export business of Toyota Automobile Industry was charge of of the sales part before the war and after the war. How-

Chart 3 Increase of Activity with Fluctuation at Term of Growth



35) *Ibid.*, p.590.

ever, it was transferred to Toyota Automobile Sales Co., Ltd. (henceforth Toyota Automobile Sales) newly established on April 3, 1950. The effort of the overseas advance of Toyota Automobile Sales became full-dress in 1955.<sup>36)</sup> In a word, our country till then was under the occupation, is the condition that an overseas making a passage is not left thinking, and did not exist one shop of overseas agency. As a result, the mediation of the GHQ Economic Science Bureau and a little buying by the military assistance expense of occupation forces is extent that goes out sporadically to a Eastsouth Asian district. However, this situation changed completely. That is, it relates to two backgrounds. One is that there is room to which it pays attention to foreign countries as it is in the expansion of the domestic automobile market, the base of a business organization hardens at last, and the prospect of the future stands. Another is the development of a series of export promotion plan of the government to continuous balance of international payments in 1952. On the other hand, the Economic Science Bureau of GHQ had been suggesting Latin American advancement of Toyota Automobile Sales as a plan about a further revival of my country economy since about 1948. However, the chance of Latin American advancement of Toyota Automobile Sales actually started a personal thing. In a word, a former government official of GHQ has brought the demand of wanting for Toyota Automobile Industry to be made do Latin American export in Toyota automobile. At that time, there is even no overseas information network, not to mention the overseas agency. However, the demand was accepted in saying that the route that he develops might become a promising export market for the future unexpectedly. He paired immediately with the friend in Brazil, schemed a local preparation for reception, and assumed that Brazil and Argentina were promising export markets. Brazil in February, 1952 was decided the base of Latin American advancement,

36) Company history edit committee of Toyota Automobile Sales, *Together with Motorization, op. cit.*, p.233.

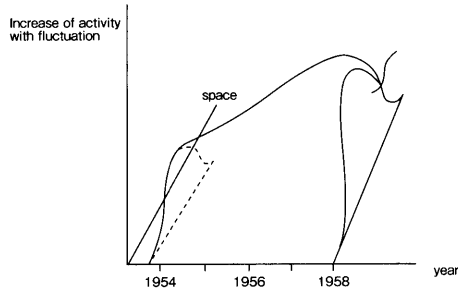
100 large truck FA types were exported, the overseas representative was made to arrive at São Paulo additionally, and the marketing research, the agency installation, and other sales activities began. However, new president Cbichecc who had been chosen by the election in 1955 came up with the policy of making to domestic production to promote this country industrialization in January, 1956, and promulgated the Automobile Domestic Production Law in June. Toyota Automobile Industry confers, corresponding to such a situation, with Toyota Automobile Sales, concludes the contract of a Brazilian Government to domestic production in November of the same year and establishes a Toyota Do Brazilian Overseas Subsidiary Limited Holding Company on January 23, 1958.<sup>37)</sup> On the other hand, the representative kept making an effort meanwhile expanding the sphere of export. As a result, a lot of Latin American nations of the mountainous region are have especially understood that there is a lot of demand in various car Randoclar of the four-wheel drive to be able to run freely about the moorland and the mountainous region with strong horsepower and strong foot time from the marketing research.

The advancement in postwar days to Eastsouth Asia starts from the first overseas agency in 1951, in a word, the establishment of Okinawa Toyota Automobile Sales Co., Ltd. However, the development of a real export market became full-dress in 1955 from the rebuilding problem of a domestic business organization. That is, Toyota Automobile Sales positively sent the overseas representative from 1955 to 1957 years to the locale, and investigated the local politics, the economic climate, and the automobile circumstances, etc. And, the preparations of the market cultivation were paved in the country that was able to have the expectation by setting up the agency. As a result, the sphere of export in Eastsouth Asia has extended remarkably. Especially, a Thai country was a good export market

37) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile, op. cit.*, pp.452~453.

that fought over 1 or 2 in Eastsouth Asia. Malaysia was still in strong control of Britain, Indonesia was an uneasy political situation, Burma were inclining at making to socialism, and Philippines had left the problem by feelings toward Japan. Chart 4 is the one that

**Chart 4 Increase of Activity with Fluctuation of Toyota Automobile Sales at Initial Term of Overseas Advancement**



an initial strategic decision making of advance in to the overseas market, a sales expansion strategy of the export market, the agency installation activity of the local representatives, the marketing researches, the activity of a sales, and PR activities, etc. were shown as an activity with an increase of fluctuation. It kept decreasing even year in the position that occupied it to the automobile export of our country though the export of Toyota Automobile Sales had expanded every year. This was indeed unwilling in the export idea of Toyota Automobile Industry and Toyota Motor Sales that had come as the first in the contribution to the national interest by the foreign currency acquisition. The maximum cause is that it did not having a so-called export competent car that passes internationally on both sides of the size of the automobile and the performance, was relying on Randoclar that the object market is small and the large truck, and that exists not in order of the system to promote the export improvement to the developing country this though it being recognized that the knockdown export is the most effective.<sup>38)</sup> First of all, it was "dream." to export the domestic production passenger car to the United States for my country automobile maker at that time. Toyota Automobile Industry put the dream into prac-

38) Company history edit committee of Toyota Automobile Sales, *Together with Motorization*, *op. cit.*, pp.296~297.

tice in advance of the other companies. Moreover, our country at that time was annoyed chronic by foreign currency shortage, and further foreign currency acquisition was a national request. In advancement to an American market, Volkswagens company in Germany had already concluded successfully. Toyota Automobile Sales will builded the sales network for oneself referring to the success in Volkswagens company in Germany, and established the local, overseas subsidiary, that is, the United States Toyota Motor Sales Co., Ltd. company by the halving investment of Toyota Automobile Industry on October 31, 1957. Moreover, it established one after another the Toyota Automobile Distributar Co.in Calfolnia state in February, 1958, and the New Jersey Toyota Automobile Distributar Co. November, 1959, from a complex United States tax system, especially the measures against a federal consumption tax.<sup>39)</sup> The United States Toyota Motor Sales Co., Ltd. company began the sale of the Crown at the same time as the local advertising and PR. However, the problem occurred. The point of costing the maintenance expense besides the unpopularity of the power shortage and the overweight of body and the maximum speed etc, was fatal. In a word, it runs up the repair expense and the maintenance expense after all because the durability to a continuous, high-speed driving is scarce, the consumption of oil and the overheating of engine and a frequent check of each part and the maintenance etc, are necessary, and an economic car is a conclusion of difficult to say though only the fuel expense is economical.

Thus, Toyota Automobile Sales and Toyota Automobile Industry will take the strengthening and the expansion strategy of export based on the decrease in the position because of the foreign currency acquisition. That is, is the rise of morale, the re-investigation of individual market, the setting of emphasis market, and the emphasis vehicles, the promotion of knockdown exports, the promotion of overseas marketing, the participa-

39) *Ibid.*, pp.251~252.



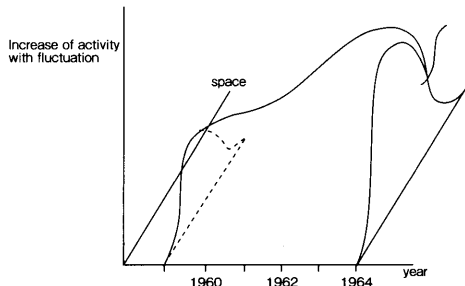
tion for overseas shows and rallies, and the plan of export five years.<sup>40)</sup> Only in the finished car export, it is clear that there are naturally limits in strengthening and the expansion strategy of export. However, it should be equipped fully with the management of domestic production, the management of shipping, the securing and management of local assembly factory, and the system of guidance of assembly technologies etc, by export of the knockdown. This was the principal cause that was passive to the knockdown export at Toyota Automobile Industry. However, it must shifting to the knockdown export according to the policy of making to domestic production in the country at the export destination or the policy changeover to industrialization. Randoclar and the large truck for Australia of Toyota Automobile Sales, were exported in July, 1957, those exports for Brazil shifted to the knockdown export in January, 1958, the small pickup truck and the Corona picking up for the Republic of South Africa shifted to the knockdown export in June, 1961, too.<sup>41)</sup> The export of the large truck and Randoclar for export for Eastsouth Asia, especially a Thai country, is continuously shifted to the knockdown export in October, 1962, those exports for the Philippines shifted to the knockdown export in addition. The accumulation of an honest effort of the export strengthening and the expansion strategy of Toyota Automobile Sales and the shift strategy to the knockdown export of Toyota Automobile Industry brought the large progress of export by the synergy effect with the development of a New Corona and the introduction of a New Crown. Especially, there was the remarkable one in the progress of export toward America. Toyota Automobile Industry positively participated in an overseas rally to improve the celebrity of a New Corona and a New Crown. And, the Australia Ann Paul Rally (The

40) *Ibid.*, pp. 301~310. Mitsukuni Hasegawa "Fluctuation and Process Dynamics of Organization System of Toyota Automobile Sales in Overseas Advancement" *Yamaguchi Economics Magazine*, 57.1, pp.31~35.

41) Mitsukuni Hasegawa "Fluctuation and Process Dynamics of Organization System of Toyota Automobile Sales in Overseas Advancement", *op. cit.*, pp.32~33.

first place in a New Crown foreign car) in 1964, 4000 Canadian Shell Rally (New Crown synthesis the second place), and Penaronca Rally (New Corona victory) in Southern Rhodesia, Mobile National Rally of Zambia (New Corona synthesis victory) and Torralrare South Africa (New Crona the first place, the second place) etc, was put the brilliant result.<sup>42)</sup> As a result, the car technical journal with the authority of 'Sports Car Graphic' also in the United States (October 1965 issue) 'Motor trend' (issue in November in the same year) and 'Road Test' (issue in November of the same year), etc. spoke very highly saying that "the Corona of Toyota is an attractive car for the American". And, the order for a New Corona and a New Crown in the United States increased rapidly, and entered the state that production doesn't catch up with the increasing order. Moreover, the progress of the overseas advance of the passenger car continued to other countries. From about 10,000 export numbers in 1968 to about 25,000 of 1969 in Canada, from about 18,000 export numbers in 1967 to about 37,000 numbers of 1969 in export for Europe, from about 14,000 export numbers in 1967 to about 26,000 numbers of 1969 in export for Latin America, and the export of Thai country and Australia is also increases rapidly every year.<sup>43)</sup> Chart 5 is the

**Chart 5 Increase of Activity with Fluctuation of Toyota Automobile Industry and Toyota Automobile Sales at Rapid progress Term of Overseas Advancement**



42) Company history edit committee of Toyota Automobile Sales, *Together with Motorization*, *op. cit.*, p.304.

43) Mitsukuni Hasegawa "Fluctuation and Process Dynamics of Organization System of Toyota Automobile Sales in Overseas Advancement", *op. cit.*, pp.40~41.

the emphasized markets and the emphasis models, the export strategies of knockdown, the participation in the overseas of rally and shows etc, were shown as an activity with an increase of fluctuation.

#### **IV Fluctuation and Evolution of Structure fo Organization System of Toyota Automobile Industry in Postwar**

The dynamics of organization system of Toyota Automobile Industry in the above, especially the increase of the activity with fluctuation at the term of growth ( I ) of Toyota Automobile Industry in postwar (increase of compact car of domestic production), the increase of the activity with fluctuation at the term of growth ( II ) (increase of passenger car and many varieties), the increase of the activity with fluctuation of Toyota Automobile Sales at the initial term of overseas advancement, the increase of the activity with fluctuation of Toyota Automobile Industry and Toyota Automobile Sales (progress period) has been clarified from the fluctuation and the dynamics of process. Let's continuously verify the growth of Toyota Automobile Industry from the viewpoint of the selforganization, that is, the structural evolution. The structural dynamics of selforganization, in a word, the structural evolution is formulated as follows. It is that the evolution of system evolves by accepting the inherited variation under the state that equilibrium is barely kept a system that manages a group autocatalysis toward chaos of edge between order and chaos. If this is interpreted the business organization, when in the whole of the activity with fluctuation seen in a total production activity of single group product at the time of St, the whole of the activity with fluctuation seen in the total production activity of a new product of this group or a new product group or the overseas export activity reach 45 percent thereabouts, it is that the

action of synergetic autocatalysis begins to lead the structure of organization system to evolution facing a chaos while maintaining the order in a complex life of a business organization. Moreover, when in the whole of the activity with fluctuation seen in a total production activity of a diversified product group or a diversified, regional group at the time of St, the whole of the activity with fluctuation seen in a total production activity or the overseas export activity in a new product of this diversified group or a new region of this diversified group reach 45percent thereabouts, it is that the business organization comes to accomplish the structural evolution through the action of synergetic autocatalysis facing chaos while barely maintaining the order in diversity and complexly.

Here, the structural evolution of the organization system of Toyota Automobile Industry in postwar is expediently divided roughly into the structural evolution of organization system at the term of growth ( I ), the structural evolution of organization system at the term of growth ( II ), and the structural evolution of organization system at the term of overseas advancement, in addition, arrange, verify detailed the fluctuation and structural evolution relate the domestic production of compact car, the fluctuation and structural evolution relate Crown and Corona (increase of passenger car), the fluctuation and structural evolution relate Corolla, Paprika and Mark II (increase of passenger car and many varieties), and the fluctuation and structural evolution relate the large truck and Rando-czar, the fluctuation and structural evolution relate Crown, New Corona and Corolla (sales expansion of passenger car). Moreover, the structure of the organization system is understood as the compound, structure systems that consist of a structural, hierarchical system of rule, a structural, hierarchical system of purpose, a structural, hierarchical system of information and communications, a structural, hierarchical system of decision mak-

ings and executions as already clarified. Of course, the evolution is seen in process dynamics of organization system though it is needless to say, the structural evolution is verified here. Therefore, the verification of structural evolution will be related to those four structural characteristics.

#### 1 Structural Evolution of Organization System at the Term of Growth ( I )

The structural evolution of organization system is a selforganization phenomenon being intertwined between the process dynamics of activity with fluctuation and action of autocatalysis. A chaos of edge prepares the stage of evolution. It did not go well the revival of Japanese economy in postwar. Walking of Toyota Automobile Industry was not the smooth one at all in similar. A lot of problems and the difficult problems in a severe occupation policy such as the specification of the compensation maintenance facilities, the discontinuance of munitions amends, and Zaibatsu cliques etc. and the hyper-inflation in postwar, Dodge lines, and the progress of stabilization crisis etc, had accumulated under special circumstances under the occupation in the future. Kiichiro Toyoda came up with the plan and policy that fundamentally revolutionized the management foundation of the company in preparation for a quick, new situation at time when a lot of managers were not able to decide the course for a while after the end of the war by shock of defeat not selfish. That is, the plan was, in sum, in the one that it tried to adjust to an environmental change as soon as possible the management foundation of the company, under of the prospect that the economy of our country will shift from the controlled economy during the war to the liberal economy like the United States in the near future. It was the one that tried concretely to maintain Koromo Factory as a specialty factory of mass production of the automobile, to produce a large amount of automobile that it was cheap and the quality is high, and to provide the competition with the first class car company in the world.

GHQ was, on January 20, 1946, specified as the first stage about 400 of arsenal army and navy, laboratory, the relative factory of aircraft etc, for the compensation maintenance facilities, as the second stage a dismantlement of Zaibatsu, that is, as a result was dismantled Toyota Industry on September 26, 1947.<sup>44)</sup> In addition, GHQ executed the labor reform again as the third stage extremely prompt, and ordering it. As a result, Kiichiro Toyoda was accomplished the maintenance of the system of production, the maintenance and expansion of cooperation company of automobile parts production (from Tokai district to Kanto district and the Kansai district), and the restructuring of a nationwide sales network in postwar licking the hardship of the occupation policy by GHQ while Toyota Automobile Industry Koromo Labor Union that had adjusted the staff and the operative to one in October 19, 1946 was formed in Toyota Automobile Industry.<sup>45)</sup>

However, a troublesome problem of making a lot of business organizations fall to an extreme management crisis. In a word, Azumahisashi Cabinet admitted the expense of a huge, temporary, military expense trying to prevent an economic catastrophe in postwar, and reached 26.6 billion yen by the amount in only three months until being prohibited by the GHQ instruction in November, 1946.<sup>46)</sup> This enormous amount of military expense is the one is paid as the retirement allowance and the demobilization expense of the serviceman civilian employee, as an unpaid price to the munitions company and a loss amends money according to order discontinuance. There is however a reactionary of austerity of life under the war, and general public's spending power is fueled, and the definite opportunity of hyper-inflation in postwar. Toyota Automobile Industry fell into the crisis since the company establishment by this hyper-inflation, and housecleaning, the wage cut, and the strike would be caused before

44) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, *op. cit.*, p.260.

45) *Ibid.*, p.254.

46) *Ibid.*, p.265.

long, and Toyota Automobile Industry separated and became independent the sales part of Toyota Automobile Industry for the company rebuilding, and made a Toyota Automobile Sales Co., Ltd.<sup>47)</sup> Moreover, president Kiichiro Toyoda retired to sever this vicious circle. Are successor president Taizoo Ishida owners of a strong fate? Moribund Japanese economy by hyper-Inflation has recovered again in less than no time with Korean War because of a military enhancing each country and the rapid increase of the strategy goods demand. Taizoo Ishida defended the policy of the advancement of Kiichiro Toyoda to the domestic production of compact car section well and executed the iron rule of the industrial world that a business organization “it foresaw always often in the boom in preparation for the recession, and led management in the future” is prosperous. He aimed under this policy, the modernization of the production facility that postwar days become superannuated, the improvement of efficiency by equipment rationalization, and make “Plan for the production facility modernization five years” modeled the Luge factory of maximum Ford who boasted of the most modern production facility, and executed it.<sup>48)</sup>

#### 1-1 Fluctuation and Structural Evolution related the Domestic Production of Compact Car

Kiichiro Toyoda say. Even though the Automobile Industry of our country when it faces a real competition with the car industry of Europe and America, became independent at last, . . . enough competitive power has not been acquired yet. In addition, the situation like the baby’s confronting the adult is expected that it is not possible expect this time as the cordial protection of the nation called the automobile manufacturing business method, the import duty of high rate like prewar days.<sup>49)</sup> Such circumstances are reflected, and Diesel Automobile Industry specialized the

47) *Ibid.*, p.309.

48) *Ibid.*, p. 332.

49) *Ibid.*, p.247.

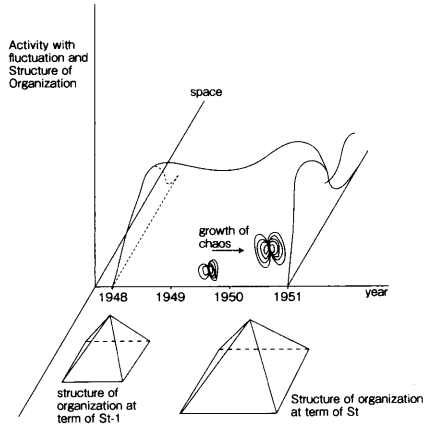
large truck of 7ton, Nissan Heavy Industry pour the main force into the production of the compact car Datsun, to avoids immediate competitions with an American car, and is aiming the footing of establishment by each specialized field. On the other hand, our company is that it will newly advance to the compact car section as preparations in the future making the best use of the experience of the past, straightening the system of mass production of truck. And, the plan of the domestic production of compact car was shown as follows. That is, ① engine is adjusted to 1000-1500 in the capacity of the cylinder. ② Vehicle dimensions are assumed to be total length 4500m m more greatly than past compact cars. ③ The structure as possible is as easy and ensures the function. ④ a fuel consumption can only reduces in consideration of domestic economic circumstances.<sup>50)</sup> Under this plan, the SA type passenger car was first made for trial purposes, completed it, and the SA type pickup truck was made for trial purposes next, continued with completion. Moreover, these domestic production of compact cars by the pet name of "Toyopet" was widely familiar. On the other hand, KCtype truck that had been produced with extreme materials shortage and inferior parts under control of the wartime returned to former type, were improved, and called BM type truck. The spindle in chart 6 uses the numerical value of the output to show the whole of the activity with fluctuation, and to quantify a total production activity of the domestic production of compact car. The number of total production in 1948 was 6703, and the number of production of the domestic production of compact car was 688. This is thought to be by the temporary production limitation of the domestic production of passenger car. Though the number of total production in 1949 was 10,802, the number of production of the domestic production of compact car increased suddenly to 3080. The number of the domestic production of compact car becomes 4177 in 11,706

50) Company history edit committee of Toyota Automobile Industry, *History 20years of Toyota Automobile*, op. cit., p.260.



the number of total production in 1950, and the number of the domestic production of compact car became 6807 in 14,106 the number of total production in 1952.<sup>51)</sup> The chaos in close relation to the complexity and the diversity of organization system reached the neighborhood of the breaking point at this time. First of all, this kind of fluctuation is characterized as an exponential increase. However, the complex, various problem existed on the house-

**Chart 6 Fluctuation and Structural Evolution of Organization Relate the Domestic Production of Compact Car**



cleaning of the employee, the wage cut, the strike, and the recovery effort to the cooperation between labor and management and the development of production rationalization movements, the preparation of operating fund of enormous amount according to introduction of installment plan system of sales, the entry of company in Europe and America to enter Japanese market etc, with the background. This complex, various problem are closely related, the action of autocatalysis is rapidly caused, and it has grown to the action of synergetic autocatalysis before long. And, that the whole of the activity with fluctuation related to the domestic production of compact car reaches a chaos of edge, and the organization system of Toyota Automobile Industry at this time transforms greatly through the action of synergetic autocatalysis, is accomplished the structural evolution, while it is barely maintaining a order. By the way, the proportion of the number of the domestic production of compact car to the number of total production in about 1951 was 48 percent. Then, what one was the structure evolved

51) *Ibid.*, p.700.

about the organization system? First of all, it is that an objective base of rule, and the individual employment contract of the approval requirement for the authority have been broken again to the large number of layoff and the wage cut to all employees. As a result, the organization system was confused again, strayed, and fell into a complete function stop. However, a new wage system was born from there. That is, it is improving the monthly wage system of staff and the daily wage system of operative, is to unite the wage system of staff and operative (basic wage + age wages or wage to ability) and the introduction of the minimum wage system. These became one step of the modern pay system. On the other hand, how will be about validity as a subjective base of rule? Time was needed though the community idea of the live-and-let-live of harmonious labor and management relations was connected with the recovery of mutual trust and mutual understanding. To the contrary, the employee education system (TWI: Training Within Industries) is introduced through the preparation of two years, the System of Originality-device Suggestion was conceived in 1951, and it was executed at once. These became specific medicines for the revival of validity as a subjective base of rule. In the employee, it is not given to the educational environment, a stimulation is little, and there were a lot of people who had the zeal wanted to study.<sup>52)</sup>

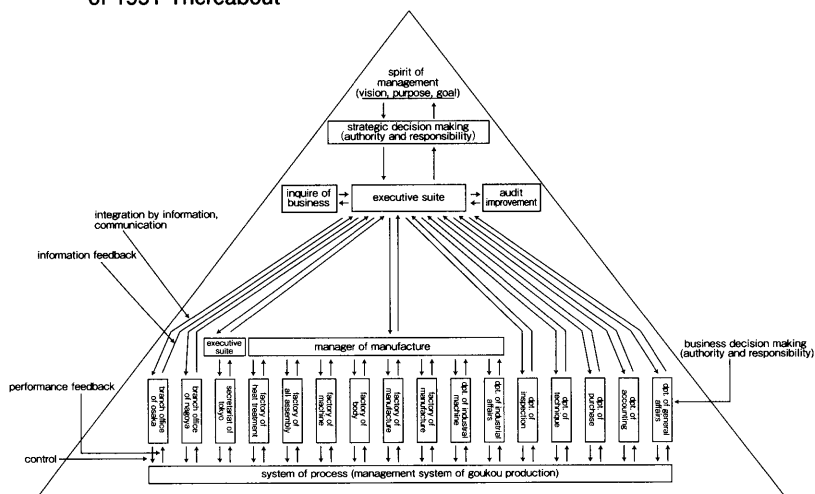
Moreover, it agrees with the desire that it wants to announce the opinion that each one thought about till then, and flourish to expect more the 883 suggestion in 1951 first and the 762 suggestion in 1952.<sup>53)</sup> First of all, a big change took place to integration when seeing from a principle of differentiation and an integration. In a word, the production decreases extremely, stock prices are also the sluggish as a result of the labor dispute, the more prolonged the labor dispute, the more has accumulated the loss of 14 million yen a day. The delay of the moment was not permitted, and

52) *Ibid.*, p.445.

53) *Ibid.*, p.437.

director president Kiichiro Toyoda, director vice president Kazuo Kumabe, and managing director Kohachiro Nishimura retired for the solution of the labor dispute on June 5, 1950. Taizoo Isida, director president Toyoda Automatic Loom Manufacturing assumes office as successor, and Fukio Nakagawa arrived at executive director.<sup>54)</sup> As a result, system of the troika to add director Eiji Toyoda was born. The highest management organization strengthened further started up “Plan for Production Facility Modernization 5 years. Next, a big change was seen also by the differentiation, in a word, the section. That is, it is the execution of the rebuilding idea based on the financing condition of the financial institution, and be a separation and an independent company in the sales part according to this. Toyota Automobile Industry has been attaching importance from at first of establishment to both the manufacturing department and the sales department compared the car wheels. This became establishment of Toyota Auto-

**Chart 7 Structural Evolution of Organization in Toyota Automobile Industry at Term of 1951 Thereabout**



Source: Company history edit. committee of Toyota Automobile Industry, *History 30 years of Toyota Automobile*, Toyota Automobile Industry, 1967, p.318. make by table 54.

54) Company history edit committee of Toyota Automobile Industry, *History 30 years of Toyota Automobile*, op. cit., p.302.

ble Sales Co., Ltd. at April 3, 1950. It was however, the best of strategy as long as this courageous decision making was maintained a combination following spirit "both, in a word, Toyota Automobile Industry and Toyota Automobile Sales is both wheels of automobile, and cannot advance even if either failed".<sup>55)</sup> Because according to the report material of Toyota Automobile Industry . . . after executing the Dodge line, a general economic world enters the depression period, and by blocking business person's money in the automobile sector, the cash purchasing power decreased remarkably, the defect of the bill collection and the increase of the pile of undelivered goods coupled with, and automobile maker came to rush into difficult management extreme. Toyota Automobile Industry doesn't obtain the exception one of this general situation, the one enumerated to keep the most important as a foundation measures in the sales, and to require the emergency is establishment of system of installment plan of sales, though it is urged to the necessity for establish a fundamental breakthrough plan in the management and sales. . . . the procurement of this huge capital in the automaker who has matched manufacturing and sales in past is however difficult at all, though the enormous amount of operating fund is needed for this installment plan system.<sup>56)</sup> Sales companies that make the automobile sales a business directly here besides the manufacturing section are set up, the manufacturing finance and the sales finance are distinguished, and the installment plan capital is does get entirely the procurement through this sales companies. Moreover, the introduction of the chief examiner system at this time is paid to attention. Because when the following dominant competition is established, the introduction of this chief examiner system brings an important meaning. That is, it is that is the first basic geometrical feature of the product development system that

55) Company history edit committee of Toyota Automobile Sales, *Together with Motorization*, *op. cit.*, p.91.

56) *Ibid.*, p.80.

achieves competing domination in all respects the period of development, the production of development, and the total commodity power.<sup>57)</sup> Thus, the 7 section of general affairs department (manager Yoshihiro Nakamura), accounting department (additional manager of director Naoya Kondo), purchasing department and inspection department (manager Masao Yamamoto), technology department (additional manager of director Hanzo Umehara), construction department (manager Junnosuke Sekiyama), industrial machine department (manager Sasuke Ikeda), and manufacturing manager of inclusive managing the 6 factory (additional manager of director Shouich Saito) is established newly and is formed the special organization of production system.<sup>58)</sup> In addition, the collection of clerical regulations of industrial numeral for the clerical rationalization of shop that consists of four including the industrial numeral the clerical regulations of calculation in Koromo Factory, the format collection of calculation use of industrial numeral, the clerical detailed rule of rationality in the business activity section as for special mention is fruited, the internal control of business activity that based acalculating control was established then to receive the set up of legal audit system of our country and the outline of internal control of business organizatin.

The idea about which it thought by relating the purpose to a purpose rationality of a purpose-means was not developed even though a rebuilding was achieved at last by Korean special procurements, and it escaped from the confusion of management. A lot of energy was poured how it corresponded into overwhelming competitive power of the car company in Europe and America, and the idea about which it thought by relating the purpose to the satisfaction of a semipurpose-means in this sense was centered. Harmonious labor and management relations will considerably

57) Takahiro Fujimoto, *Evolution of Production System—Organizational Ability and Sou-hatu Process saw in Toyota Automobile Industry*, Yuhikaku, 2000, p.72.

58) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, op. cit., p.318.

recover the formal communications, the informal communication also is made formal, and the formal communications have been expanded though information came to be concentrated on the top manager further more by the system of the troika.

## 2 Structural Evolution of Organization System at Term of Growth (II)

The structural evolution of organization system is characterized here as a phenomenon of selforganization that the process dynamics of the activity with fluctuation happen to being intertwined to the action of autocatalysis.

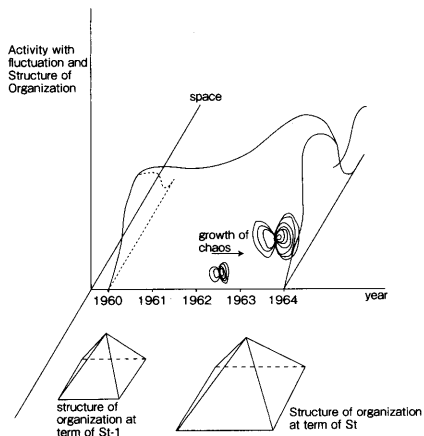
### 2-1 Fluctuation and Structural Evolution related to Crowns and Coronas (passenger car)

Let's clarify the fluctuation and structural evolution relates to Crown and Corona (passenger car) that returns the aspect a little. The structure of the automobile demand for our country changed greatly after 1956 That is, it is coming of "age of one's own car". First of all, it was an Europe and America car company that applied the initiative. Europe and America car company is put the period at the military expansion opportunity of the world, worries because of serious deflation, and has requested the outlet from a Japanese market. As a result, Shouji Okumura say, the kinds of passenger car that speeds to along the road in our country are now included into various each and the majority of products of the main producing nation except the sphere of Soviet Union, and the kind is called 70 or more. First of all, if the typical one is enumerated, General Motors Company car: Cadillac, Buick, Pontiac, Chevolet, Chrysler Company car: Chrysler, Desort, Dagge, Primus, Ford Company car: Lincoln, Mercury, Ford, and other each company car: Packard, Nash, Hudson, HenryJ, Willis, in United States, Renault, Simuca, Bset, Citroen, in France car, Opel, Volkswagens, Benz, DKW, Borgwordhansel, in Germany car, Rolls-Royce, Austin, Ford-console, Maurice, Hillman, Rover, Singer, Armstrong, Bentley, MG, Albis,

in Britain car, Fiat, Landseer, Alpha-Romeoetc, was the feeling of great success name “truly The International Exhibition of Car”.<sup>59)</sup> In such a situation, the industry section of the passenger car of our country, the trend of the age of welcoming the technical tie-up with the Europe and America car company has become predominant. Toyota Automobile Industry, on the other hand, is to recognizes a traditional spirit “Independent and independence in the management of business organization” since Sakichi Toyota, and determines the policy of the establishment of passenger car of domestic production.<sup>60)</sup>

First of all, the real passenger car Crown (RS20 type and RS30 type) in January, 1955, Crown deluxe (RSD type and RSD21 type) in December of the same year was announced one after another, and spearheaded in the medium passenger car section. On the other hand, the tendency that a popularity gathers in the compact car with cheap charge was seen among the taxi traders in the local city. Then, the assistance of Kanto Automobile Industry was obtained, Corona ST10 type was developed, and became an announcement in May, 1957. Moreover, a special factory of passenger car for mass production of Crown and Corona (new model PT20 type), that is, Motomachi Factory completed on September 18, 1959. The spindle in chart 8 uses the numerical value of the output to show the whole of the activity with fluctuation, and to

**Chart 8 Fluctuation and Structural Evolution of Organization Relate the Crown and Corona (passenger car)**



59) Company history edit committee of Toyota Automobile Industry, *History 20years of Toyota Automobile*, *op. cit.*, pp.372~373.

60) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, *op. cit.*, p.353.

quantify a total production activity of Crown and Corona. The number of total production in 1960 was 154,770, and the number of production of Crown and Corona (passenger car) was 42,118. The most was the one by an increase of Crown and Corona, that is, on 73,830 though the number of total production in 1961 increased to 210,937. The number of production of Crown and Corona was 128,843 though the number of total production in 1963 increased to 318,495, and the majority were still the one by the rapid increase of Crown and Corona. And, the number of total production becomes 425,764 in 1964, and the number of production of Crown and Corona became 181,738.<sup>61)</sup> It twined round the complexity and the diversity of the organization system at this time, and the chaos attained to the neighborhood of the breaking point. That is, a rapid increase in the number of production inevitably brings an increase of the number of men and the expansion of the organization system, and the cooperation between sections doesn't go smoothly so far. Moreover, from the diversification of production model, the advancement of technology in steady progress, an increase of the number of new face and a temporary operative, the difficulty of education in business organization etc, the management side cannot catch up with an increase of production, and, as a result, the quality side became dilatory compared with the efficiency improvement of production.<sup>62)</sup> Such complex, various problems are closely related, autocatalysis is caused, and it has grown to the action of synergetic autocatalysis rapidly. The organization system accomplishes the structural evolution while barely maintaining order by this action of synergetic autocatalysis. By the way, the ratio of the number of production of Crown and Corona at this time to a total production activity were 43 percent. Then, what one was the structure evolved in the organization system of Toyota Automobile Industry? Asahi Shinbunn Companyn in Spring, 1956 plan to dare 50.000k drive in

61) *Ibid.*, pp.766-767.

62) *Ibid.*, p.506.



London-Tokyo by Crown deluxe, Crown deluxe to which pick up Journalist Tsuji and cameraman Dobashi on April 30, the same year leaves London, runs 50,000k on desert and steep mountain path of Europe and Asia continent and showed the real value of the domestic production car in the world widely.<sup>63)</sup> At the opportunity, president Taizoo Isida inspect the car circumstances of Europe and America, is calling to every employee in the year head of 1957 “Toyopet crown to American” to achieve the earnest wish for many years, and in a company basic policy in 1963, made an express statement as that concentrates the all one’s energy outside in-company and expects the development into “Toyota in the world” (The second basic policy is “Toyota of the quality”).<sup>64)</sup> This is rubbing in a new vision, and it had the role to integrate all employees in the company, and the validity as a subjective base of rule was made to be strengthened. On the other hand, though the wages gap on which it was based the ability difference between the same age and the same service was caused, the authority as an objective base of rule changed stably from the stability of employment and an increase of wages in growing steadily.

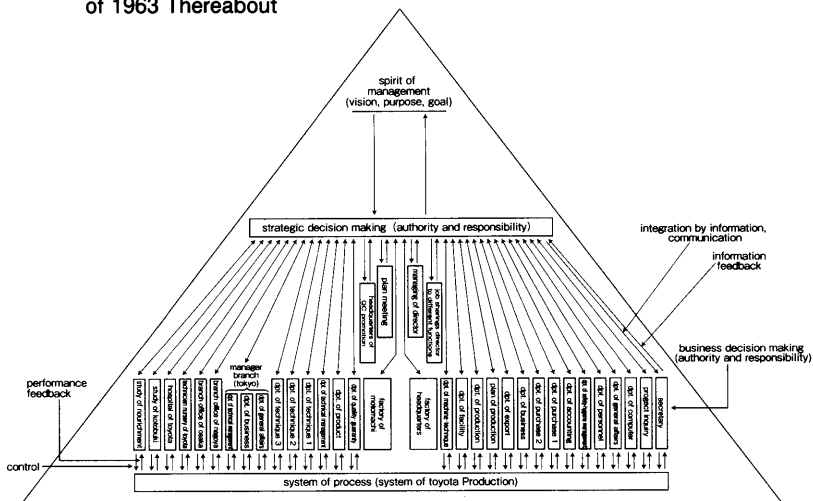
President Taizoo Isida was assumed office as the chairman on August 11, 1961, and Fukio Nakagawa assumed office as the president and, and, Eiji Toyoda assumed office as the vice president. Therefore, three people’s systems of the troika is maintained basically and Shuji Ono was strengthened by special promotion to the vice president. In respect of differentiation and integration, the big evolution appeared to both. That is, to plan the development into “Toyota in world”, “Good article and good idea”, and “Achieve the establishment of mass production system and the low price, contribute to the development of economy in our country”, it is necessary to have strengthened the system of the top management to is thorough

63) Company history edit committee of Toyota Automobile Industry, *History 20years of Toyota Automobile*, *op. cit.*, p.513.

64) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, *op. cit.*, p.523.

the Total Quality Control and to promote the Toyota production system. First of all, the project conference was newly established. This was done the decision making of top management referring to the opinion of the middle management (top-down and middle-up), done moreover timely the quick decision making of management, and it was in the place where it had tried to improve the mobility of management. Next, the board of managing directors continued. This board of managing directors is in the place where it tries to discuss a matters of weight in the strategy over inside and outside emphatically, while the project conference chiefly discusses the matters of weight in the business execution of each section through a lower mechanism (for instance, conference and committee, etc. Toyota Automobile Industry and Toyota Automobile Sales came to need making of the cooperative relationship between the two companies more than past “both circles of the car” intimate the expanding of the size of a business and complicating the business. The concrete measure is installation of

Chart 9 Structural Evolution of Organization in Toyota Automobile Industry at Term of 1963 Thereabout



Source: Company history edt. committee of Toyota Automobile Industry, *History 30 years of Toyota Automobile*, Toyota Automobile Industry, 1967, p.528.

“Toyota Automobile Industry and Toyota Automobile Sales combination conference”.<sup>65)</sup> And, it was understood that it was a problem to improve, and to strengthen cooperation on the side between sections, and became an introduction of “two or more directors’ jobsharings system according to the function” in thoroughness of TQC and promotion of Toyota production system. In a word, up to now, there is a tendency to become person representing the interests of a group of each section because each part director in charge (director) is run after by mass production (sectionalism), and the cooperation between sections has deteriorated. To improve this, it voluntarily spearheads newly by two or more directors, the system of management according to function be established, and the cooperation between sections is improved and be strengthened. That is, it settled down first in the function division of 10, the function division of 12 next, and the function division of 8. According to it, it is allotment of cost management function : Jouichi Matsuo (manager), Shoichiro Toyoda, Akio Tutsumi, Taichiro Ohno, Masaaki Noguchi, allotment of quality control function : Touzou Yabuta (manager), Shoichiro Toyoda, Hanzou Umehara, Taichiro Ohno, Masaaki Noguchi, allotment of technology and product design function : Tatsu Inagawa (manager), Shoichiro Toyoda, Hanzou Umehara, Akio Tutsumi, Masaaki Noguchi, Touzou Yabuta, allotment of production preparation function : Akio Tutsumi (manager), Taichiro Ohno, Masaaki Noguchi, Tatsu Inagawa, Shuuta Mori, allotment of purchasing function : Shuuta Mori (manager), Kenmei Yamamoto, Shouhachi Hanai, Touzou Yabuta, allotment of Sales function : Shouhachi Hanai (manager), Shoichiro Toyoda, Hanzou Umehara, Tatsu Inagawa, Shuuta Mori, allotment of personnel function : Kenmei Yamamoto (manager), Shouhei Takeuchi, Taichiro Ohno, Jouichi Matsuo, Touzou Yabuta, allotment of inquire · clerk management function : Shouhei Takeuchi (manager), Shouhachi Hanai, Jouichi

65) *Ibid.*, pp.520.

Matsuo, Kenmei Yamamoto Here, the manager director accomplished the line function, the director accomplished the staff function.<sup>66)</sup> Moreover, the function department (for instance, project office of product, project office of production, two division of purchasing, three division of technology) that relates newly to promotion of TQC and Toyota production system, the export department, and the safety hygiene management department was set up, in a past the industrial machine parts, forged parts, casting parts, machine parts, body parts, and total assembly parts was redistributed in the headquarters factory and Motomachi factory. As a result, it was more flexibly transfigured and transfigured to a flexible structure in the principle of the differentiation and integration. The thoroughness in TQC and Toyota production system developed the idea that the purpose is related to a purpose rationality of a purpose-means, and made to established. The idea area about which it thought by relating the purpose to the satisfaction of a semipurpose-means came to be limited to the innovative activity. Information and communications have evolved to complex information and communications (complex information and communication). It means that the sending and the acceptances of information and communications is related the top down, the staff down, the middle down, the staff up, the middle up, and the bottom up, and the acceptance of information and communications becomes complicated.

## 2-2 Fluctuation and Structural Evolution related to Corolla, Paprika and Mark II (many varieties of the passenger car)

An increase in individual demand for the passenger car demand our country was remarkable came to think the popularization age of passenger car. When a New Corona (PT 40 type) won the domestic and foreign overwhelming popularity and a favorable review, Toyota Automobile Industry was planning the development of a new popular passenger car

66) *Ibid.*, p.527.

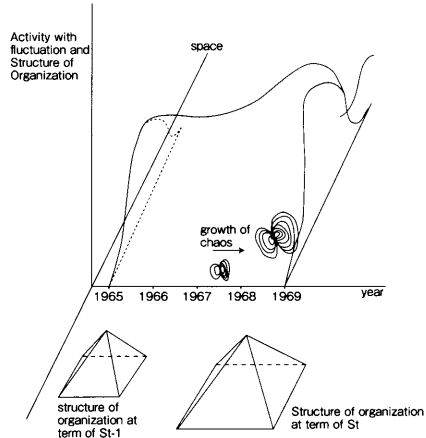
with the low price and the dream. This project car is Corolla. The engine is newly developed as K type engine, and 1077cc of the four water-cooled cylinder calls a big echo for 1000 popular cars of other companies as “afford of plus cc”, and the body is light, is strong, excelled also in the construction and the secret, and achieved quietness.<sup>67)</sup> As a result, Corolla showed the explosive sales, and became the construction of a special factory, that is, Takaoka Factory. Toyota Automobile Industry had already made the Paprika for trial purposes based on the national car plan of the Ministry of International Trade and Industry, and was announcing. However, it did not show increasing sales as expected. And, Corona Mark II (RT60 type and RT70 type) to which the international commodity was abundant was developed as one size more greatly than Corona and as a high class model, on the base of results of “Bestcellar car” Corona in September, 1968 and were announced. The engine added 2R type and further 1900 cc · 8R type based on the one that had been installed in Corona. It is that became in one that image of arrow line is left in body, and a lot of new function such as the energy absorption steering wheels and the two system type brake devices etc, were taken in consideration of concern of the world for safety.<sup>68)</sup> This Mark II was also popular among a similar Corona inside and outside the country. The spindle in chart 10 uses to show the whole of the activity with fluctuation, and the numerical value of the output to quantify a total production activity of Corolla, Paprika, and Mark II. The number of total production in 1966 was 587,539, and the number of production of Corolla, Paprika, and Mark II was about 73,394. The number of total production in 1967 was 832,130, and half the increase was almost an increase of the number of production of Mark II, that is, Corolla, Paprika, that is, the one of the increase by about 182,899. The number of total production

67) Company history edit committee of Toyota Automobile Industry, *History 40years Memory of Toyota Step*, *op. cit.*, p.277.

68) *Ibid.*, p.315.

in 1968 became 1,097,405, and the number of production of Corolla, Paprika, and Mark II was about 344,868, and the majority of the increase were occupied. And, the number of total production in 1969 becomes 1,471,211, and the number of production of Corolla, Paprika, and Mark II became about 716,146. It twined round the complexity and the diversity of the organization system at this time, and the chaos reached the neighborhood of the breaking point. The complex, various problems for the expansion of the number of total production of a domestic automobile (that is, at 1,875,614 in 1965, at 3,146,486 in 1967 and at 4,674,932 in 1969<sup>69)</sup> the diversification of demand (specification and capability of car corresponding to age, income, and preference of user), a timely (timely) delivery of car to user, and the strength of overseas advancement etc, cause the action of autocatalysis and it has grown even to the action of synergetic autocatalysis rapidly. This is seen to the declaration of the resolution “defend my castle for myself” of chairman Taizoo Isida, and in the shift to the system of a full line (system to offer the choices of the car put corresponding to age, income, and preference of user) by the decision of “Automobile Industry and Automobile Sales of Combination Conference”.<sup>70)</sup> That is, the structure of the organization system of Toyota Automobile Industry transforms

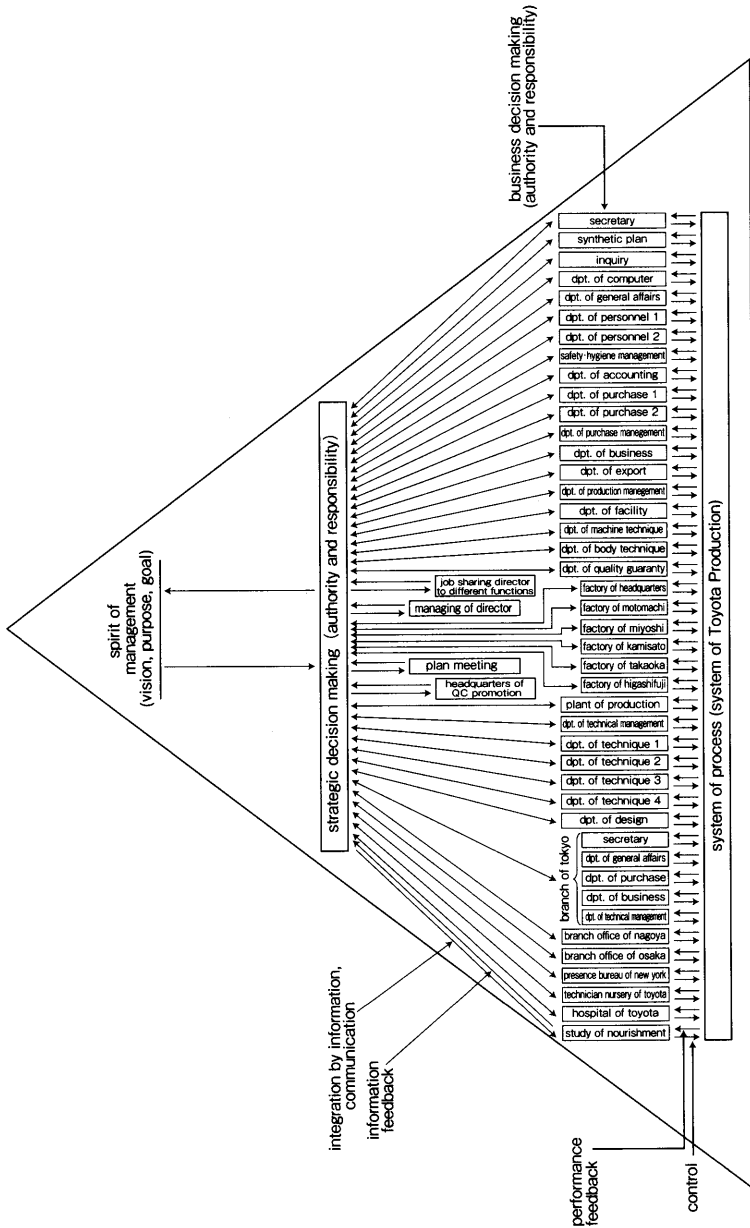
**Chart 10** Fluctuation and Structural Evolution of Organization Relate the Corolla, Paprika and Mark II (many varieties of passenger car)



69) Company history edit committee of Toyota Automobile Sales, *Step to the World—History 30years material of Toyota Automobile Sales*, Toyota Automobile Sales, 1980, pp.58~59.

70) Company history edit committee of Toyota Automobile Industry, *Unlimited Creation - History 50years of Toyota Automobile*, 1987, p.486, p.493~502.

Chart 11 Structural Evolution of Organization in Toyota Automobile Industry at Term of 1969 Thereabout



Source: Company history ed. committee of Toyota Automobile Industry. *History 30 years of Toyota Automobile Industry*. Toyota Automobile Industry, 1967. p.752.

while barely maintaining the order by the action of synergetic autocatalysis, and accomplishes the evolution in around 1969. By the way, the ratio of number of production of Corolla, Paprika and Mark II that occupied to the number of total production at that time, were 48 percent.

Then, what one was the structure evolved about the organization system? First of all, a big change took place in a structural, hierarchical system of rule. That is, it is an improvement of the wages classification that relates to the authority as an objective base of rule. It be to have tried to divide into the beginner class, the middle class, and the higher rank because the management of young people had been needed from a large amount of young labor adoption in the general position. Against, It is done the three division of the higher class, the middle class, and the beginner class, to solve the extension of dissatisfaction caused from lack of semi-management post because of change in employee's age composition (rapid increase from 30 to 40 years) and service composition (increases of 8~15 years), and became the guidance employment, the semi-guidance employment, and the beginner class guidance employment in guidance employment.<sup>71)</sup> On the other hand, the new development was seen in validity as a subjective base of rule. The interpersonal relationship activity of Toyota Automobile Industry starts historically from an in-company group, though it is Toyota club, office recreation, movement of making the bright dormitory, and movement of PT, and having changed into the short span of time greatly extremely, when arriving in the latter half of 1965's.<sup>72)</sup> That is, it was to have located clearly to the role to support a formal education by an informal interpersonal relationship activity. For instance, the ratio of sports and the amusement event decreased, it was a movement said that let's do

71) Youiti Koyamae dit, *Giant Enterprise System and Worker—Research of Toyota Production System Method*, Ochanomizu Bookstore, 1988, p.242~243.

72) PT movement is a movement that aims to talk both for superior, subordinate, and colleague in each office, to deepen a mutual understanding, and to make a bright office at the discussion center of the one to one.



running the personal growth and the mutual enlightenment through the informal social gathering of executive and superior of office, workshop etc. It seems that this led to strengthening the validity as a subjective base of rule by the establishment of labor-management mutual trust based on the thought and the spirit of "Toyota Platform". In the principle of the differentiation and integration, a big change took place. President Fukio Nakagawa died suddenly in October, 1967. As a result, the system of the troika that continued for 17 years ended, and it shifted to the system of collective leadership when Eiji Toyoda assumed office as the president. About the differentiation, the integrated planning office, the design room, the purchase management department, and the fourth engineering department were newly established to answer the specifications and the capability of various passenger cars corresponding to age, income, and preference etc, of user and personnel department was enhanced the first section and the secondary section for the manpower securing, and the body technical department was returned from the factory. Moreover, to correspond to the various specifications and the capability of the passenger car, and the expansions of demand, Kamisato Factory, Takaoka Factory, East Fuji Factory, and Miyoshi Factory were newly constructed. TQC and the Toyota production system have remarkably developed the idea that the purpose is related to a purpose rationality of a purpose-means. However, the change and the diversity of users' needs newly expanded the idea area about which it thought by relating the purpose to the satisfaction of a semipurpose-means. Moreover, the compound information and communications brought the information processing and the integrated quality information system by the computer by further complexity and diversity's joining. The former is chiefly used the managing and proceeding of information to the construction of a new factory, the diversification of type,

the increase of numbers of production, the part tables, the latter is chiefly used the managing and proceeding of information to the collection and analysis of complaint information, the production of type, the automobile deliveries and transportation, the shipping, and the registration ect. Still, informal information and communications kept occupying an important position in the interpersonal relationship activity.

### 3 Structural Evolution of Organization System at Term of Overseas Advancement

#### 3-1 Fluctuation and Structural Evolution related to Large Trucks and Randoclar

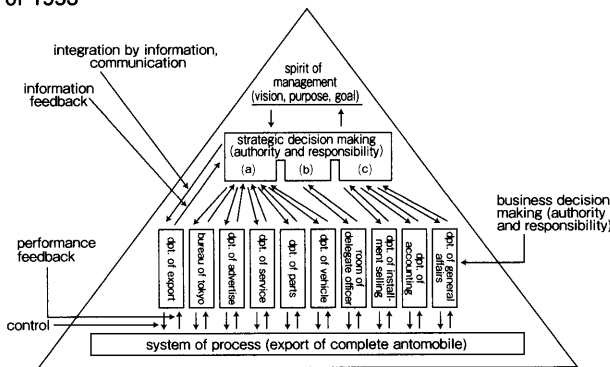
The export business of Toyota Automobile Industry were the charge of the sales part as for during prewar days and postwar days. Therefore, it is necessary to pay attention to Toyota Automobile Sales Co., Ltd. (hereafter, Toyota Motor Sales) newly established in 1950 to capture the activity of overseas advancement as an organization system. After the war, the automobile export of our country completely began the state of the white paper. Toyota Automobile Industry did two (each one SA type passenger car for Egypt, BX type truck for Okinawa) of exports in 1947 when GHQ permitted the restart of a private trade with the limitation, and started the automobile export of our country of postwar days. However, this were chance exports, and no results of the effort of a business organization. President Kiichiro Toyoda advocated the establishment of the automobile export promotion association in January, 1949, and assumed office as this meeting chairman in April of the same year. And, he said that the contribution to the national interest by the foreign currency acquisition is made the first sense, and the decision of the export promotion of the domestic production automobile was described.<sup>73)</sup> Then, I will see the export promotion and the export promotion of Toyota Automobile Sales from the

73) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile, op. cit.*, p.447.

structure of the organization system. First of all, it is seen extremely the immature structure of organization from chart 12 as well as the establishing initial of other company. Toyota Automobile Sales shared “Toyota Platform” with Toyota Automobile Indusyty, was added a practice idea (in a word, the first principle creed of customer, the setting of purchasable price and the support of general public) of Shotaro Kamiya who had been called “God of sales”, was formed an original culture of organization.<sup>74)</sup> Moreover, this is also that is the pursuit of the vision of Kamiya’s “rich social-making by automobile”. This vision was called the Kamiyaism, and infiltrated deeply between employees. Thus, Toyota Platform, Kamiya’s practice ideas, vision and charismas came to supplement the authority as an objective base of rule, not only allowed the validity as a subjective base of rule, though were recovering the trust of the employment contract that Toyota Automobile Indusytyhe had lost in postwar (establishment of new labor and management relations).

The decision making was divided into the strategic decision making

**Chart 12 Structural Evolution of Organization in Toyota Automobile Sales at Term of 1953**



Source: Company history edt. committee of Toyota Automobile Sales, *Together with Motorization*, Toyota Automobile Sales, 1970, p.88.

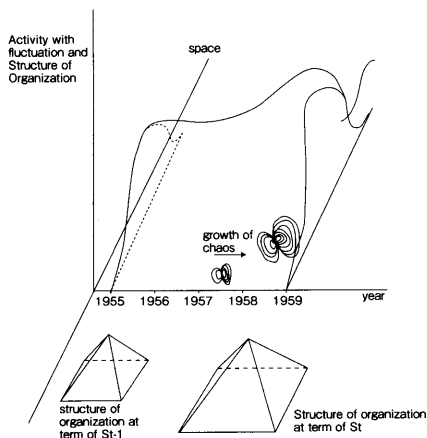
74) Company history edit committee of Toyota Automobile Sales, *Together with Motorization, op. cit.*, p.38.

and the operating decision making based on principle of the differentiation and integration. Most of the strategic decision making concerning the sales business whole was seized by Shotaro Kamiya though the top management was constituted a president Shotaro Kamiya, managing director Shiro Ōnishi, director Hide Nagai, and director Shikanosuke Hanasaki in structure of organization. It divides into a general affairs department, accounting department, an installment plan department (managing director Nagai charge above), a representative board room (director Hanasaki charge), a vehicle department, a commodity department, a service department, an advertising department (managing director Ōnishi charge above), the export department, and the Tokyo office about the differentiation, and the secretary room is given the staff's role.<sup>75)</sup> It was difficult to think by being likely to say it not was between after the company was established and relating the purpose from the change in buyer's (user) caprice and preference to a purpose rationality of a purpose-means though in Toyota Automobile Sales there was a clear purpose. Therefore, the idea about which it thought by relating the purpose to the satisfaction of a semi-purpose means was a center. Moreover, the informal communications occupied many as shown in Kamiya's one spirit theory in the development of shop though the top manager concentrated information, The spirit theory is that, of course, there is proof of rationalism The problem is well, how is to be transformed the immature structure of organization system, and to have accomplished the evolution. Here, the activity with fluctuation that is related the activity of overseas advancement by large truck and Randoclar (meaning of the cruiser of land), action of autocatalysis, and selforganization, that is, the dynamics of structural evolution is a problem. The spindle in chart 13 show the whole of the activity with fluctuation, and uses the numerical value of the production or the number of export

75) *Ibid.*, p.88.

to quantify a total production activity of large truck and Randoclzar. The number of total production of large truck and Randoclzar in 1954 were 9688, and those numbers of export were 363. The number of export has increased to 896 twice or more though the number of total production of large truck and Randoclzar in 1956 slightly decreased to 8940. And, though the number of total production of large truck and Randoclzar increased to 15,847 in 1957, those numbers of total production in 1958 changed oppositely to a decrease 10,210. However, the number of export of large truck and Randoclzar increases suddenly to 4117 in 1957, and increased to 5523 in 1958.<sup>76)</sup> Especially, the majority of the sudden increase were the one by Randoclzar. The complexity and the diversity of the organization system twined at this time, and the chaos reached the neighborhood of the breaking point. That is, because it did not do the effort of the export improvement only for the improvement of the national interest by the foreign currency acquisition, the cost reduction by mass production was an important problem of Toyota Automobile Industry at the same time, and the export improvement was a plan of the solution of the problem. Therefore, the conversion to the industrialization policy of Thai country of Eastsouth Asia that was the export base, the promulgation of Automobile Domestic Making Law of new president Cbichecc of Brazil in Latin America etc, are caused newly the complex, various problems, cause the autocatalysis by this,

**Chart 13** Fluctuation and Structural Evolution of Organization Relate the Large Truck and Rondoclzar

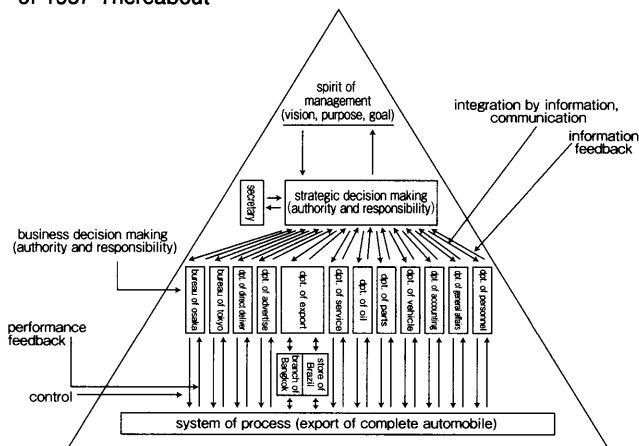


76) Company history edit committee of Toyota Automobile Sales, *Step to the World – History 30years material of Toyota Automobile Sales, op. cit., p.115.*

and have grown even to the action of synergetic autocatalysiss before long. By the way, the ratio of the number of export of large truck and Randoclar occupied to the number of total production was 46 percent at that time.

Then, what one was the structure evolved ? The domestic production of passenger car is exported to the United States by Toyota Automobile Sales 20 years history “according to Motorization”. This is “dream”, and was “achievement of the dream” for the automobile industry in our country at that time.<sup>77)</sup> This became the one rubbing in the vision, to integrate all employees in the company, to make it encourage, and to make allowed the validity as a subjective base of rule. Moreover, the wage system applied basically to the wage system of Toyota Automobile Industry and was a situation in which it escaped from the management crisis, and the reliability to the employee’s employment contract was being recovered. In such, Toyota Automobile Sales and Toyota Automobile Industry are that

Chart 14 Structural Evolution of Organization in Toyota Automobile Sales at Term of 1957 Thereabout



Source: Company history edt. committee of Toyota Automobile Sales, *Together with Motorization*, Toyota Automobile Sales, 1970, p.25.

77) Company history edit committee of Toyota Automobile Sales, *Together with Motorization*, op. cit., p.247.

agrees on no reliance to the trading company because of following the success case of Volkswagens company, and the establishment of the sales network by advancement for oneself judge as effective, and the possession of the overseas subsidiary at the same time.<sup>78)</sup> That is, it is the establishment of United States Toyota Motor Sales Company (president Shotaro Kamiya and the local responsibility vice president Tokutarou Kobayashi). Moreover, the success case with Volkswagens company means that Germany Volkswagens company establish the United States Volkswagens company in 1954, and the numbers of export rapidly increased from about 30,000 in 1955 to about 50,000 in 1956 by the establishment of sales network for oneself. In respect of the differentiation and integration, the change appeared. First of all, the organization of board directors strengthen from the system of four person to the system of ten person. Moreover, the operations department is differentiated from the eight department to the ten department (personnel departmen : depuly manager Susumu Ōtake, general affairs department : manager Kichiro Yamashita, accounting department: additional manager of director Riyuji Kamiya, vehicle department:additional manager of director Shikanosuke Hanasaki, part and oil department: additional manager of director Teizo Yamamoto, service department: additional manager of director Masaki Akasaka, export department : additional manager of director Atsusi Nakae, advertising and direct delivery department : additional manager of director Masayuki Kato).<sup>79)</sup> Especially, the export department has been expanded from two sector to three sector. The idea about which it thought by relating the purpose to a purpose rationality of purpose-means from a difference of cultural, political characteristic by countries of the overseas advancement activity was difficult, the idea about which thought by the purpose to the satisfaction of a semipurpose-

78) *Ibid.*, p.250.

79) Company history edit committee of Toyota Automobile Sales, *Together with Motorization – material –*, Toyota Automobile Sales, 1970, p.25.

means occupied the body power about the systematization of the purpose. Formal and informal communications became complicated from the diversity of the preference of the user and the development in an overseas market in communications though information concentrated on the top management.

### 3-2 Fluctuation and Structural Evolution related to Crown, New Corona and Corolla (passenger car)

Toyota Automobile Industry is corresponding an Industrialization Policy in a Thai country of the export base in Eastsouth Asia, the Policy of Automobile Domestic Making of Latin American Brazil, Mexico, and the Republic South Africato, moreover, the export of the entire automobile is judges that it is difficult, and shifts to knockdown export<sup>80)</sup> (strictly, method to export with Complete Knock Down chiefly and to do only the assembly production in the locale). On the other hand, the United States Motor Toyota Sales Companies establishes one after another California Toyota Motor Distributar Co. in 1958, New Jersey Toyota Motor Distributar Co. in 1959, considering an American Tax Code, and increases the dealer contract.<sup>81)</sup> It suffered a disastrous defeat by marketing battle due to the power shortage, the overweight of body and the durability shortage to a continuous, maximum speed driving etc, though praising very highly that car technical journal "Automobile News" of the United States is "car that had had the good ride of large car and the economy of compact car" as for the Crown. A similar problem happens in succession, and the export to the United States is frustrated though compact car Teara (Japanese named Corona) was continuously turned on. The spindle in chart 15 uses the numerical value of the number of export to show the whole of the activity

80) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, *op. cit.*, p.563~568.

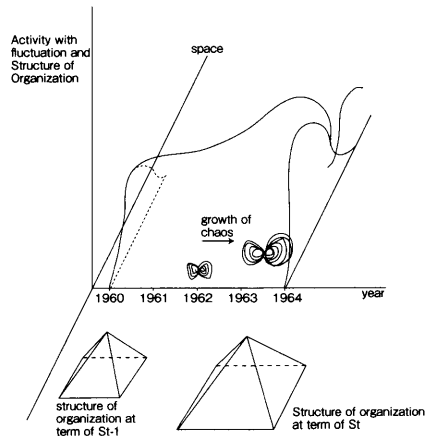
81) Company history edit committee of Toyota Automobile Sales, *Together with Motorization*, *op. cit.*, pp.251~252.



with fluctuation and to quantify a total export operation of a Crown, New Corona, and Corolla (passenger car). The number of total export in 1959 was 6134, and the number of export of a Crown, New Corona, and Corolla was 1822. The number of total export in 1961 is 11,675, and the number of export of Crown, New Corona, and Corolla has increased to 4417 twice or more. And, the number of total export slightly decreased to 11,209 in 1962, and the number of export of Crown, New Corona, and Corolla changed a decrease to 3099. However, the number of total export increase rapid 24379 in 1963 again, and the number of export of Crown, New Corona, and Corolla increases suddenly 9259.<sup>82)</sup> Recently, it twined round the complexity and the diversity of the organization system, and the chaos reached the neighborhood of the breaking point. That is, the exposure of the capability problem is against the spirit “the mind will be done to the research and the creation, and precedence in the current of the times always” of “Toyota Platform”, gives birth to the mutual trusts between a technology formation and overseas salesman

to a complex relation. And, it is dishonor that it is lost a top seat by the number of export, though Toyota Automobile Industry and Toyota Automobile Sales came as the first sense for the contribution to the national interest by the foreign currency acquisition. These events cause the action of autocatalysis, and it has grown to the action of synergetic auto-

**Chart 15** Fluctuation and Structural Evolution of Organization Relate Crown, New Corona and Corolla (passenger car)



82) Company history edit committee of Toyota Automobile Sales, *Step to the World – History 30years material of Toyota Automobile Sales*, op. cit., p.108, p.115.

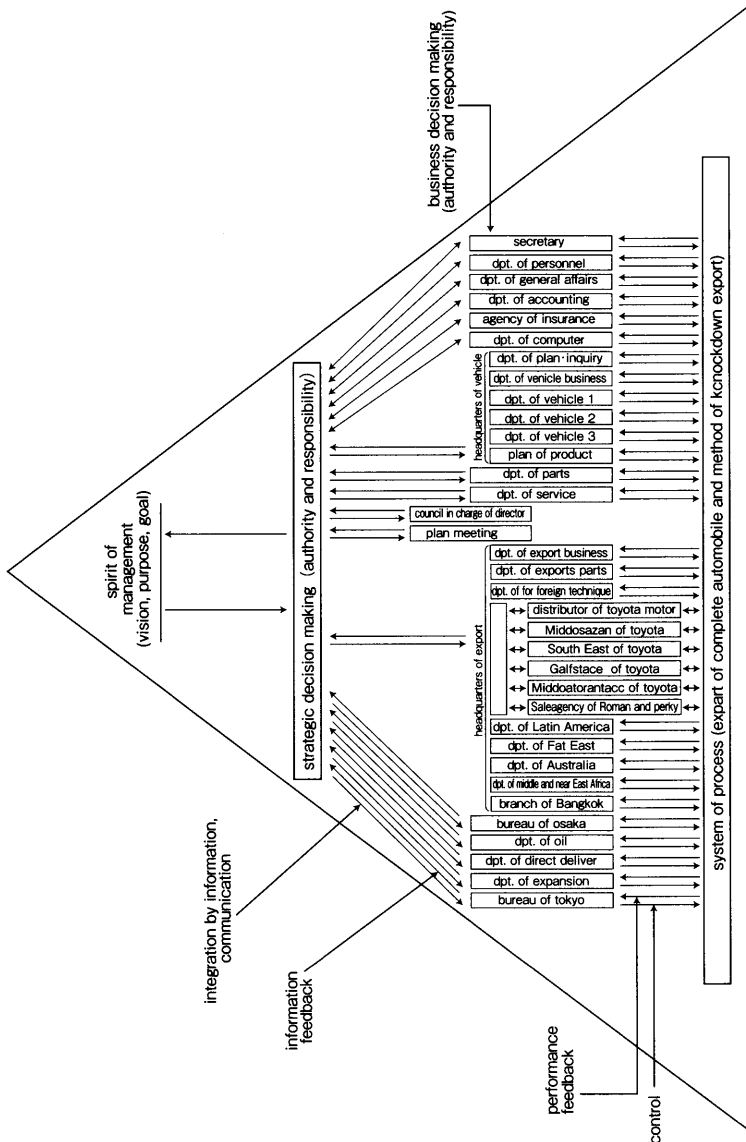
catalysis. The structure of the organization system accomplishes the evolution while barely maintaining the order by this action of synergetic autocatalysis. By the way, the ratio of the number of export of Crown, New Corona, and Corolla that it occupied to the number of total export at this time, were 38 percent.

Then, what one was the structure evolved about the organization system? The wage contract that is an objective base of rule, and the approval requirement for the authority synchronized with the growth of the right shoulder going up of Toyota Automobile Sales, was guaranteed by an increase in wages in the right shoulder going up, and the provision of overseas basic wage (apply to a domestic basic wage) + allowance of an overseas going for one's post was promised positively to the staff of overseas assignment. Thus, the distrust on the worker side to the employment contract like after the war wiped out. On the other hand, Toyota Automobile Industry is that concentrates the all one's energy outside in-company and hangs to the vision out development into "Toyota in the world".<sup>83)</sup> Toyota Automobile Sales and the employee also encouraged especially the export section and the overseas business member in response to this. That is, the company integrates, and has improved the validity as a subjective base of rule further more by rubbing in this vision. A big change took place when seeing from the principle of the differentiation and integration. In integration, the plan conference is newly established aiming at organic integration of each function in company. Moreover, the system of charge director is adopted newly to measure the strengthening of representative director's authority, the establishment of the system of responsibility, and the speed-up of decision making.<sup>84)</sup> In the differentiation, it is an installation of the export headquarters in first. The new establishment of the export

83) Company history edit committee of Toyota Automobile Industry, *History 30years of Toyota Automobile*, *op. cit.*, p.523.

84) Company history edit committee of Toyota Automobile Sales, *Together with Motorization*, *op. cit.*, pp.316~318.

Chart 16 Structural Evolution of Organization in Toyota Automobile Sales at Term of 1963 Thereabout



Source: Company history ed. committee of Toyota Automobile Sales, *Together with Motorization*, Toyota Automobile Sales, 1970, p.323.

headquarters is reinforced the measures of the system of export to recover a top seat lost by the number of export, and vice president Shiro Ōnishi arrives at the general manager, it is composed from the seven department (department of export operation: additional manager of director Shinji Araki, department of foreign technique: ditto, department of North America: additional manager of executive director Naoya Kondou, department of Latin America: ditto, department of Far East: additional manager of managing director Shinji Araki, department of Australia and Asia: ditto), the twenty sector, and a branch, and the bureau of visitor.<sup>85)</sup> And, the department of plan survey (additional manager of vice president Shiro Ōnishi) that takes charge the decision of the long-range management planning, the improvement on all company business accomplishment side, all company plan, and the coordination function is newly established in the second, is enhanced the department of vehicle, and became it from the first vehicle to the thirdly vehicle including the product planning room of new establishment (additional general manager of managing director Teizo Yamamoto) and the department of vehicle operation (ditto). Further development of the differentiation and integration became the one that had been automatically limited from the complexities of original sales, marketing, and export operation etc, though advanced the idea that the purpose is related to a purpose rationality of a purpose-means. The idea about which it thought by relating the purpose to the satisfaction of a semipurpose-means was given to priority. Moreover, the export headquarters with the character of strategic project team (team of strategic project) invented communications of the top down, the middle down, the middle up, and the bottom up, and activated formal and the informal communication though the information concentrated on the top manager by strengthening the system of the top management.

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85) *Ibid.*, p.299.

## V Conclusion

When concluding it, let's arrange the point in the result of a current research of Toyota Automobile Industry and Toyota Automobile Sales in postwar, in a word, in the fluctuation and process dynamics, the fluctuation and structural evolution in the organization system. First, the fluctuation and the process dynamics, especially as for the strategy and the strategic decision making and the tactics and operating decision making that became the main force, is arranged.

(1) Formation of organizational culture exhibit the spirits of founder, encourage the member of organization, and has a gross fluctuation draws out the ability of its maximum. "Toyota platform", that is, 「①It should be served an upper and lower agreement and the sincerity business, and be enumerated the real achievement in the national interest of industry. ②It should be done with the mind to the research and the creation, and always the precedence in the current of the times. ③It should be warned a gorgeousness and the simplicity and the sturdy. ④It should be demonstrate the spirit of warm hearted friendship and made the domestic good custom. ⑤It should be worshiped the gods and the buddha and done the life of gratitude and thanks.」, develops even into all employee's mental bases, and the practical behavior of Kiichiro Toyoda based on it, that is, creative passion and spontaneity, seizure of talent and conjugation, freedom and supporting relation of activity, innovation and generosity of failure, shopism and rose form, opened communications, simple, functional organization, popularization orientation of domestic production automobile, social sense of mission deeply infiltrates the shop of management and work and be brought the peculiar development (for instance, the development of Toyota Production System) to Toyota Automobile Industry after the war.

(2) The term of growth ( I ) of Toyota Automobile Industry. This term of growth ( I ) in Toyota Automobile Industry was a history of fighting hard. First of all, Toyota Automobile Industry fell into the management crisis since the company establishment by the defeat, the hyper-inflation in postwar days, and Dodge lines. From this the main strategy was to the company rebuilding strategy. That is, it is the gathering of bank accommodation, the separation and independent of sales company, the reform of top personnel, the modernization of production facility, and the specialization of domestic production in compact automobile avoid competing with Europe and America car. Moreover, the rationalization of transportation and the system of originality device suggestion were executed as a business measure. (3) The term of growth ( II ) of Toyota Automobile Industry. Toyota Automobile Industry accomplished the remarkable development through the success in the company rebuilding strategy. The main strategy is the expansion strategy (That is, the construction of Motomachi Factory), an introduction of the state-of-the-art machine equipment, the importation and developments of foreign new techniques, TQC (total quality management), and the organizing of new harmonious labor and management relations, and the emphasize of passenger car production and the product development of system of chief examiner. In continuing, in the coming of "one's own car age" a main force of passenger car production and the many varieties strategy of passenger car is important. In a word, it is the expansion strategy of the passenger car production (That is, it is to construct one after another Kamisato Factory, Takaoka Factory, Azumafuge Factory, and Miyoshi Factory only for the passenger car production), the expansion of sales network, and the establishment of systems of various passenger car production that can correspond to income, ages, and preferences of users (system of a full line). It is the other side necessary to

pay attention to not only into the country but also the overseas advancement activities. (4) The term of overseas advancement. The root problem with Toyota Automobile Industry in overseas advancement period is in the decrease of the cost by mass production as well as other automobile companies in our country, and doesn't exist in enabling this except that the market is requested from foreign countries when the domestic market is immature. Then, the expanding of domestic sales network be played at the same time as the role to develop the overseas sales market from Toyota Automobile Industry into a separation and independent of Toyota Automobile Sales. In an initial overseas advancement of activity, the sales agent was set up in Latin American Brazil, the strategy that established the business shop in Eastsouth Asia Thailand was taken, and the business activities of the marketing research and the sales promotion, etc. were developed by them. Toyota Automobile Industry and Toyota Automobile Sales shifted to the knockdown export strategy by the policy changeover of those country (that is, Industrialization Policy and Automobile Domestic Making Law) including Brazil and Thailand though the sales agency contract was expanded to the Republic of South Africa, Mexico, and Australia at the progress period. Moreover, it was United States advancement strategy that brought a rapid result by the overseas advancement activity. That is, to export the passenger car to the world largest car country, United States, Toyota Automobile Sales establishes United States Toyota Motor Sales Companies, Toyota Motor Distributor Co., New Jersey Toyota Distributor Co., Middosazan Toyota Co., South East Toyota Distributor Co., Galfstacc Toyota Distributor Co., and Middoatorantacc Toyota Distributor Co., was increased the dealer contract. And the quality improvement was aimed at, and the expansion of United States sales network and the increase of export were achieved.

The evolution hypothesis in structure of organization was as follows, verified by relating the fluctuation and process dynamics, the evolution of structure of organization in Toyota Automobile Industry and Toyota Automobile Sales in above-mentioned. First of all, the sixth hypothesis, that is, the evolution of system evolve by accepting like the state that equilibrium is barely kept a system that manages the collective autocatalysis toward the chaos of edge between order and chaos, and by accepting elastic the inheritable variation. On this hypothesis, the increase of activity with fluctuation of domestic compact car in the term of growth ( I ) of Toyota Automobile Industry in postwar, the increase of activity (increase of passenger car) with fluctuation in the term of growth ( II ) of Toyota Automobile Industry in postwar, the increase of activity (increase of passenger car and many varieties) with fluctuation in the term of growth ( II ) of Toyota Automobile Industry in postwar, and the increase of activity with fluctuation of the initial activity of Toyota Automobile Sales in overseas advancement, the increase of activity with fluctuation of the term of rapid progress of Toyota Automobile Industry and Toyota Automobile Sales in overseas advancement, is agreed ubiquitous in effect the fluctuation and evolution of structure relate the domestic production of compact car, the fluctuation and evolution of structure relate Crown and Corona (increase of passenger car), the fluctuation and evolution of structure relate Corolla, Paprika and Mark II (increase of passenger car and many varieties), and the fluctuation and evolution of structure relate the large truck and Randozlar, the fluctuation and evolution of structure relate Crown, New Corona and Corolla (passenger car) from the fluctuation and the dynamics of structure evolution. Therefore, when the sixth hypothesis is applied to each fluctuation and structural evolution, can be able to conclude that it verifies appropriately almost.



The hypothesis interpreted the business organization, that is, when in the whole of the activity with fluctuation seen in a total production activity of single group product at the time of St, the whole of the activity with fluctuation seen in a total production activity of a new product of this group or a new product group or the overseas export activity reach 45 percent thereabouts, it is that the action of synergetic autocatalysis begins to lead the structure of organization system to evolution facing a chaos while barely maintaining the order in the complexly of business organization. Because the verification of this evolution hypothesis interpreted the business organization has the feature in the place where the hypothesis of the phase transition value of 45 percent thereabout is emphasized, is related to the number of production of each automobile type seen the term of growth of Toyota Automobile Industry, related to the number of export of each automobile type seen at the overseas advancement of Toyota Automobile Sales and it was done to applied the evolution of each structure of organization. (1) It was about at 1951 that the whole of the activity with fluctuation related to the domestic production of compact car reached a chaos of edge, and the structure of the organization system of Toyota Automobile Industry was transformed greatly at this time, and was accomplished the evolution through the action of synergetic autocatalysis that grew up from the autocatalysis. The ratio of the number of production of the domestic production compact car occupied to a total production activity of that time was 48 percent. Therefore, the hypothesis of 45 percent thereabout is appropriate. (2) It was about at 1963 that the whole of the activity with fluctuation related to Crown and Corona (passenger car) reached a chaos of edge, and the structure of the organization system of Toyota Automobile Industry at this time was greatly transformed and was accomplished the evolution through the action of synergetic au-

tocatalysis that grew up from autocatalysis a chaos of edge. The ratio of the number of production of Crown and Corona that occupied to a total production activity was 43 percent at that time. As a result, the hypothesis of 45 percent thereabout is appropriate. (3) It was about at 1969 that the whole of the activity with fluctuation related to Corolla, Paprika, and Mark II (many varieties of the passenger car) reached a chaos of edge, and the structure of the organization system of Toyota Automobile Indusy was greatly transformed and was accomplished the evolution by the action of synergetic autocatalysis that grew up from autocatalysis a chaos of edge. The ratio of number of production of Corolla, Paprika, and Mark II that occupied to a total production activity were 48 percentat that time. Therefore, the hypothesis of 45 percent thereabout is appropriate. (4) It was about at 1957 that the whole of the activity with fluctuation related to the large truck and Randoclar reached a chaos of edge, and the structure of the organization system of Toyota Automobile Sales separated and independent from Toyota Automobile Indusy was accomplished the evolution through the action of synergetic autocatalysis that grew up from autocatalysis a chaos of edge at this time. The ratio of the number of export of the large truck and Randoclar occupied to a total production activity at that time was 46 percent. As a result, the hypothesis of 45 percent thereabout is appropriate. (5) It was about at 1963 that the whole of the activity with fluctuation related to Crown, New Corona, and Corolla (passenger car) reached a chaos of edge, and the structure of the organization system of Toyota Automobile Sales was greatly transformed, and was accomplished the evolution by the action of synergetic autocatalysis that grew up from autocatalysis at this time. The ratio of the number of export of Crown, New Corona and Corolla that occupied to a total export activity at that time were 38 percent. Therefore, there is an error with the hypoth-

esis of 45 percent thereabout. Thus, it can be able to conclude appropriately for verifying of four event about the hypothesis that interpreted the business organization, though the error is seen only in the last one event among five event of the structural evolution in the organization system of Toyota Automobile Industry and Toyota Automobile Sales.