Volume 2, Issue 3, October 2024
Journal of Design Service and Social Innovation

Article
Research Article
JDSSI of M-SCHOLAR
NO.00022 (A-2024)

Design Management: From my Experience in Toyota Design

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Abstract: This is a manuscript compiled based on Mr. Hideichi Misono's speech at the 2024 International Design Services and Social Innovation Forum in Hong Kong on August 27th, 2024. Mr. Hideichi Misono is former design director of Toyota Design Center and has held positions such as Executive Vice President of Calty Design Research in California, Senior General Manager of Toyota Design Center, and President and CEO of Tecno Art Research. He once led the entire Toyota Design Group and played an important role in establishing Toyota's design philosophy. In the field of education, he was a visiting professor at Chiba University and has given lectures and seminars in many countries. Misono is currently an executive advisor for the Japan Industrial Design Association (JIDA), supporting the overall operation of JIDA.

Keywords: Design management; Toyota design; Design process; Satellite studio

https://doi.org/10.59528/ms.jdssi2024.1015a22

Received: September 3, 2024
Accepted: October 2, 2024
Published: October 15, 2024

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Publication Statement: *Journal of Design Service and Social Innovation* focuses on design research and cultural dissemination, but does not involve any political views or cultural biases.

Assistant Editor: Devyn Zhao

Introduction

In corporate design work, it is essential to respect the creativity of individuals while nurturing it through the power of teams. I would like to share some of my experience in design management to take advantage of the power of the team.

Since it is common for major car manufacturers to have satellite design studios in their home countries or abroad in addition to their headquarters design center, let's look at the management of both.

Design management plays a pivotal role in bridging the gap between the creative process and company strategy. A culturally appropriate design management strategy not only ensures that design efforts are aligned with organizational goals but also improves overall company design efficiency. In a large organization like Toyota, where design is both a key differentiator and a strategic asset, effective design management becomes even more important. Examples include cross-functional collaboration, user orientation, emphasis on market needs, iterative improvement, and so on. In this article, I discuss the practices and experiences of design management in an innovation-driven environment based on my work experience at Toyota Design. By analyzing the explorations and improvements Toyota has made since the 1970s in design selection systems, design organizational structures, and satellite studios, it will shed light on the unique approaches to design management that have contributed significantly to Toyota's global success.

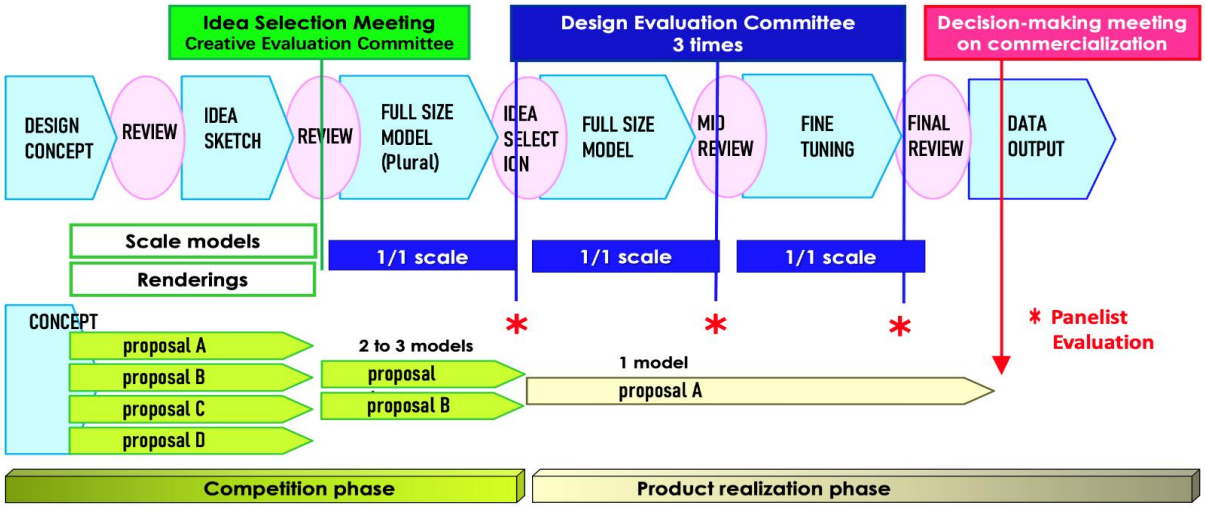

Figure 1. *Design Process and Design Evaluation System (provided by Hideichi Misono)*

Design Management-1

Headquarters Design Department

Failure-Free Design Selection

Design is not only one of the most important elements affecting the quality of a product but also the key to a company's success. It can be seen that the choice of design will determine the future of a company. Furthermore, the future of a company cannot be determined by the personal preferences of its owners. It is precisely because of the above reasons that the importance of the design process and design evaluation system is reflected. This image shows the design process and evaluation system that Toyota once adopted, reflecting the company's attitude and rigor towards design (**Figure 1**).

The three features of the design selection systems that Toyota has implemented since the 1970s have been effective in providing designs that are acceptable to a wider range of customers and have been less prone to failure (**Figure 2**). At the same time, however, Toyota's cars were sometimes criticized for their weak individuality.

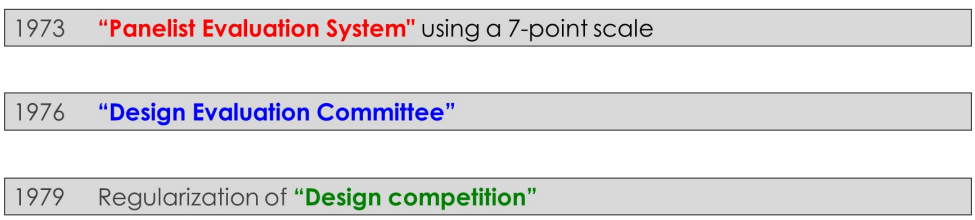

Figure 2. *Three features: Toyota's Design Selection System (provided by Hideichi Misono)*

Depending on the character of the car, it may be necessary to have strong leadership in making design decisions.

(A) Panelist evaluation system started (using a 7-point scale, 1973)

The first is the Panelist evaluation system which started in 1973. The system consists of more than 100 panelists from various departments who evaluate all design models prior to the Design Selection Committee (DSC) meeting, and the results are reported to the committee as reference information.

The group members are not design experts, but they will stand on their own areas of expertise to evaluate design solutions, such as product planning, marketing, or user experience, and by observing and discussing 1-3 times a month, the design evaluation skills of the group members will also be improved. Even though the final design may not always match the assessment results exactly, their scoring results and comments are fully considered.

We have compared the panelist'' valuation results with actual market valuations. A clear and significant correlation was shown.

(B) Design Evaluation Committee (1976)

The next step was the Design Evaluation Committee (DEC) proposed in 1976, which was divided into three stages. They are Design selection, Mid-term design review, and Final approval, similar to the concept of "Hop-Step-Jump."

(C) Regularization of design competition (1979)

The final feature of Toyota's design is the Design competition, which became a standard design process in 1979. This kind of competition can expand design ideas and improve the level of design. On the other hand, it gave many young designers the opportunity to train and participate in project proposals. Design competition is centered around teams and involves not only Toyota design headquarters, Production design group and Body manufacturing companies, but also Design subsidiaries (Calty in US, Tokyo Studio). The competitive process begins with the selection of project participants, where design proposals are screened according to project characteristics. The production design team then follows the selected design model for further refinement until final production. The successive establishment of studios in Japan and abroad not only strengthened Toyota's design network, but also contributed greatly to the design competition.

Overall, products guided by the Toyota design selection system have not been outright failures and have hardly been huge successes. In the execution of a design competition, the competition is often a matter of one winner and elimination is a very cruel outcome. There are many design proposals in competition and in most cases only one wins, so all other ideas are rejected. The proposals that lose the competition are often questioned as to whether they are a waste of time and manpower. In my opinion, every proposal in the competition did its job well, had its unique strengths and potential for growth, and was chosen in the end because it had to adhere to the competition's model. Even if the outcome can't be changed, the designers whose proposals were rejected are just as deserving of a design manager's attention. At the same time, a richer and more diverse system of design choices should be used depending on the nature of the product. For example, when discussing the design of luxury, cutting-edge, and sports cars with distinctive personalities,

the views of the senior management of the design department need to be prioritized. A more diversified design selection system is not only effective in avoiding risks but also helps companies to develop innovative products.

Trial Run of Creative Organizations

There are two types of organizations: centralized and decentralized power. Each has its merits and demerits, and it is necessary to use both on a case-by-case basis, and it makes sense to change them from time to time.

(A) Centralization of power

The advantages of centralization of power include consistent corporate identity, efficiency, and simple command hierarchy, while the disadvantages are similarity in design and the risk of dictatorship and unfairness (**Figure 3**).

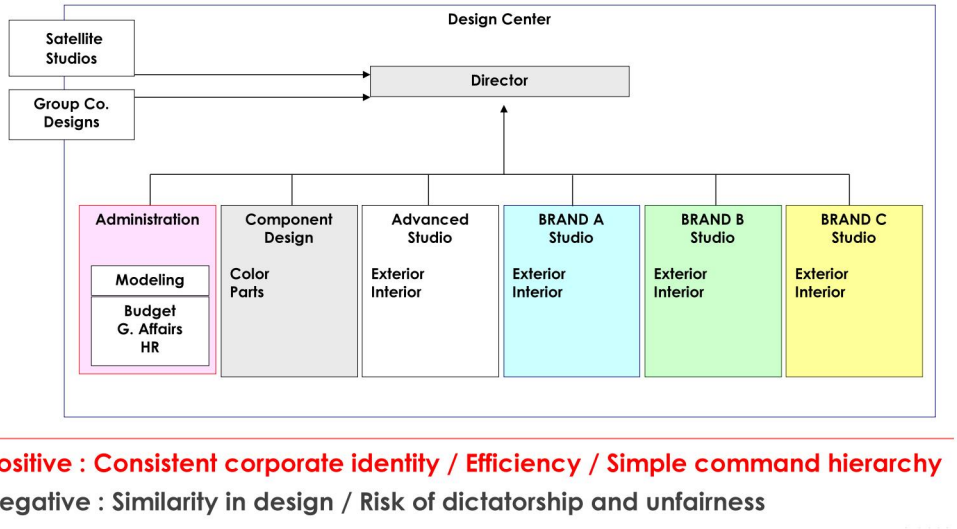

***Figure 3**. Centralization of power (provided by Hideichi Misono)*

(B) Decentralization of power

By comparison, decentralization is a system that consists of multiple independent brand centers. The advantage is that it improves the efficiency of each brand center and focuses on serving the design of each brand, while at the same time, it leads to the diversity of product design and creates a competitive relationship among the brand centers. The disadvantages are the lack of corporate identity, the duplication of functions in most centers, and the difficulty of standardization. Toyota's R&D center model in 1992 [1] (**Figure 4**).

Comparing the centralized and decentralized organizational models, there are advantages and disadvantages of both, and the tendency to choose depends on the real needs of different companies. Therefore, it is necessary to apply it on a case-by-case basis, and it makes sense to change it from time to time. Swinging may be the best solution.

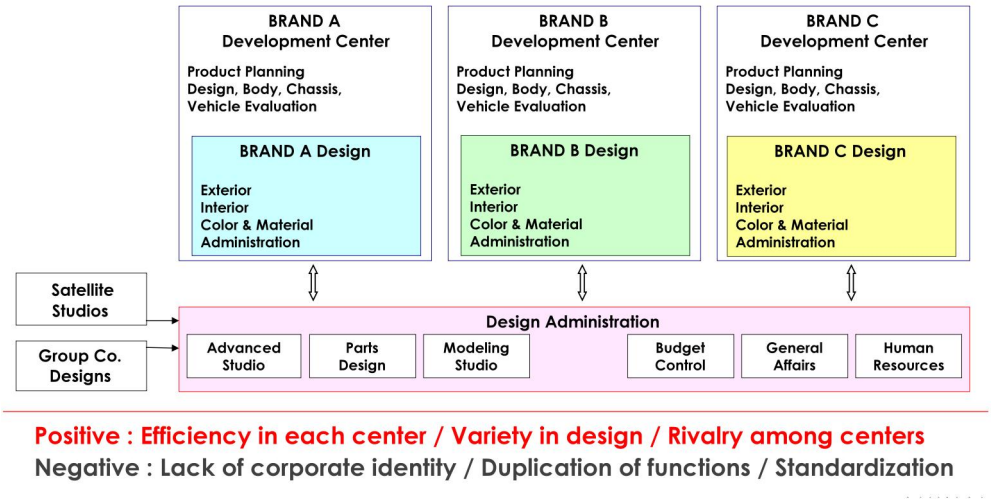

Figure 4. *Decentralization of power (provided by Hideichi Misono)*

(C) Matrix organization

Toyota has experienced both types of organizations, but in the end, it has settled on a matrix-type structure in which functions that determine the character of a brand or product are grouped separately on the vertical axis and compete with each other, while strategic and service functions provide support to the whole on the horizontal axis (**Figure 5**).

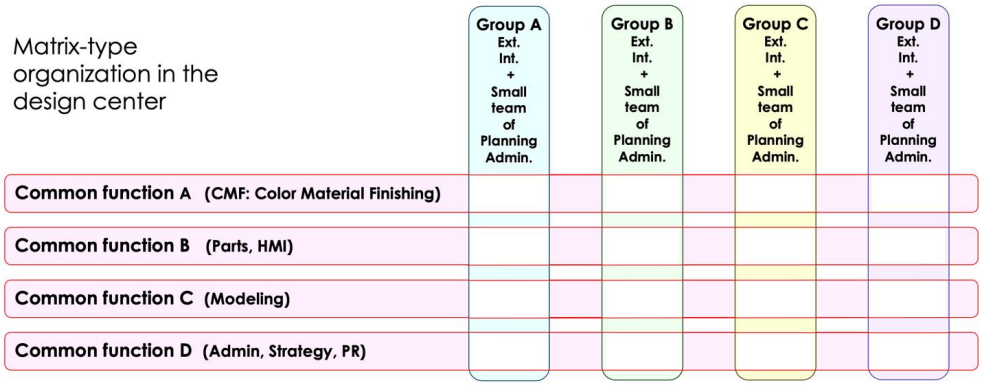

Figure 5. *Matrix organization (provided by Hideichi Misono)*

Which type of organization is better? There is no perfect answer; it depends on your needs. Swinging between two types of organizations may be the best answer (change itself is valuable).

(D) Grouping of design function and proposals

In addition to this, it is necessary to discuss the grouping of design functions. One is the grouping based on exterior and interior designs of Toyota circa 1969 and the other is the grouping based on car line-up or brand, and the advantages and disadvantages of the two grouping methods are compared. The advantages and disadvantages of the two grouping methods are also compared. (**Table 1** and **Table 2**)

Table 1. *Comparison of advantages and disadvantages based on exterior and interior designs (drawn by the author)*

Based on exterior and interior designs	Positive	Chance of high specialization
		Easy to manage the team due to the managers' experience
		Timely workload distribution
		Easy to share specialized skills
		Possible to train young designers carefully
	Negative	Risk of design inconsistency between exterior and interior
		Lack of entire design skills and knowledge
		Difficulty in switching design career
		Difficulty in growing future General Managers
		Difficulty of well-balanced designers' evaluation

Table 2. *Comparison of advantages and disadvantages based on car line-up or brand (drawn by the author)*

Based on car line-up or brand (1992)	Positive	Strong loyalty to the car or brand
		Competitive mind among groups
		Consistency between exterior and interior design
		Chance to experience both exterior and interior
		General managers can have bigger responsibility and power
	Negative	Duplicated functions like administration
		Weakening of some functions like color / CMF design
		Lack of managers capability to manage every design function
		Difficulty of timely workload distribution
		Difficulty to broaden common parts

Two types of grouping：1.Based on exterior and interior designs；2. Based on car line-up or brand. The functions of the design and how to group these functions? Designers can be grouped into the following three types: Traditional designers, new designers, and management designers.

Design Management-2

Satellite Design Studio

It is common for large automakers to have satellite design studios in their home countries or abroad, in addition to design centers at their headquarters. These satellite design studios have several characteristics. The first is that they have different types of design directions and tastes.

The value of the satellite studios will be realized to a greater extent if they are given enough freedom by the headquarters and, to a certain extent, their suggestions are heeded and they consult with each other. Second is the balance between localization and globalization, where each studio not only has to explore the needs and consumption preferences of the local population but also has to have a global vision when proposing design solutions for overall optimization; and lastly, the design management of satellite labs, where management experiments that are not possible at the head office can be carried out in the studios.

For example, the size of the studio should be no more than around 50 people. If it is more than 50 people, it will require tight organization, increase the cost of face-to-face communication among members, and make it difficult to know the status of members work and the quality of their results. If the studio can be kept to a small number of elite (smaller is better), it can improve the flexibility of the studio, so that it can easily adjust the manpower to adapt to sudden changes in the project. Therefore, design labs at home or abroad should be allowed to experiment with different design management models.

Topic 1：Main Missions of Satellite Studio

The main mission of the satellite studios is Advanced Design and Competitive Design, but in recent years they have also taken on Product Realization Design as production plants have been built around the world (**Figure 6**).

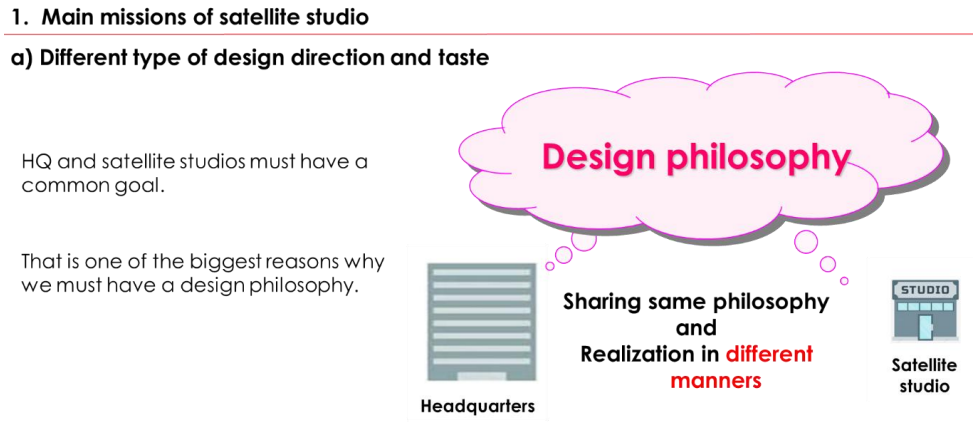

***Figure 6**. Different types of design directions and tastes (provided by Hideichi Misono)*

It is important to note that if a satellite studio's proposal meets 100% of the expectations of the headquarters, it is worthless, and there is no point in the satellite's proposal. But if it is completely different from the expectations of the headquarters, it is useless. In other words, while sharing the same basic values, or design philosophy, as a constitution with the headquarters, the expression of these values should be different, and a global perspective based on local needs is also necessary. I would also like to add that it should serve as a testing ground for design management, which is not easy to do at the headquarters.

(A) Different types of design directions and tastes

The success or failure of a satellite studio depends on the policymaking of the head office. If proposals from the satellite studio are 100% in line with the expectations of the head office, they lose their value, but if they are totally different from the expectations of the head office, it is also a waste of resources.

The headquarters and the satellite studios must have a common goal and be able to share the same design philosophy and realization in different manners. This is one of the biggest reasons why we must have a design philosophy.

(B) Localization and globalization

Each satellite studio should provide recommendations based on local needs, but at the same time, they must have a global perspective, especially for global models like Prius, Camry, Corolla, or Land Cruiser.

(C) Management Laboratory, not only design but also design management

The satellite studio is not only a design laboratory, but also a management laboratory. The total number of laboratory staff should be kept as small as possible (less than 50 people). If it exceeds 50 people, it will lead to the following problems: 1. The laboratory staff must have strict organization again; 2. Difficulty in face-to-face communication; it is difficult to find who has a better design.

Flexibility is the most important keyword for satellite studios, as they can easily adjust personnel to adapt to sudden changes in the project. Everyone should be visible and allowed to try new technologies.

Topic 2: Advanced and Product Design

I would like to consider the meaning and role of advanced development in design, and the division of roles between the headquarters and satellite design studios.

(A) Types of Advanced Design

The main tasks of the Satellite Studio are advanced design and design competition, but in recent years, with the establishment of production plants all over the world, the Satellite Studio has also taken on the task of designing product realization.

The first stage of the development process is "what to do," which consists of Experimentation and R&D (**Figure 7**).

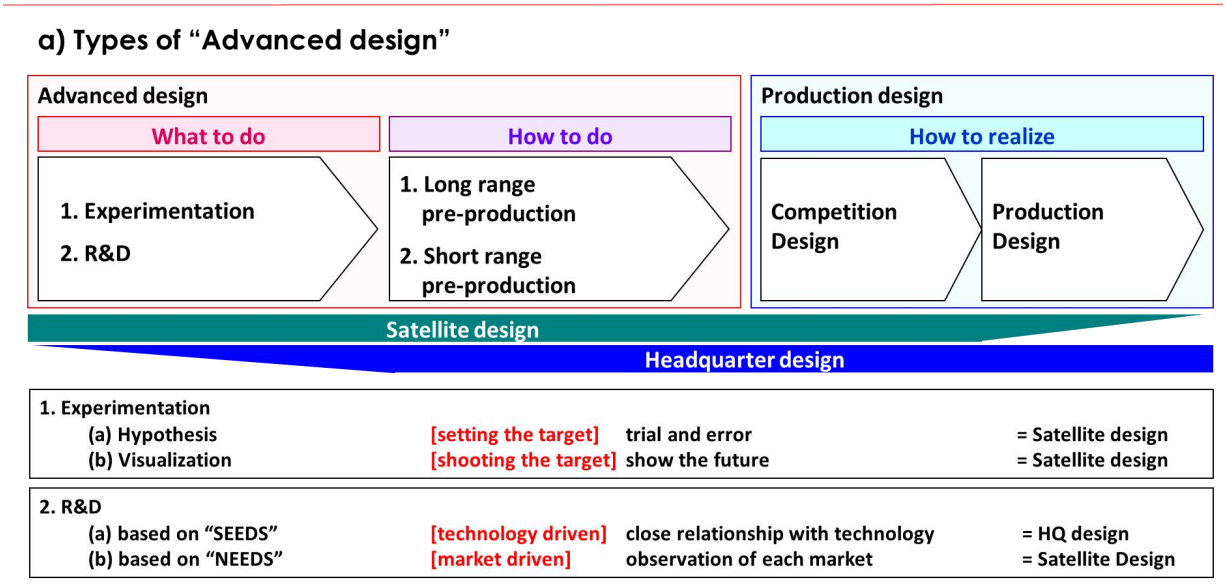

Figure 7. *Advanced design (provided by Hideichi Misono)*

Satellite design studios excel in experimentation and visualization of solutions. The R&D phase can be divided into SEEDS and NEEDS, where SEEDS is the technical "stuff" and the headquarters has the advantage, and NEEDS is the satellite's forte, as it is closer to the market.

Once the "what to do" has been clarified, the "how to do" phase begins. Before the Product Realization Design stage, there are short-term and long-term development phases. Here, specific specifications for Production Design are determined, Competitive Designs are initiated, and the original design is selected for the Product Realization Design. This is the "how to realize" stage.

Generally, satellite design is strong in the first half of this process, while headquarters design is responsible for the second half.

(B) Advanced Design operations at satellite studio

In order for satellite design to be successful, have to give satellite design studios enough "freedom." Designers from satellite design studios can appeal to top executives as regards the importance of the project and the presence of DESIGN (**Figure 8**).

I believe it is important to provide sufficient budget but not to interfere in the middle of the work. However, it is desirable to hold events such as an "annual presentation" where satellite design studios present their design proposals to the top management of the company on a regular basis. Since the possibility of commercialization is extremely low for advanced design development, it is difficult for designers to feel a sense of accomplishment and to maintain a positive spirit. This presentation also helps to satisfy the sense of accomplishment of the designers in charge.

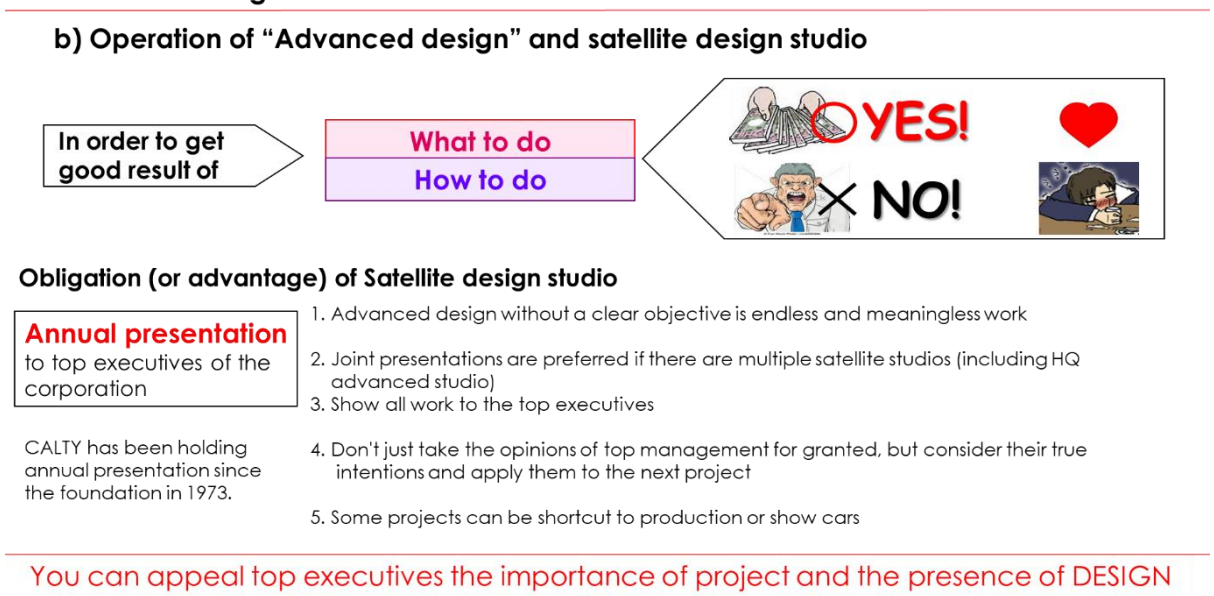

Figure 8. *Advanced Design operations at satellite studio (provided by Hideichi Misono)*

Topic 3：Fairness

I believe that the key to satellite studio management is fairness. Compared with the headquarters, the employees of satellite studios have more diverse cultural backgrounds, different salary scales and evaluation systems, and special treatment such as contract, bonus, and home leave for foreign designers.

The principle of management is that the same level of performance gets the same level of compensation. When it is difficult to compare the performance of different job functions, mutual evaluation meetings can be held with the heads of all job functions, and the final decision is made by the top management of the satellite studio alone. In addition to this, there are different types of work, and the complaints of support staff can easily manifest themselves due to the small size of the studio, while the pride of some designers in being "first-class citizens" can lead to small inequalities developing into big problems.

Therefore, it is important to seriously consider reasonable compensation and benefits, and to strengthen close daily contact between management and members, so that designers realize that their work cannot be done without the help of other people, such as modelers and administrators, or even janitors. Although there is no perfect solution, studio managers must work closely with the group heads of each work group to ensure that they always make fair decisions (**Figure 9**).

(A) Different backgrounds

(B) Types of work

(C) Relationship with the headquarters

3. Fairness

What are the keys to satellite studio management?

FAIRNESS

1. Satellite studio members come from a variety of backgrounds.
   (Sent from HQ, Local employees, Foreign employees, Temporary employees)
2. Management should always pay attention to "fairness.
3. Satellite studio management system pioneers HQ

a) Different background	(a) Different "salary structures" and "evaluation systems" (b) Special treatment for foreign designers (Contract, Bonus, Home leave, etc.)
b) Type of job	(a) Complaints from ancillary operations staff (Easy to manifest due to small organization) (b) Designers pride themselves on being first class citizens
c) Relationships with HQ	(a) HQ has no ears to listen our opinions and proposals (No response to our reports and requests) (b) Idea selection is not clear and no explanations why

Figure 9. *Advanced Design operations at satellite studio (provided by Hideichi Misono)*

A good interactive relationship needs to be established between the satellite studio and the headquarters. For example, sometimes the headquarters refuses to listen to the studios' suggestions, does not respond to their reports and requests, or is unclear about the choice of creative proposals and does not give an explanation of why. The design headquarters is in a favorable position and the satellite studios are in a weak position. While there is no perfect solution to this, the demands should be met with timely feedback to ensure that HQ always makes fair decisions. It can motivate everyone at headquarters and in the studio.

Finally, I would like to reiterate a point about Competition Design. Competition tends to be a case of "one general's success leading to many bones being withered." In other words, many ideas are proposed, but basically, there is only one winner, and the other ideas are rejected. So, were the rejected proposals a waste of time and manpower? I do not think so. There were many competing proposals, so the final selection was made, and the rejected proposal did its job well. Therefore, design managers should always remember to be concerned about the designers of rejected proposals.

Conclusion

Design in a company or group can be described as the process of "deriving ideas from individuals and nurturing them as a team." Therefore, design management can be described as the act of maximizing the results of the entire process. In this paper, I focus on the method of design selection and the organization to maximize the power of the team, dividing it into a headquarters design and a satellite organization. The meaning and examples of advanced design, which is often discussed conceptually, are also outlined. Since there is no absolute method for design management, we must always continue to seek the optimal solution within the surrounding environment and our own internal circumstances, and the correct solution may be found in continuous change. I hope that the examples described here will be of some help to those leading design teams in solving their current challenges.

Funding:
Not applicable.

Acknowledgements:
Not applicable.

Conflicts of Interest:
The author declares that he has no conflicts of interest related to this research.

Note

1 In 1992, the Toyota R&D center adopted this decentralized organization.