

Exploring your Business Leaders through Virtual Characters

- Persona Design and Small Experiments -

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Abstract— We propose a novel method to identify desirable leader images in each situation. Leader's characteristics have been researched. However, many researchers could not find unique his/her characteristics. Therefore, desirable characteristics are different in each situation which he/her meets. In order to capture the desirable characters in each situation, we apply the persona technique, which was firstly introduced by Cooper and then has been spread in the field of product development. The proposed method is characterized by the procedure: 1) set persona characters with various attributes, 2) assign the attribute values by orthogonal design techniques, 3) set virtual business situations, 4) based on the business situations, get questionnaire data on the personas from subjects, and 5) evaluate the data to get the leader images of the corresponding business situations. As results of our method, we detected the different in the sense of designed characters' attributes in each situation.

Keywords- Personas; Competency; Leadership; Personal requirements; Human developments.

I. INTRODUCTION

A. Necessity and difficulty of the research on leader images

According to literature[1], leaders are made, not born, and made more by themselves. We also have the position that leaders can raise later.

In business organizations, leaders' roles are very important. Leaders' capability influences the rise and fall of their organization. Leaders have the role which guides and raises subordinates. If leaders are excellent, the organization can gain a competitive advantage. Therefore, it is the most important proposition to raise excellent leaders in business organizations.[2]

However, the research on training of leaders is incomplete. Leaders' required capability is not uniform. Leaders need to be well versed in the operation of their organization. Moreover, they are urged to carry out business smoothly with bosses and subordinates. Furthermore, they need to learn the conceptualization capability to understand and draw enterprises. Since business conditions differ for every organization, you cannot define leaders' capability

uniformly. This is one of the difficult reasons for the research on leader images.

B. What is "personas" - From Cooper's Idea

In marketing and user-centered design, personas are virtual characters created to represent the different user types within a targeted demographic, attitude or behavior set that might use a site, brand or product in a similar way. [4] Personas are useful in considering the goals, desires, and limitations of brand buyers and users in order to help to guide decisions about a service, product or interaction space such as features, interactions, and visual design of a website. Personas may also be used as part of a user-centered design process for designing software and are also considered a part of interaction design, having been used in industrial design and more recently for online marketing purposes. A user persona is a representation of the goals and behavior of a hypothesized group of users. In most cases, personas are synthesized from data collected from interviews with users. They are captured in 1 page descriptions that include behavior patterns, goals, skills, attitudes, and environment, with a few fictional personal details to make the persona a realistic character.

Alan Cooper, a noted pioneer software developer, developed the concept, which he named personas. From 1995 he became engaged with how a specific rather than generalized user would use and interface with software. The technique was popularized for the online business and technology community in his 1999 book "The Inmates are running the Asylum".[3] In this book, Cooper outlines the general characteristics, uses and best practices for creating personas, recommending that software be designed for single archetypal users.

In this paper, we applied the persona technique to drawing the leader images of companies. Usually, in the case of "persona" creation, minute fixed-quantity investigation and close qualitative investigation are required. [5] Actually, neither expense nor time and effort can be applied to "persona" creation. So, in this research, we devised the simple technique which collateralizes fixed rationality and probability.

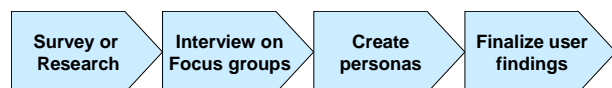


Figure 1. Usual persona generation and measure examination process

II. PURPOSE OF THE RESEARCH

In knowledge management literature, it is critical to identify desirable leader characteristics. Different business environments, however, require different types of business leaders. While business environment changes early, it is difficult to take agreement about the desirable leader characteristic. In this paper, we propose a novel method to identify desirable leader images using virtual characters. We take in personas to research of the leader characteristic.[8]

By application of an experimental design, we aim at making the number of choices of questionnaire items into the minimum. We aim at obtaining high-precision results with few samples by utilizing conjoint analysis.[7]

The outline of the proposed method is summarized as follows: 1) set persona characters with various attributes, 2) assign the attribute values by orthogonal design techniques, 3) set virtual business situations, 4) based on the business situations, get questionnaire data on the personas from subjects, and 5) evaluate the data to get the leader images of the corresponding business situations.

III. BRIEF DESCRIPTION ON THE PROPOSED METHOD

A. From Leaders' Requirements to Their Capability Assignment

In the research [6] on the leader image of ICT organizations, 25 requirements were probed as capability required for the leaders. In the paper, nine core competencies are drawn by systematic examination as most important requirements for capability, which is summarized in TABLE I.

TABLE I. MAIN REQUIREMENTS FOR CAPABILITY WHICH BUSINESS LEADER IS EXPECTED

| No. | Competency | The example of action |
|-----|---|--|
| 1 | Practical Skill (ICT skills and Industry Knowledge) | The thing required for mind and logic composition for which it has deep knowledge broadly and moderately |
| 2 | Achievement volition and positivism | The subject of a high level is set up actively and the best is always concentrated towards achievement. |
| 3 | Judgment | It can judge [whether while there is an uncertain element, a project can be promoted and it can lead to a success, and] by itself. |
| 4 | Cultivating Human Resource | Advice according to the feature and characteristic of a place of work and the member of a project is performed. |
| 5 | Vision/Imagination | Business planning, such as a development project which can promote two or more proposal affair efficiently, is drawn up. |
| 6 | Communication | A confidential relation with a partner can be built through "hearing it" and "talking." |
| 7 | Negotiation/Adjustment power | The merit to the company by developing a system is recognized, and in-company adjustment can be carried out. |

Since we used the orthogonal array (L8) this time, we needed to extract the item from nine to seven. Then, we removed "management control and the initiative", and

"theory and policy." We take up "Practical Skill", "achievement volition and positivism", "judgment", "subordinate training", "the imaginative power and a vision", "communication", and "negotiation / adjustment power."

Of course, the person who has full capacity is excellent. However, there are few such business leaders and it is difficult to expect young leaders' full capacity. Then, we created the orthogonal array as shown in TABLE II, and it was made to get an experiment candidate to choose talented people suitable as a business leader. By using the orthogonal array as shown in TABLE II, we did the work which can perform many comparisons in spite of few selections.

TABLE II. COMBINATION OF BUSINESS LEADER'S CAPABILITY

| | Practical Skill | Positiveness | Judgment | Cultivating HR | Vision | Communication | Negotiation |
|-------|-----------------|--------------|----------|----------------|--------|---------------|-------------|
| typeA | - | - | - | - | - | - | - |
| typeB | - | - | - | ○ | ○ | ○ | ○ |
| typeC | - | ○ | ○ | - | - | ○ | ○ |
| typeD | - | ○ | ○ | ○ | ○ | - | - |
| typeE | ○ | - | ○ | - | ○ | - | ○ |
| typeF | ○ | - | ○ | ○ | - | ○ | - |
| typeG | ○ | ○ | - | - | ○ | ○ | - |
| typeH | ○ | ○ | - | ○ | - | - | ○ |

(L8 array)

In this array, Type A means holding all the capability on the average. Type B to H means excelling in any 4 capability.

B. Setups of of the Experiment

We have designed the experiment as follows. We prepared the questionnaire vote. Respondents should answer individually about the following three cases. From the viewpoint of the conformity to the case, we requested respondents to attach leader type ranking.

TABLE III. SETUP OF EACH CASE AND OTHERS

| The situation of organizations | |
|--------------------------------|---|
| Case 1 | The achievements of this organization tend to descend. If the leader does not take bold measures, this organization does not have the future. |
| Case 2 | The achievements of this organization are upward. The atmosphere of this organization is bright. |
| Case 3 | The achievements of this organization are safe for the time being. However, the future of this organization is slightly opaque. |

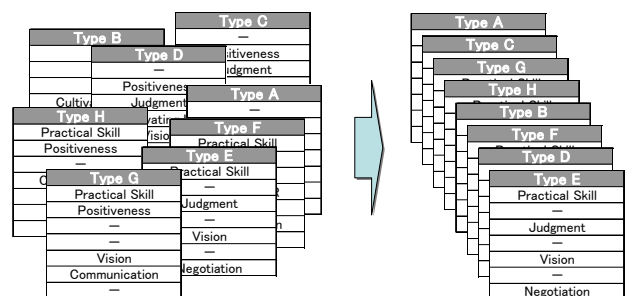


Figure 2. Rearrangement of cards by participants (image)

We printed eight personas (from Type A to Type H) on small papers, and arranged on the desk. We requested respondents to rearrange those papers from the viewpoint of the conformity to the case (Figure 2).

At the following three places, we used the same questionnaire and collected the reply data of 25 votes.

- 1) The seminar of the Tokyo Institute of Technology graduate school : 13 votes
- 2) The study group of the Mitsubishi group : 5 votes
- 3) The seminar hall of a certain society : 7 votes

IV. RESULTS AND DISCUSSION

A. Results of Simple Totals

1) Case 1 (the achievements of this organization tend to descend)

At the very top was Type G (Practical Skill, achievement volition, imaginative power, communication) among the types chosen as the 1st place. The next was Type D and Type E.

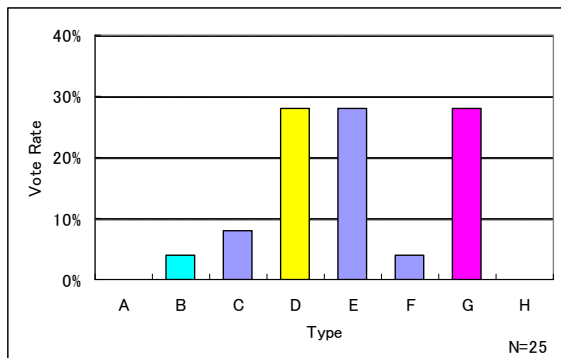


Figure 3. (Case 1) Type selected as the 1st place

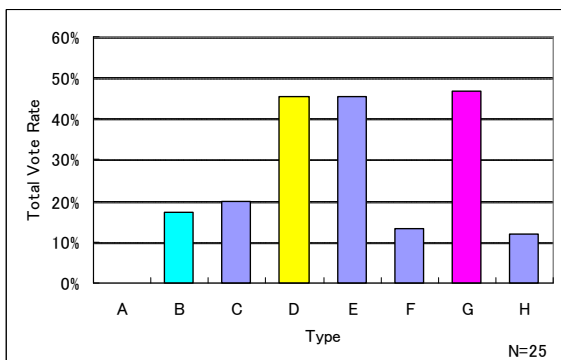


Figure 4. (Case 1) Assigned total score

We assigned 8 points to the type chosen as the 1st place. Similarly, we assigned 7 points to the 2nd place and ..., assigned 1 point to the 8th place, and we totaled the whole. As a result, at the very top was Type G among, and the next was Type E and Type D.

2) Case 2 (the achievements of this organization are upward)

At the very top was Type B (Cultivating HR, the imaginative power, communication, and negotiation power) among the personas chosen as the 1st place. Although the next was Type F and H, there was no difference not much. (Fig. 5)

The assigned sum total vote was also the same result.

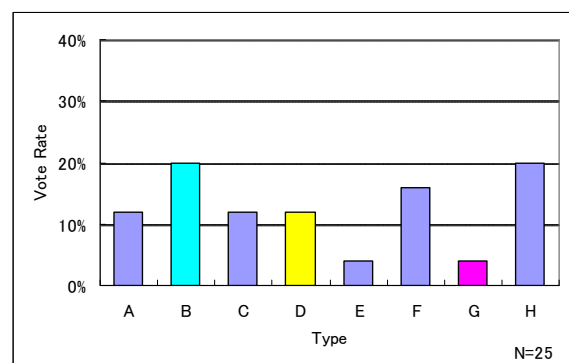


Figure 5. (Case 2) Type selected as the 1st place

3) Case 3 (the achievements of this organization are safe for the time being)

At the very top was Type D (achievement volition, judgment, Cultivating HR, imaginative power) among the types chosen as the 1st place. The next was Type B. Other types are seldom chosen. (Fig. 6)

The assigned total score have also shown also the similar results.

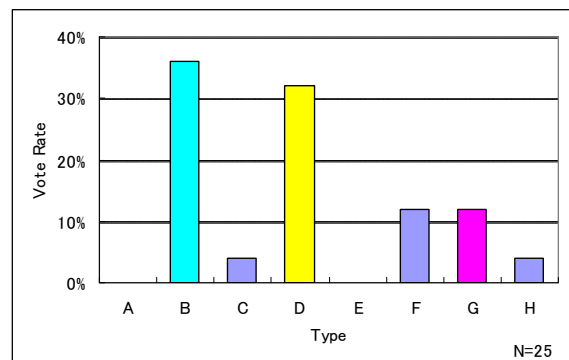


Figure 6. (case 3) Type selected as the 1st place

B. Results of Requirements for Capabilities

Below, we analyzed questionnaire results taking advantage of this orthogonal array. The seven competencies were allocated to each persona by the L-8 orthogonal array. We analyzed which the competencies for the leader were thought as important, when the respondents rank (the best: 1st - the worst: 8th) the leader personas. Then as well as the conjoint-analysis, we applied the multiple regression analysis for the sensitivity of the respondents' evaluation. In the multiple regression analysis, the response variable is "score (= 8 - rank, the best: 7 - the worst: 0)" and the explanatory variables are the existence of the seven competencies (0-1 data, absence: 0, existence: 1). The multiple regression analysis under the three cases of organizational situation illustrates how the seven competencies contribute to the score.

1) Case 2 (the achievements of this organization are upward)

The requirements for the business leader needed a little for this organization are "subordinate training" capability. There was no significant difference between the seven competencies, the effect-size: r^2 (coefficient of determination) = 0.08.

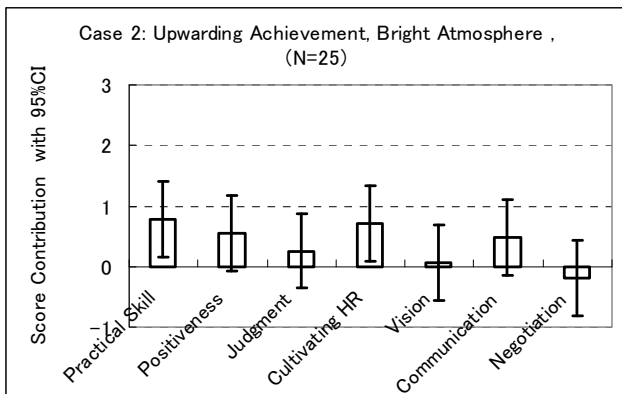


Figure 7. (Case 2) Requirements for capability in high performance organization

2) Case 3 (the achievements of this organization are safe for the time being)

The requirements for the business leader needed for this organization are "the imaginative power and a vision", and "subordinate training." Clearly different from the Case 2, the outcome shows the relatively middle – long range (Vision, Cultivating HR) competencies are clearly significant. The effect-size: r^2 (coefficient of determination) = 0.29.

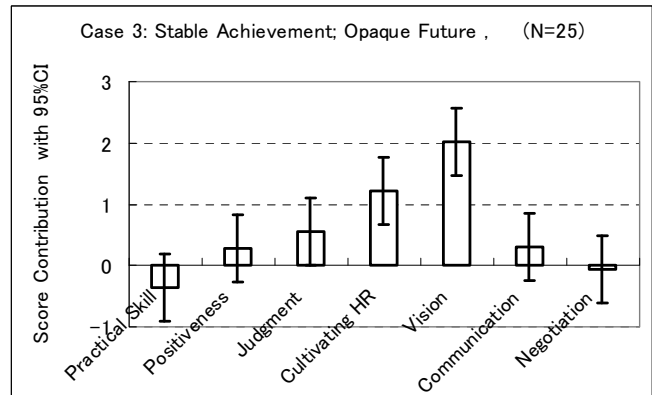


Figure 8. (Case 3) Requirements for capability in dull organization

3) Case 1 (the achievements of this organization tend to descend)

The requirements for the business leader needed for this organization are "the imaginative power and a vision." Subsequently, "judgment" and "achievement volition and positivism" are needed. Clearly different from both of the Case 2&3, the outcome shows the relatively short range competencies become clearly significant instead of the relatively long range one (Cultivating HR). The effect-size: r^2 (coefficient of determination) = 0.35.

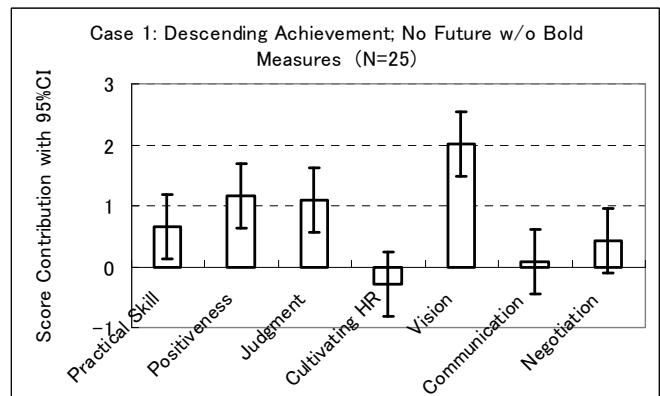


Figure 9. (Case 1) Requirements for capability in low performance organization

V. CONCLUSION AND FUTURE WORK

In the literature of competency research so far, leaders' requirements for capability were explored by decomposing leaders' behavioral trait. Therefore, it was difficult to discern the strength between capability elements. We were able to draw the requirements for business leaders by the easy questionnaire.

Compared with such conventional research methods, the proposed technique is based on the idea of questionnaire design using an orthogonal array. Rearrangement of 8 types is equal to having performed the paired comparison 28 times. It has succeeded in eliminating principle and pulling out respondents' potential opinion with this technique.

Another unique feature of the method comes from the concept of a "disposable persona." People have concern strong against people. Then, we set up the personas as items of the questionnaire.

We have observed the statistical difference by easy situation setup. The results have suggested that, according to the business situations, the desired leader images are clearly different in the sense of designed characters' attributes.

In our future work, we have a plan to have interview sessions with excellent leaders of the cooperation companies. Then we will extract the parameters of the rectangular tables. Such future work includes the following points:

- How are appropriate items incorporated in an orthogonal array?
- What is the suitable method of analyzing the collected data?
- Is the simple persona of this technique appropriate compared with an originator persona?

Then, we will expand the research topics in the following points:

- We will conceive of the new human resource management technique by the experiment base.
- We are going to collect data in ICT leaders' training domain. We will build the practical simulation base.

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