Keynote by Professor Hisao Shiizuka
i EECON 2014
The 2014 International Electrical Engineering Congress
March 19-21, 2014, Pattaya City, Thailand

Theoretical and Practical Aspects on Kansei/Affective Engineering

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Keywords*: Kansei/Affective value creation, Kansei/Affective system, Kansei/Affective information, SOSORU Marketing, Kansei/Affective honeycomb*

The term Kansei in Japanese that we use today originates from the aesthesis (an ancient Greek word meaning sensitivity/senses) used by Aristotle and is thought to have similar meaning to ethos. The German philosopher Alexander Gottlieb Baumgarten (1714-1762) specified the study of sensible cognition as "aesthetics" for the first time in the history of philosophy, and this influenced Immanuel Kant. Baumgarten defined the term "sensible cognition" using the Latin word Aesthetica as in Aesthetica est scientia cognitionis senstivae [Aesthetics is the study of sensible cognition]. He defined "beauty" as a "perfection of sensible cognition with a coordinated expression" and defined "aesthetics" as "the study of natural beauty and artistic beauty." Lucien Paul Victor Febvre (1878-1956) understood Kansei as the French word sensibilite, which can be traced back to the early fourteenth century. He also maintained that Kansei meant human sensitivity to ethical impressions such as "truth" and "goodness" in the seventeenth century, and in the eighteenth century, it referred to emotions such as "sympathy" "sadness," etc. On the other hand, in Japan, aesthetica was translated as bigaku [aesthetics].

Given this international trend, in Japan, also, Kansei research was invigorated and attempts were made to understand Kansei from various perspectives. A major argument was that it could be interpreted in many ways based on the meaning of its Chinese characters, such as sensitivity, sense, sensibility, feeling, aesthetics, emotion, intuition, etc. Another argument was that the word, from a philosophical standpoint, was coined through translation of the German word Sinnlichkeit in the Meiji period. It consists of two Chinese characters – Kan [feel] and Sei [character], which represent yin and yang respectively, and if combined, constitute the universe.

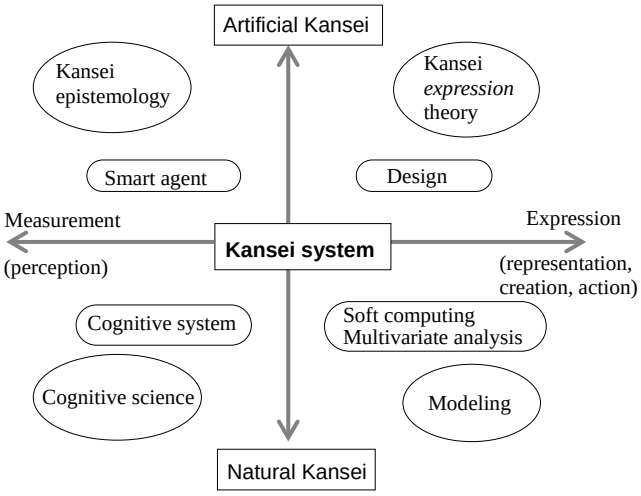

Fig. 1 Kansei/Affective system framework

Kansei/Affective engineering generally "deals with Kansei by using engineering methods." It is based on the idea that engineering is required to deal with Kansei. However, it is more appropriate to consider that engineering requires Kansei (or learning what Kansei is). Engineering originally developed with the main purpose of helping people, but it is facing increasing difficulties in continuing to help people and in keeping people feeling its value while maintaining its focus on manufacturing and functions. For this paradigm shift in the standard of values, engineering is now required to take Kansei into consideration.

People rich in Kansei are creative people. Developing and innovating technologies for producing elements alone cannot be considered creative work. What can be called creative is to create concepts that are closer to upstream people (such as users and consumers). No engineering work can be deemed creative unless the engineering covers areas that have people wondering "how this could be called an engineering field." Kansei is one of these areas. By understanding Kansei and achieving a paradigm shift for the twenty-first century, engineering may be able to attract more young people, solving the issue of young people's shying away from science and engineering.

If you look at Kansei/Affective value creation from a system methodology point of view, you will find that one Kansei converter is involved in it. The Kansei converter enables the resonance of Kansei to generate (or create) Kansei values. This phenomenon can be explained by the resonance that you can observe in the physical world.

The physical phenomenon of "resonance," especially in electric circuits, enables electric currents containing resonance frequency components to flow smoothly as the circuits that include inductors and capacitors turn into pure resistance with zero at the imaginary part through interaction of these reactive elements.

When manufacturers (senders) have stories with a strong message, as shown in Fig.2, the level of "excitement" and/or "sympathy" increases among users (receivers), causing "resonance of Kansei," which in turn creates values. The "resonance of Kansei" can be interpreted as a phenomenon that could occur when the distance between a sender and a receiver is the shortest (or in a pure state where all the impurities are removed). The distance between the two becomes shortest when, as shown in Fig.3, the level of the story is strong where excitement or sympathy is maximized.

How should we quantitatively assess (measure) the "level of a story" and the level of "excitement or sympathy"? This will be the most important issue in the theoretical part of Kansei value creation.

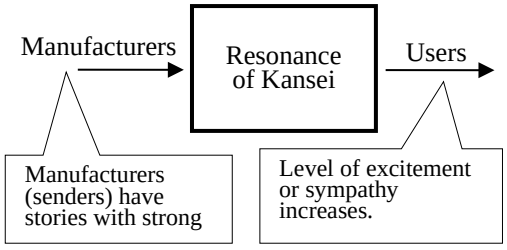

Fig. 2 Resonance of Kansei/Affective

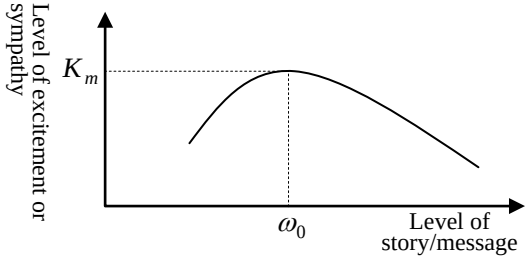

Fig.3 Kansei/Affective value creation

I introduce the following contents especially also including the subject in the latest Japan in this keynote, from the theoretical and practical view point.

1. The designing method of "the tablet excellent in swallowing "
2. The Brand Image which Leads to Kansei/Affective
3. Kansei/Affective system
4. Perceived quality
5. Creating Kansei/Affective values and story telling
6. Kansei/Affective Information and its effectiveness
7. SOSORU-Marketing
8. "Quantification of Kansei", and the subject to a design
9. Towards the technology to be granted and directed in new product development "luxury", "sense of quality" and "realism"
10. New concept "Kansei/Affective Honeycomb"

The technology of applying Kansei/Affective engineering to an actual product is under development now. In particular, in relation to the social life technology, the necessity will become still more important. For example, application of sensitivity engineering is expected from the problems in a super-aging society. Japan is faced with the problem of a super-aging society evolving at an unparalleled pace. There, not only a technical subject but also the subject about Kansei/Affective communication becomes important. We have to try towards solution of those subjects.