The Study of Customer Demand Exploration and Service Strategies of Electric Utilities

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Along the way of electricity market reform, Taiwan Power Company (TPC), has been transforming from a vertically integrated utility into a retailing licensee, tariff regulated and endowed with obligation of power supply.

This study aims to improve the company's market competitiveness by proposing useful service strategies. The methods adopted include literature review, survey by questionnaire, market segmentation, benefits evaluation, etc.

We summarized 15 customer service strategies out of 12 electric utilities in 7 countries. Depending on how the services are provided and whether the users need to pay, the service strategies were further divided into 3 categories as follows:

1. Free basic services, e.g. my account, smart customer service, personalized real-time information, professional consultancy, etc.

2. Advanced paid services, e.g. technical energy saving services, green energy investment, marketing of energy saving products, demand-side management, etc.

3. Optional services, e.g. education training, financing, warranty & repair, customer feedback, corporate certification & guidance, package program, insurance, etc.

In addition, we conducted surveys aiming at 4 types of customers according to their demand characteristics. The results of the surveys indicated that high-voltage and ultra-high voltage customers had higher service recognition and utilization rate, reflecting their closer interaction with TPC. On the contrary, low-voltage customers had lower service recognition and utilization rates.

The results of market segmentation analysis indicated that meter-rate/non-business customers, age between 40-59, high education level & white collar and middle education level & unemployed had the highest electricity consumption rate of 35.1% in May and June. They also represented the highest market share of meter-rate/non business customers, shown as table 1.

In terms of electricity consumption, high-voltage customers having high electricity consumption in the second half of the year and summer accounted for 50.2% of the total market consumption. They are the most valuable and important customers of TPC.

In terms of benefit evaluation, we categorized 6 indicators as follows through literature review to evaluate the performances of the services: 1. The level of customer preference level, 2. claim of value, 3. ease of use, 4. interaction, 5. integration & Applicability, and 6. social responsibility of enterprises.

We then applied AHP analysis and expert performance evaluation methods to calculate the performance values of the 15 service programs. Nevertheless, the results were not good enough to clarify the service priorities. Therefore, we further accommodated factors from aspects such as regulation, technologies and markets to determine the service priorities.

Table1: Market segmentation: Low-voltage meter rate lighting for non-business users

Unit：Household、kWh、%

Type	Number of sample household	Average power usage in May, June per household	Share of power usage in May, June per household	Characteristics
1	3	626	0.1	20-39 years old, low educational attainment, blue collar.
2	584	854	27.7	medium educational attainment, white collar.
3	2	1,292	0.1	low educational attainment, white collar.
4	377	829	17.6	youth, high educational attainment, white collar; 40-59 years old, medium to low educational attainment, blue collar.
5	751	829	35.1	40-59 years old, high educational attainment, white collar; medium educational attainment, unemployed.
6	464	734	19.3	over 60 years old, unemployed.
7	2	814	0.1	over 60 years old, high educational attainment, white collar.
Total	2,183	815	100.0	