Chapter 1

Profitability of Fixed Customers: A Case of a Japanese Department Store

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1. Introduction

Fixed revenue accounting (FRA) was developed by the first author as a new management accounting framework to evaluate the impacts of fixed customers on a company's financials (Suzuki, 2005; Asada *et al.*, 2005). Fixed customers refer to frequent or regular customers who are expected to repeat their purchases. Compared with non-fixed customers, fixed customers produce several advantages for a company. Their repeat purchases introduce some stability in revenue, which also leads to some stability in profit. In addition, their repeat purchases bring in a large amount of revenue that improves a company's profitability because with the increase of revenue, the cost to keep a customer does not change. Recognizing these advantages of having fixed customers, we propose a framework to assess the impacts of fixed customers on a company's financials to improve its performance.

To evaluate the impacts, FRA requires the following steps: First, the strength of repeat purchases is measured by the total number or total amount of transactions for each customer. Based on this measurement, each customer is placed into the fixed or non-fixed customer segment. Next, the revenues obtained from the customers are totaled for each customer segment. Also, after matching the revenues to costs, the profits are

calculated for each customer segment. Based on these accounting figures, the impacts of the fixed customers on a company's financials are assessed. Comparing revenues, costs, and profits across the customer segments reveals the impacts of the fixed customers. Furthermore, the comparison between budgeted and actual figures shows how the company's customer strategy can be refined.

The strength of FRA is in the ability to identify the stability of revenue and profit as well as the profitability for frequent customers. Development of a management accounting framework to identify the stability and the profitability obtained from frequent customers began with the responses to two questions that the first author asked himself in 2001. From the concepts of fixed and variable costs, the first question occurred: "Why isn't revenue classified into fixed and variable categories?" Adapting the concept of income momentum, which was defined by Ijiri (1990), as an expected income in consecutive periods assuming no environmental change, the FRA approach for classifying revenue into stable and not stable categories was developed. Relationship marketing which insists that a company can improve its profitability by increasing its frequent customers led to the other question: "How are the impacts of frequent customers on financials measured?" Referring to customer profitability analyses proposed by Foster and Gupta (1994), Foster *et al.* (1996) and Foster and Young (1997), the FRA approach for identifying the profitability for frequent customers was established.

In management accounting, a framework focusing on the evaluation for the impacts of fixed customers does not exist. What does exist is studies on management accounting, which can be grouped into two categories: the effectiveness of non-financial measurements from the customer perspective, and the analyses of customer profitability. Kaplan and Norton (1996) stated the necessity of non-financial measurements from the customer perspective. To examine the effectiveness for the non-financial measurement, Ittner and Larcker (1998), Banker *et al.* (2000), and Smith and Wright (2004) tested the correlation between the customer satisfaction index and companies' financials, and Hemmer (1996) and Smith (2002) investigated the usefulness of the index based on mathematical models. These studies indicate the effectiveness of non-financial measurements from the customer perspective but had no intention to develop a framework

for evaluating the impacts of customers based on financial figures. On the other hand, Foster and Gupta (1994), Foster *et al.* (1996), and Foster and Young (1997) discussed the framework for analyzing customer profitability by financial figures. Their framework presented valuable insights such as the usefulness of transaction data based on each customer and profit estimations for an extended period of time to understand the customer profitability. However, this framework did not focus on evaluating frequent customers.

The purpose of this chapter is to make the case to demonstrate the strength of FRA which identifies the profitability related to frequent customers. We start this chapter by presenting three conditions for FRA. Next, we demonstrate and examine a profit and loss statement for FRA using a department store's case. Finally, conclusions are provided.

2. Three Requirements for Fixed Revenue Accounting

FRA can be undertaken when these three conditions exist: (1) customer segments must be categorized by the strength of repeat purchases of each customer, (2) the strength must be measured by the transaction data, and (3) the transaction data must be recorded for each customer.

2.1 *Customer segments categorized by the strength of repeat purchases of each customer*

FRA is accounting based on customer segments categorized by the Strength of Repeat Purchases of Each Customer in a certain period (SRPEC). Generally, to evaluate the impact of a driving factor on a company's financials, management accounting segments its financial results according to the driving factor. For example, to evaluate the impact of the customer's region on the financials, the financial results are divided by the regions. Then, by comparing the results, the regional impact is identified. This basic approach in management accounting is applied to FRA in order to evaluate the impact of the SRPEC.

By limiting the SRPEC with a range, customers can be segmented into two customer segments of: non-fixed Customers, with a low SRPEC and fixed customers, with a high SRPEC. In addition, when a company has

classified the customers at two points in the time, it can identify their changes in the customer segments.

With this information, the customer segments of non-fixed customers with a low SRPEC and fixed customers with a high SRPEC can both be separated into two customer segments: non-fixed customers, with a low SRPEC in two consecutive periods, semi-fixed customers, with a low SRPEC in a last period but a high SRPEC in a period before the last one, fixed customers, with a high SRPEC in two consecutive periods, and semi-non-fixed customers, with a high SRPEC in a last period but a low SRPEC in a period before the last one.

2.2 The strength measured by transaction data

The SRPEC is measured by the transaction data. As a basic measurement for the SRPEC, the total amount, the total number, or consecutive periods of transactions is listed. When a company chooses the measurement from its transaction data, it must consider the relationship of the measurement for the SRPEC to its corporate value. The corporate value is regarded as the sum of discounted cash flows to be gained from customers during the years that they will continue to make transactions. The total amount of transactions becomes a measurement for the SRPEC because it affects each year's cash flow. Another measurement, the consecutive period of transactions, is selected because it influences the total value of the discounted cash flow. Finally, the total number of transactions is a powerful measurement because it can be reflected to the transactional momentum on the transactional amount and period.

Because many other measurements for the SRPEC will be developed in future business practice, let's look at the responses to the question: "When your company identifies customers with whom your company wants to establish strong relationships, what is the most desirable measurement?" In 2006, the first author asked this question to seven MBA students who were working for companies. "Measurement for identifying important customer relationship" in Table 1 shows how widely companies define the measurements for the SRPEC. However, these varied measurements for

Table 1. The measurements for identifying the important customer relationship.

Type of business	Sales volume (million USD)	Major customers	Measurement for identifying important customer relationship	Categories of measurements			
				Amount	Period	Number	Others
Consumable items wholesale	17	Hotels	More than continual 10 thousands USD sales per month from major 5 items for 5 consecutive years	√	√	—	—
Foods wholesale	15	Retailers	Credit selling approval based on the number, the value and the consecutive period of sales	√	√	√	—
Temporary employment agency	2	Small companies	Decision by president	—	—	—	√
Business application software developer	83	Accounting departments	Continual sales years	—	√	—	—
Apparel manufacturer	333	Retailers	Decision by regional sales manager	—	—	—	√
Treatment Device manufacturer	4.2	Parts manufacturer	More than 9 times transaction per year	—	—	√	—
Auto parts manufacturer	600	Auto parts manufacturer	More than 83 millions USD sales for 3 consecutive years	√	√	—	—
Pharmaceutical manufacturer	1,667	Hospitals	More than 5 consecutive years' sales	—	√	—	—

seven companies can be identified as one of the three basic measurements described in the prior paragraph, the total amount, the total number or consecutive period of transactions. See “Categories of measurements” in Table 1 and remember that this result cannot be generalized because the samples were not selected at random.

2.3 The transaction data recorded for each customer

To measure the SRPEC, the transaction data must be recorded for each customer. Transactions should be recorded with each customer’s identification such as the name, enabling a company to identify to which customer segment each customer belongs to.

Consider the possibility of recording the customer identification with each transaction in two types of commerce: business to business and business to consumers. In business to business commerce, the customer identification is usually attached to each transaction record, while in business to consumer commerce, it depends on the industry. Many industries, such as for example, airlines, hotels, hospitals, communications, and mail-order, require the customer to register and thus store the transaction records by name. Other industries such as retail and restaurants don’t customarily ask for any customer registration and have anonymous transaction records; but they can collect the transactions of important customers as named records, by using frequency or loyalty programs. Additionally, the spread of electronic settlements on a company credit card or the wallet-cell phone is making it easier for the company to introduce frequency or loyalty programs.

2.4 Profit and loss framework in fixed revenue accounting

By matching costs with the revenues calculated according to the four customer segments, non-fixed, semi-non-fixed, fixed, and semi-fixed, a basic form of profit and loss statements for the customer relationship evaluation can be produced (as shown in Table 2). Note that this statement supposes that costs are categorized into traceable and untraceable costs to the customer segment and into variable and fixed costs based on a cost driver, the sales amount.

Table 2. The basic form of profit and loss statements based on Suzuki (2007, p. 219).

		Total	Friend (non-fixed)	Sweetheart (semi-fixed)	Family (fixed)	Ex-family (semi-non-fixed)
Sales (Revenue)	Product A		What percentage of the total revenue is made up by fixed customers? Does a company offer an assortment of goods which satisfies fixed customers' requirements? Is the assortment profitable?			
	Product B					
	Product C					
Sub total						
Traceable variable cost	Cost of goods sold					
	Selling expenses					
Sub total						
Marginal profit					(a)	
Traceable fixed cost	Cost of goods sold		Were sales activities efficient?			
	Selling expenses					
Sub total		(b)				
Contribution margin						
Untraceable fixed cost	Cost of goods sold		Is the profitability of fixed customers high?			
	Selling expenses					
Sub total		(c)				
Operation profit			× Fixed operation profit = (a) – (b) – (c)			
Fixed operation profit						

Note that the fixed operating profit, calculated by subtracting the fixed costs from the marginal profit obtained from the fixed customer, evaluated the offset between the revenue and the fixed costs. The meaning of the fixed operating income is described in Part 3.

3. The Department Store's Case Study

3.1 *The department store's motivation of using the profit and loss concept*

As a pioneer of a loyalty program in Japan, the department store (DS) maintained a loyalty program that gives members a price reduction benefit of either 5% or 10% on current purchases depending on the total value of their purchases in previous years. However, experiencing the low growth in profit during the Japanese economic recession, the managers of the DS began to argue for or against the 10% price reduction rate. The head of the sales division argued for applying the higher reduction rate in order to keep their loyal members, while the head of the buying division insisted that the 10% discount rate had a negative impact on the profit. During this conflict, the DS introduced the profit and loss concept of the FRA to financially evaluate the effects of the rates (Suzuki, 2007).

3.2 *The department store's customer segments and profit and loss statements*

The DS categorized the members of the loyalty program based on their price discount rates for the two years, 2010 and 2011, and into four types: "Friend" meaning the non-fixed customer, "Sweetheart" meaning the semi-fixed customer, "Family" meaning the fixed customer, and "Ex-family" meaning the semi-non-fixed customer (see Table 3).

Based on the four customer segments, the DS developed profit and loss statements to measure the contribution margin for each store. Table 4 shows the profit and loss statement and the reference data of Store A as an example. Please note these three facts: The price discount rates did not apply to some branded merchandises, such as Chanel products, but sometimes exceeded the regular discount rates offered in a New Year's sale, for example. The sales departments of the DS are basically organized by

Table 3. The DS's customer segments.

		The price reduction rate in 2011	
		5%	10%
The price reduction rate in 2010	5%	Friend (non-fixed customer)	Sweetheart (semi-fixed customer)
	10%	Ex-family (semi-non-fixed customer)	Family (fixed customer)

type of merchandise. The figures in this statement were produced by multiplying the actual number by a certain number in order to maintain some confidentiality.

3.3 The department store's findings and decisions

The trends shown in sample Fig. 4 hold for all of the DS' stores. The family segment, the segment of fixed customers, made up a significant share of the contribution margin. On average, while 32% of all members, the family segment accounted for a contribution margin of 80%. Also, although the family segment consisted of the customers who enjoyed the highest discount rate of 9.7%, the family segment had the highest profitability. Averaged company wide, when compared with the friend segment, the family segment outperformed the friend segment in its ratio of contribution margin to sales by five points.

These two powerful results in the family segment are explained by the considerably large sum of sales divided over its traceable fixed cost. Referring back to Table 3, we find that the multiple of sales to traceable fixed cost is: 11 times in the friend segment, 69 times in the sweetheart segment, 137 times in the family segment, and 21 times in the ex-family segment.

The large profit share and high profitability of the family segment settled the arguments about the 10% price discount rate and encouraged the DS to expand the privileges. The DS expanded free parking benefits and added delivery services for the family segment. In addition, a discount rate over 10% is being considered for the members whose total value of purchases in two consecutive years has been above a certain large amount.

Table 4. Store A's profit and loss statement and data.

Store A						
4/1/2010-3/31/2011 (000.Yen)		Total	Friend (non-fixed)	Sweetheart (semi-fixed)	Family (fixed)	Ex-family (semi-non- fixed)
Sales	Floor A	304,000	15,000	17,000	227,000	45,000
	Floor B	897,000	52,000	60,000	640,000	145,000
	—	—	—	—	—	—
Sub total		5,299,000	503,000	480,000	4,110,000	206,000
Variable cost	Cost of goods sold	3,179,000	312,000	298,000	2,442,000	127,000
	Discount for members	465,000	20,000	34,000	397,000	14,000
Sub total		3,644,000	332,000	332,000	2,839,000	141,000
Marginal profit		1,655,000	171,000	148,000	1,271,000	65,000
Traceable fixed cost	Direct mail cost	19,000	10,000	1,000	6,000	2,000
	Services for members	75,000	37,000	6,000	24,000	8,000
Sub total		94,000	47,000	7,000	30,000	10,000
Contribution margin		1,561,000	124,000	141,000	1,241,000	55,000

Reference data		Total	Friend (non-fixed)	Sweetheart (semi-fixed)	Family (fixed)	Ex-family (semi-non- fixed)
Distribution ratio	Sales	100%	9%	9%	78%	4%
	Marginal profit	100%	10%	9%	77%	4%
	Contribution margin	100%	8%	9%	80%	4%
Margin ratio	Marginal profit	31%	34%	31%	31%	32%
	Contribution margin	29%	25%	29%	30%	27%
Price discount ratio		8.8%	4.0%	7.1%	9.7%	6.8%
Multiple of sales to traceable fixed cost		56	11	69	137	21
Members	Number	151,000	72,000	13,000	48,000	18,000
	Distribution ratio	100%	48%	9%	32%	12%
Per member	Sales	35,093	6,986	36,923	85,625	11,444
	Marginal profit	10,960	2,375	11,385	26,479	3,611
	Contribution margin	10,338	1,722	10,846	25,854	3,056

3.4 Future scope of FRA study

During this case study, we were able to establish two new researches for FRA to answer the questions raised by the DS, which are explained, respectively, in Sections 3.4.1 and 3.4.2.

3.4.1 Bathtub Model

The DS raised two questions: how changes in customers’ SRPEC affect marginal profit and whether or not profit and loss statements in FRA can help them identify drivers to convert a new customer into a fixed customer. To answer the first question, we reorganized the previous four customer segments. Family and Sweetheart are integrated into fixed customer; friends and ex-family into non-fixed customer; and two new segments, namely, new customer and defector are added. After collecting data for those segments, we implemented a Bathtub Model, an accounting model specific to FRA (see Fig. 1).

The Bathtub Model is a model to demonstrate how the number of customers fluctuates according to customer acquisition rate or defection rate, and how customer composition changes with transition rate between

Fig. 1 Bathtub model in DS.

customer segments. The Bathtub Model-based analysis in this case clarified that effective strategies for achieving the DS's medium-term profit targets are to improve their customer acquisition rate and transition rate from new customers to fixed ones, while lowering transition rate from fixed ones to non-fixed.

The results of the analysis suggest that the Bathtub Model is a useful method for growth potential analysis. More precisely, it enables us to predict future customer numbers and analyze growth potential of marginal profit by multiplying the predicted number by marginal profit per customer. The Bathtub Model was originally referred to as "A Bathtub Model" because customer demographics, in other words, correlation between changes in the number of customers and those in the customer composition, is analogous to the hot water circulating mechanism for a bathtub. For more details about the Bathtub Model, please see Part 3.

3.4.2 *Variance analysis framework in FRA: VAF*

The second question was about whether or not profit and loss statements in FRA could help the DS identify drivers to convert a new customer into a repeat customer. To answer the question, we developed a specific variance analysis framework for FRA (FRA:VAF) to explore the driving factors. In VAF, we broke the contribution margin variance into the number of customer variance and the purchase amount variance per customer. The results of those variance analyses indicate that a majority of favorable contribution margin variances is attributed to favorable purchase amount variances.

In addition, we broke favorable purchase amount variances down into the number of floor variance, the purchase amount variance per floor. The results of the analyses demonstrate that a majority of favorable purchase amount variance is attributed to variance of the number of floor (see Fig. 2).

Consequently, we strongly recognized that encouraging customers' shop-around behavior is a key driver to acquire more fixed customers. Then, we started to apply contribution margin variance analysis extensively to customers by age group in order to develop innovative floors for encouraging their shop-around behavior and figure out effective ways of communication to notify customers of it.

Fig. 2 Variance analysis framework in DS.

A key feature of FRA:VAF developed in this study is to analyze traditional quantity variances with perspectives of customer relationship such as changes in the number of customers, customer quality, product preference and purchase quantity, and therefore, FRA:VAF, compared with traditional variance analysis, has great potential to lead to more concrete decision-making in marketing.

For details about FRA:VAF, please refer to Part 4.

4. Conclusion

By using the DS case, this study aims to demonstrate the strength of FRA which identifies the profitability for fixed customers. The DS’s case demonstrated the high effectiveness of FRA profit and loss concept on decision-making about customer relationship policies. The profit and loss statement in FRA clarified the powerful potentiality of the family

segment, settled the arguments about the price discount rate, and encouraged the DS to expand the privileges of its loyalty program.

The study also revealed three limitations for getting benefits from the profit and loss statement concept. The first is, the greater part of profits must be gained from fixed customers in order to evaluate the impact of the strength of the customer relationship on the profitability. The second is, there should be a number of customers to collect adequate data. FRA needs enough number of customers to be segmented along transaction continuity for measuring such segments as accounting information, as we did in the study. Otherwise, it is difficult to grasp how much influence transaction continuity has over financial performance by using FRA.

The third is, transaction continuity must be an important factor for financial performance of a company wishing to use FRA. We consider that FRA might work less effectively for a company if a large portion of its revenue and profits, unlike in case of DS, are not earned by small number of fixed customers.

Finally, the study brought us new research ideas concerning Bathtub Model and FRA: VAF. Further studies on them will need to be performed.

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