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Budgetary management due to business environment changes

: A case study on the mechanism of resource reallocation at a Japanese company

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# **Budgetary management due to business environment changes: A case study on the mechanism of resource reallocation at a Japanese company**

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## **Abstract**

Preceding studies have examined processes to cope with changes to the business environment so that it may attain its originally set company-wide targets. Using a case study of a Japanese company, this paper examines resource reallocation between departments in the process of coping with such environment changes. We show an important mechanism used to support resource reallocation, namely, the grooming of multi-skilled workers in the lifetime employment system, which is adopted in many Japanese companies. The company does not change its original budgetary targets depending on the circumstances at hand; rather, it uses the loosely coupled relationship between its initial budgetary targets and action plans to attain the former through feed-forward changing actions.

## **Key words**

Budgetary management, target management, resource allocation, multi-skilled worker, beyond budgeting

## **1. Introduction**

This paper explores how businesses conduct resource reallocation between

departments in the process of coping with environment-related changes. To this end, we use a case study of a Japanese company. In recent years, the relationship between budgetary management and environment changes has been actively discussed among researchers and practitioners. Budgeting is said to be a monetary representation of action plans that are devised to achieve profit targets for a given period (Anthony, 1989). Therefore, the budgeting process involves making action plans. Provided the gaps between the assumptions made while drawing up the budget and reality are small, they can be filled in by corrective actions, which are identified through budget variance analysis. However, when these gaps grow large, the action plans devised at the planning stage will not function as intended. In such situations, it is widely believed that managers cannot cope with the environment changes to the business because they are restricted to the budget allocation-based action plans. Accordingly, a proposition called “beyond budgeting” has been devised; it concerns abandoning the original budget because of the negative effects arising from the original plans and resource allocation (Bunce et al., 1995; Hope and Fraser, 2000, 2003; Bogsnes, 2008).

On the other hand, such cases cannot be generalized. Simons (1987) pointed out that the budget management process consists not only of “programmed control,” which requires the members of an organization to act upon a decided plan, but also “interactive control,” which necessitates coping with changes by obtaining information about the environment during that period. In other words, the problem to be resolved using beyond budgeting can be regarded as a problem of budgeting operation rather than that of budgeting itself. Therefore, this paper focuses on understanding the mechanism of budgetary management to enhance an organization’s reaction to environment changes during such periods. Using a case study, the remainder of this paper presents a mechanism of operating budgetary management while viewing the total organizational environment, including the employment practice. In this regard, our case study refers to a Japanese textile manufacturer. The company adheres to the lifetime employment system, as do most Japanese companies. We show that this particular employment practice, which is unique to Japan, contributes in a novel way to budgetary management in times of stress.

Our results indicate the following. First, the company in our case study does not change its original budgetary targets depending on the situation; rather, it uses

the loosely coupled relationship between its initial budgetary targets and action plans to attain the former through feed-forward changing actions. Second, it copes with short-term environment changes using a management control package that consists of budgetary management and personnel evaluation. Third, the company's sales programs and production plans at the factory level are modified in line with changes to demand during the budgeted period. The company aims to meet its initial budgetary targets by rebuilding daily or monthly labor arrangement/reallocation plans.

This paper is structured as follows. The next section reviews the existing literature on how budgetary management can be used to cope with changes in the business environment. The third section explains the research methodology and provides a summary of the investigation. The fourth and fifth sections describe the company that serves as the case study. The sixth section discusses the research question. Finally, the last section concludes and suggests avenues for future research.

## 2. Literature review

As described earlier, under the budgetary system, the budget is formulated as a monetary action plan that will help the organization attain its annual profit target. Organizational activities are controlled in line with the management's budget during the budgeted period. Budgetary variance is interpreted as an "exceptional phenomenon," and its causes are analyzed so that appropriate corrective actions may be taken.

Nonetheless, the business environment does not always follow the premise of the original budget. To overcome possible issues when risks become reality, certain mechanisms may be used to cope with the environment changes, such as forecasting risks at the beginning of budgetary period and preparing multiple budgets in advance. On the other hand, some studies suggest dispensing with the preparation of multiple budgets beforehand and suggest that the management's standard of the budgeted amount may be varied *after the fact* as the situation demands. Typically, organizations resort to a variable budget system. Under this system, when the actual operating rate loss equals the standard rate loss in the original budget, the allowable budgetary amount is reset according to the actual number after analyzing the budgetary variance, and the new/future efficiency is measured and evaluated on the basis of this allowable amount (Welsch, 1964).

Nevertheless even if multiple budgets are prepared, there is no guarantee that one will hit the mark. Likewise, the variable budget system only considers changes in capacity utilization. Therefore, setting a risk-ready budget at the beginning of the budget period is not guaranteed to work. Instead, another system has been suggested; the budget may be revised *after* an uncertainty or risk comes to light, and then, it becomes easier to respond to the possibility of the identified risk becoming reality. A typical example is the rolling budgeting system, where the budget is reset once a month (not once a year). After each month, the next month's budget is formulated for a month exceeding the period of the original budget (Hansen and Van der Stede, 2004).

In addition, without rolling budgeting, it is possible to cope with environment changes to the business, by revising the original budget periodically in response to the situation. Simons (1987) showed that the budget revising practice in Johnson & Johnson made it possible to cope with high business environment uncertainty because the company's budgetary management process included not only "programmed control" but also "interactive control." He suggested that the budgetary management process went beyond "programmed control," an aspect of budgetary management used to motivate managers to execute predetermined management activities. In the case of Johnson & Johnson, the managers and top executives discussed the contents of the budgetary revisions. Executives could share the necessary information, which reduced their uncertainties while decision making. Simons (1987) called this process "interactive control," as the discussion process allowed information sharing.

Conversely, such an approach is not always adopted in budgetary management practice. This point has been acknowledged as a problem in *Beyond Budgeting*, which is advocated by some practitioners (Hope and Fraser, 2000, 2003). According to Hope and Fraser, the budget is a premise of an action plan set at the beginning of the period, but this premise can change significantly during the said period owing to uncertainty. The budgetary management process, however, sometimes stifles innovation "by rigid adherence to fixed plans and resource allocations agreed to twelve to eighteen months earlier" (Hope and Fraser, 2003: 8). In that case, according to Hope and Fraser, it can be difficult to motivate managers to attain original budgetary targets on the basis of "fixed performance contracts," which link budgetary attainment with

their performance evaluations. They suggested that there is a need to abolish the budgeting system and evaluate managers relatively by comparing their current and previous performance using key performance indicators (KPIs) or against their competitors' performance, which they call "relative improvement contracts." Some researchers agree with beyond budgeting (Bogsnes, 2008; Bourmistrov and Kaarbøe, 2013). Østergren and Stensaker (2011), for example, referred to the increase of flexibility to cope with environment changes for the attainment of KPI targets by decoupling performance evaluation from budgetary targets and adopting relative improvement contracts. In addition, as a case of increased flexibility, Henttu-Aho and Järvinen (2012) referred to a practice where the next action to be taken is discussed through regular rolling forecasts during the period, so as to attain the targets set at the beginning of the period, without completely abolishing the budgeting system. They called this practice the "beyond budgeting approach."

It should, however, be cautioned that resource allocation in budgetary management practice is not necessarily as rigid as that questioned in beyond budgeting. As Simons (1987) showed, there are suggestions to follow a budgeting process wherein the annual budget can be revised and reset in line with the conditions prevailing at the moment, recognizing that an initially unexpected situation can occur during the period (Hansen et al., 2003).<sup>1</sup> In addition, a recent survey of budgetary management practices shows that many companies revise their original budgets during the budgeted period (Ekholm and Wallin, 2000; Libby and Lindsay, 2010).

As Otley (1980: 422) mentioned, management accounting information systems "act as a package and must be assessed jointly." Thus, it may be possible to combine the budgetary system and other management systems successfully to allow flexible actioning to cope with environment changes to the business during the said period. Some suggested, for instance, that it is possible to cope with changes via rolling forecasts, which would not require changing the budgetary targets during the period. In such a case, the rolling forecasts of some KPIs are carried out regularly during the budgeted period (Ekholm and Wallin, 2000; Henttu-Aho and Järvinen, 2012; Lorain,

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<sup>1</sup> Conversely, some of the literature pointed out that organizational flexibility can be supported against uncertainty by purposely allowing some budgetary slack (Merchant and Manzoni, 1989). We, however, do not discuss how the slack included in budgetary target numbers affects the capacity to adapt to environment changes, because this paper focuses on the discussion of mechanisms supporting the attainment of budgetary targets set at the beginning of the budgeted period.

2010). Then, action plans are accordingly added or revised as feed-forward control (Nishimura 2003).

Resources internal to the company need to be reallocated if the action plans of departments are revised. It was suggested that the reallocation process can be carried out by devising multiple control levers (Simons, 1995) in the budgetary and other management systems. Frow et al. (2010) showed a case wherein managers had to attain budgetary targets but were allowed to reallocate resources between departments based on mutual adjustment, thus allowing the resetting of budgets and action plans. They analyzed this case using Simons' (1995) framework, which included four levers of control. In this case, managers had to attain the original budgetary targets under the belief and boundary system (Simons, 1995). Therefore, when the business environment did not change significantly during the budgeted period, the diagnostic system, which was centered on budgetary control, functioned as intended. On the other hand, under the belief and boundary system, managers had to contribute to the attainment of corporate strategic targets different than the original budgetary targets. Thus, they were expected to correspond in an agile fashion, which included recognizing environment changes, adjusting to them by resource reallocation, and ultimately attaining corporate targets. Frow et al. positioned adjustment between managers, supported by this system, as an interactive system (Simons, 1995). In addition, to secure its successful functioning, performance evaluation was linked to the degree of attainment of strategic targets, not to departmental budgetary targets.

As mentioned above, researchers have referred not only to approaches to prepare for risks forecasted preliminarily, but also to react quickly to changes to the business environment by revising budgets and action plans during the budgeted period. Most of these studies have examined the "package" (Otley, 1980) of the budgetary system and other management systems, and have shown some mechanisms that enable the business to cope with environment changes during the budgeted period owing to the organic linkage of these systems. Notably, in Frow et al.'s (2010) case, managers were empowered to revise budgets and action plans, and put in charge of resource reallocations/ adjustments as needed. They coped with business environment uncertainty in an agile manner through such adjustment processes.

On the other hand, Frow et al. (2010) hardly discussed how resources could

be reallocated quickly. How do managers, who are urged to adjust vertically and horizontally, reallocate resources? This paper aims to partly clarify such mechanisms, then focuses on the resource reallocation process, and analyzes how it is enabled using a case study on budgetary management practice in a Japanese company. The case study helps us to present some of the mechanisms that help the company to adapt to business environment changes by revising its budget.

Further, our analysis focuses on the belief that “the study of the effectiveness of management accounting information systems is intimately bound up with the study of all of the many kinds of control mechanisms used by organizations” (Otley, 1980: 422). Specifically, our case study shows that under Japan’s unique lifetime employment system, the personnel evaluation system is intimately bound with the budgetary system (Abegglen, 1958), which enhances managers’ flexibility to cope with business environmental change.

### 3. Research design

#### 3.1 Research method

The analysis in this paper is based on a field study conducted in a single firm, a Japanese general textile manufacturer called Seiren Co. Ltd. (hereafter, “Seiren”). In field study research, the main task of the researcher is to inquire into the practices of the business and analyze his or her observations by moving back and forth between the data and theory (Ahrens & Chapman, 2006). The case study method is generally adequate to deal with the questions “how” or “why” (Yin, 1994), namely, how or why a budgeting system allows flexible responses to business environment changes.

We conducted in-depth longitudinal field research. The research data were collected from July 2007 to August 2012. We carried out 36.5 hours of semi-structured interviews and factory observations, and participated in an open seminar conducted by the managing director. We also had e-mail access to confirm our understanding of the observations or ask explicit questions. In addition, we carefully investigated both internal and external documents to ensure the objectivity of the data obtained from the interviews.

We chose this particular organization as our case study because while Seiren uses the general budgeting system, it has been coping with many environment-



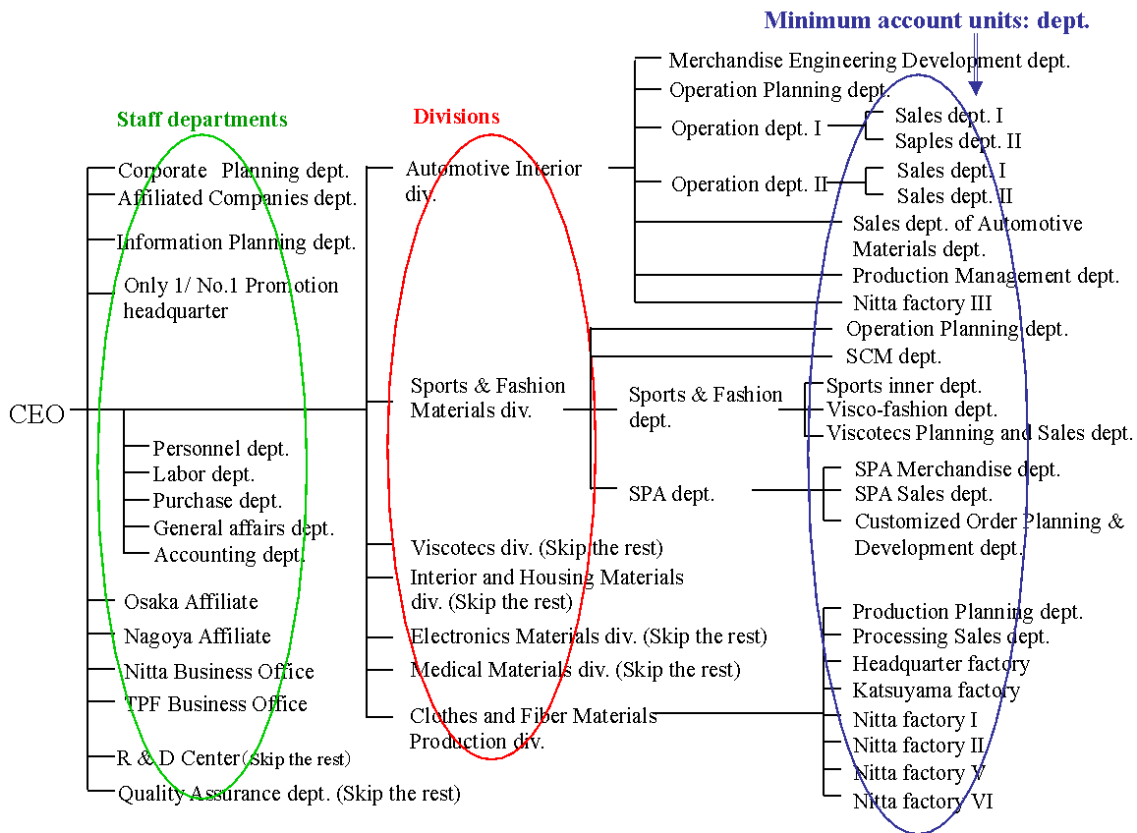
related changes to the business. Therefore, there appear to be contradictions between Seiren's budgeting practice and the budgeting literature. Examining this case will thus help us improve our understanding of budgeting practice.

### 3.2 The organization

Seiren is a general textile manufacturer in Japan, which comprehensively handles many textile-based processes, from reeling to sewing and sales. The term "general" means that the company conducts all manufacturing processes, from making yarn to final product sales, and they also handle many other products related to textile manufacturing, such as natural fiber, synthetic fiber, car parts, electronic components, and medical devices.

Seiren's sales amounted to 103 billion yen for the fiscal year ending March 31st, 2015. Seiren employs 5802 people. As shown in Figure 1, Seiren adopts divisional organization for each product. Each "division" takes the form of a functional organization and houses an "accounts unit/department" as its sub-organization. In the organizational hierarchy, the sales department and factory fall under the category of "accounts unit/department."

Figure 1 Seiren's Organization



Note: Seiren (2007b: 3)

#### 4. Management by objectives system and training multi-skilled workers

Seiren has constructed a budgetary and personnel evaluation system centered on the management by objectives system (MBOS). This section gives an outline of its personnel evaluation system under MBOS, focusing on the case of a factory. Next, we describe the company's budgetary management process.

##### 4.1 Annual planning and its input to developing departmental plans

In Seiren's MBOS, the corporate annual plan is used to develop the departmental plans, and their objectives are linked to personnel/manager evaluations. We explain this development process below.

In mid-January, the corporate planning department directs the divisions and departments to design mid-term and annual plans based on the exchange rates and crude prices.<sup>2</sup> Then, each department makes its own mid-term and annual plans based on the

<sup>2</sup> Seiren's fiscal year starts in April and ends in March in the next year.

most recent business environment. Their designs are coordinated horizontally and vertically within their division, and then they are deliberated upon in a company-wide management meeting held in the middle of March. If there are no issues, the plans are approved in the beginning of May by the board of directors along with the company's accounts statement for the last period.

Based on the corporate planning department's policy of "saving energy and cost to the extent possible," a section of the plan is devoted to improvements in lead time, margin percentages, and quality, as well as various cost reductions through manufacturing system improvements.

[Annual section plan of a factory]

- Security policy: no disaster or fire
- Improve production management revolutionary:
  - Shorten lead time from xx days to xx days
  - Improve margin percentage: improve factory profit ratio from xx% to xx%
  - Improve quality: improve percentage of defective products from xx% to

xx%

- Save material costs: xx thousand yen
- Save dyeing cost: xx thousand yen
- Save controllable cost: save outsourcing and inspection costs by acquiring storage space on the company's premises

...

Note: Seiren(2007a)

In response to such a plan, each division and department makes a profit and loss budget. For a factory or sales department, for example, the most important indicator of annual targets is the profit target.<sup>3</sup> To attain this profit target, the department studies the annual plan of the whole company and its preconditions, as noted by the corporate planning department (e.g., exchange rates and crude prices). Then, each factory and sales department, namely, the smallest settlement unit, sets its budget. The so-devised profit and loss budget is developed into a budget for each month.

Also, each section of the annual plan is modified twice a year. While the factories and sales departments make an annual plan for the whole year at the beginning

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<sup>3</sup> In Seiren, as discussed later, because factory outputs are sold through the company's sales department and other companies, the factory is treated as a profit center.

of the budgeted period, a modified plan is presented just before the start of the last half of the year. This modified plan considers the estimated performance of the first half of the year and considers the most recent business environment.

#### 4.2 Setting personnel objectives and personnel evaluation at the factory level

Once KPIs are determined for a division or department, they are imposed upon the relevant manager as his responsibility to attain and are utilized for personnel evaluation at the end of budgeted period. These targets are developed for all hierarchies of employees after a company-wide management meeting approves the annual plans of all units in mid-March. Specifically, after a superior explains his policy to his subordinates, each of them fills in his “Target Management Plan” (TMP). Then, they have personal meetings about the targets and TMP designs with their superiors, and these designs are coordinated.

The success and difficulty in achieving these objectives are reflected in personnel evaluations in the form of bonus appraisals and performance reviews alongside “job responsibility,”<sup>4</sup> “attendance,” and other relevant elements. Bonus appraisal is conducted twice in a fiscal year. The attainment of objectives in the MBOS has very strong links to the appraisal. Here, we have to be mindful of the fact that attainment of objective goals in quantitative terms alone does not form part of the appraisal; attainment of subjective goals, such as “job responsibility,” are also considered during the appraisal.

Like the MBOS referred to in the general literature (Drucker, 1954), to ensure transparency and fairness, the appraisals are conducted as meetings, where a superior and a subordinate discuss these issues until both are convinced. In addition, when the appraisal is settled, superiors consult each other on the appraisals of their subordinates in order to ensure fairness.

Performance review is conducted once a fiscal year, where pay raises, evaluation of skills, promotions, and so on are appraised based on some evaluation items. The appraisal form is evaluated (including the last three ratings based on the attainment of objectives and grades of ability (from grades 1 to 8)). The self-

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<sup>4</sup> “Job responsibility” indicates evaluating how an individual performs his/her role in the company and conforms as an employee of Seiren by following the company’s directions, manuals, and moral code, and preventing accidents (Seiren 2007a: 14).

certification form, which includes career plans (such as acquiring new qualifications and/or studying abroad, and requests for transfer) is also evaluated.

Managers' personnel evaluations are divided roughly equally on attainment of KPIs (such as factory profit target) as per the annual section plan.<sup>5</sup> The other half of the evaluation focuses on the mid-range agenda, implementation status in terms of self-development, work attitude, and so on, most of which are subjective targets.

Conversely, the rank-and-file employee evaluations pay less heed to financial performance. Table 1 shows the appraisal sheet used for the rank-and-file employee evaluation. According to Table 1, employees are evaluated on six items: "job responsibility" (compliance to manuals, office regulation, and so on), "outcome" (depending on the "role" and appraised on the gravity of the job, and "achievement," meaning degree of target attainment), "challenge" (refers to targets other than those concerning routine work, set for personal development), "additional points" ("self-reported performance," to be noted separately), "attitude" (toward work and effort expended), and "attendance." These items are weighted, with "Outcome" assuming the heaviest weight (occupying more than half (80 points) of the overall score of 150 points).

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<sup>5</sup> As discussed later, because Seiren's factory outputs are sold through the sales department and other companies, the factory is set as a profit center.

Table 1 Appraisal sheet for rank-and-file employees

Notes) In fulfilling this sheet, remember to fill in "qualification."

Date of submission: month      date      year

Fy of No.   Appraisal Sheet for Grade E (Class 4 to 6)

affiliation		grade		Employee No.	appraisal	dept. mgr	div. mgr	asst. mgr	
		class	name						
items	Appraisal contents			points MAX	appraisal				
					Comments on appraisal and calculation of points			points	
Job responsibility	Responsibility for things to be done Responsibility for things not to be done ※ Comments needed for 0P (0P or 10P)			10					
outcome	role	Points depend on job held. Fulfill point at the beginning of current period (when targets set). Comments needed when different from the initial point			40				
	achievement	Appraise attainment of role targets on 5-point scale. Refer to "Table of attainment points" below. Comments needed about appraisal except case of standard point.			40				
challenge	Personal targets	Value process (checked in personal meeting) a. Addressed every month... 1P (In its continuing 6 months 1P × 6 months = 6P) b. Actions recognized especially active... 4P c. Achievement rate (100%) of targets × 0.08... 8P			10	Achievement rate; _____ %  For final appraisal (fulfill calculation of points together)			
Additional points	Add points on self-reported performance - Check collective activities in the workplace, number of improvement suggestion, and so on			10					
Attitude	Attitude for work and activeness Evaluate degree of motivation and all that If standardized level, center point = 15P If anything noted specially, ± 5P/1note			30					
Attendance	No lateness or absence deserves full points. No point deduction up to 5 latenesses. - 5P/1 absence - 1P/1 lateness from 6th lateness and so on			10					
	total			150	※ Automatically calculated when sheet is prepared by PC.				
Rank based on Final appraisal (Finally evaluated on class 4 to 6 of grade E. Don't fill in.)									

General comments

【Table of attainment points】

Grade of role	Role points	Attainment points				
		▽▽	▽	Std.	△	△△
1・2	5、10	4	8	12	16	20
3・4	15、20、25、30	6	12	18	24	30
5・6	35、40、45、50	8	16	24	32	40

Note: Seiren (2007b: 9).

#### 4.3 MBOS and training multi-skilled workers

Under the MBOS (referred to in the previous section), improvements in quality, delivery, and cost are often set as targets for rank-and-file employees in factories. These targets are set depending on their jobs and form the basis of the “outcome” evaluation. Moreover, according to an advisor of the company’s corporate planning department (CPD), in the case of relatively short-term employees, targets can include a number of suggestions for improvement, which are accompanied by employee training.

It is especially important to note that the acquisition of skills by rank-and-file employees has considerable effect on their appraisals. Indeed, the training of rank-and-file employees as multi-skilled workers is positioned as part of Seiren’s human resources development policy. Notably, the job quantity of each process is variable, depending on the ordered quantity. It has to cope with seasonal variations in demand and faces issues in its work processes; for a factory that manufactures items such as clothes, operation utility may double in some months and decrease by half in others. The factory, however, has to meet the delivery dates and quality expectations of its customers. Therefore, Seiren sometimes has to reallocate employees to each process to cope with this situation. Like most Japanese companies, Seiren cannot employ or fire people on a short-term basis because it adheres to the lifetime employment system.<sup>6</sup> To prepare for such challenges, Seiren constantly trains its employees and helps them acquire multiple skills. These employees are not evaluated only on the basis of their skills, the targets for which are decided by them during target setting. Their skill acquisition is also reflected in evaluation items such as “role,” and sometimes, “job responsibility” and “attitude.” It can also be reflected in terms of how they respond to a “challenge.”

Its Chief Executing Officer, Kawada, explains how the company copes with the above-mentioned issues (Kawada, 2007: 45).

Consider a machine used in the finishing process in the second shift. An equipment operator is informed minutes after a fault develops. He corrects the fault and recovers the process, but in doing so, work comes to a halt for nearly three hours. If the

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<sup>6</sup> Generally, in Japan, employment is regarded to be guaranteed for the worker’s lifetime (until the retirement age at about 60-65 years).

operation of the third shift is executed in accordance to the initial schedule, output will fall below the scheduled quantity. A scheduler may consult the relevant section's chiefs, stop part of the reprocessing/dyeing work originally scheduled in the third shift, instruct an employee in charge of dyeing to veer off his regular process and handle the finishing process, urge the finishing process employee to take over the stalled work-in-process promptly and send the product for testing, and finally attain the scheduled output as planned. The interrupted reprocessing/dyeing work may be made up for during its daily time the following day with the help of other employees. Otherwise, one of dyeing workers may be asked to assume charge of the manufacturing work-in-process for the same dye color, and once this task is completed, he may return to the reprocessing work.

This case shows a situation where mechanical trouble in a process can throw the daily schedule off course, and the output may not be attained as planned. Here, the working sequence and job responsibilities of some workers are changed, thus helping the factory to attain the scheduled output. In this case, a dyeing worker is temporarily reallocated to the finishing process. This is possible because factory employees are routinely trained to be multi-skilled.

When we observed one of Seiren's factories, we personally witnessed how such training is routinely executed. A whiteboard hung up on a wall of the factory lists the skills each factory worker had mastered. As shown in Table 2, round magnets were stuck on the whiteboard to show the types of skills each worker had mastered. This system makes it possible to assign employees to tasks that may differ from their usual work, as discussed above. All the employees in Seiren's factory are trained to be multi-skilled. Our interview of a manager of the management section in the factory revealed that not only production line workers but also employees assigned to the "indirect" sections of a factory (such as the management section) are sometimes sent to the shop floor to help the workers there during overly busy periods.



Table 2 A list displaying factory employees' skills

Name	Skill A	Skill B	Skill C	.....
○○○○	●	●		.....
△△△△	●	●	●	.....
□□□□	●			.....
:	:	:	:	.....
:	:	:	:	.....

Notes: We reconstructed this list based on our observations on the factory floor on March 28, 2011. “●” in the table denotes round-shaped magnets placed on the chart to indicate the skills possessed by the employees.

## 5. Budget revision and reassignment of multi-skilled workers

As noted earlier, Seiren’s MBOS links its budgetary management system to the personnel evaluation system. We now explain the company’s practice of budgetary management.

### 5.1 Budgetary target of the factory

Each factory manager at Seiren is responsible for attaining his respective divisional or departmental target, as developed from the annual plan. This attainment is linked to the personnel evaluation.

Profit earned is an especially important target for a factory director. Seiren thus regards a factory as a profit center. The profit in this case is calculated as below.

Profit of the factory = Output – Processing cost – Cost allocated for common expenses of headquarters and divisions

Here, “output” refers to the factory’s sales handled by the sales department.<sup>8</sup> Seiren’s sales department procures the main materials such as yarn and gray goods (a woven fabric as it comes from the loom and before it has been submitted to the finishing process). Then, the factory receives the supplies from the sales department and undertakes processing after paying a certain internal transfer price.

<sup>8</sup> Seiren’s sales department is also considered to be a profit center, and its profit is calculated as below.

Profit of the sales department = Sales – Direct material costs – Distribution costs – Cost allocated for common expenses of headquarters and divisions

Sales to the sales department comprise most of the factory's processing sales.<sup>9</sup> Therefore, direct material costs are borne by the sales department, and the costs accrued in the factory are referred to as the processing cost of the products. Thus, the profit of the factory is obtained by the equation seen above.

As mentioned above, under the MBOS, Seiren's managers are responsible for meeting quantitative targets centered on profit. The profit target is the most important KPI for the managers of line departments, including factory directors. These targets, which are set at the beginning of the fiscal year, are emphasized as "necessary to meet" targets.

## 5.2 Monthly budget revision

The company holds "division meetings" at the beginning of every month, where managers report on the progress of their sectional plans and discuss future aspects. This meeting is held for each division, where the performance of the previous month and future trends are reported by the managers of each division or department and discussed. The participants include the CEO, division managers, departments under the division, units under the departments, and the manager of the corporate planning department at headquarters. Each division manager reports his performance and trend to the CEO. Table 3 provides a schematic of the profit and loss statement used in the monthly report of a factory at Seiren.

In the division meetings, managers also report on their analysis of the variance between the budget and the actual results of the previous month. In other words, the division meeting needs them to report the "modified plan" of the present month and involves a discussion about its validity. The modified plan refers to the revised divisional or departmental plan, in the light of changes in the business environment (such as modified demand or price of raw material) compared to when the annual plan was originally set. In a division meeting in May, for example, managers reported not only the performance for April but also presented a modified plan for the first half, by integrating their performance and the revised plan for the remaining first half (May to September) following the incorporation of the latest change to the business environment. For example, columns (A)-(B) of Table 3 show the extent of changes

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<sup>9</sup> A part of sales (i.e., the output) of a factory partially includes sales to other companies.

between the modified plan (column A) and the original plan (annual plan set at the beginning of the budgeting period; see column B). Then, the column titled “Remarks” shows the principal reasons for the changes and the specific contents of the modified plans.

In the modified plan, the original KPI targets, including profit (“Operating income II” in Table 3), are not changed in principle; rather, the most important aspect in this regard is how managers will attain the KPIs. An advisor to the corporate planning department, who has been involved with the design of Seiren’s management system for a long time, explained the following.

The CEO rigidly checks the status of the monthly sales, outputs, and expenses, while managers are allowed to modify parts of the budget as long as they can attain their respective target profits (personal communication via interview on November 23, 2007).

Of course, the CEO will draw attention to the modified plan if its expenses have increased excessively compared to the original plan, despite the fact that the former may attain its KPI targets. However, in principle, the highest priority is placed on ensuring that the modified plan is robust enough to attain the KPI targets set at the beginning of a fiscal year.

On the other hand, the KPI targets basically remain unchanged during the budgeted period as they are linked to the personnel evaluation of managers under the MBOS. A manager of the company’s improvement promotion department at the headquarters explained as follows.

Monthly plans are often changed (from the original plans). ... A customer’s order schedule varies from that of a month before; orders for a certain product number may have decreased, while others may have increased. Therefore, we typically modify the monthly plan. However, as we necessarily have to pursue profit, we must adhere to the KPI targets set in the original plans (personal communication via interview on February 12<sup>th</sup>, 2009. The text within the parentheses was supplemented by the authors.).

In the case of a factory, its profit or “Operating income II”, listed at the

bottom of Table 2, is the most important KPI in a monthly division meeting. While this number is essentially calculated as the output minus a variety of costs incurred by the factory, even if the output appears to be less than the original plan owing to changes in the market, the factory's profit target does not change. Therefore, the factory director has to make efforts to reduce costs in order to attain the original target despite the changed output.

Therefore, each division examines ways to reduce costs, weaving them into a modified plan, and reports these ideas in a division meeting. In other words, they "plan" to attain the original KPI based on the latest estimation of the business environment. The profit and loss statement shown in the row titled "Modified plan" in Table 3 is a monetary expression of the modified plan.

For example, in the case of expenses accrued for raw material and dyes (which constitute the majority of variable costs), the reduction targets are already set with respect to each lower-rung employee in the beginning of the budgeted period. However, when attaining the original factory's profit target is not enough, measures such as process change are considered and determined, and the amount of cost reduction is estimated and incorporated in the modified plan. In addition, when it appears that the output may fall short of the original plan owing to rapid business fluctuations, the factory has to reduce its fixed costs. In such a case, factory managers examine ways to reduce controllable fixed costs for the current period, for instance, by reducing business travel expenses and shifting repair costs by postponing less urgent repairs.

Moreover, the labor cost, which covers most of the uncontrollable fixed costs,<sup>10</sup> can be shifted between factories or months within the current period via budgetary management. To do this, a factory and its production management department or production planning department would need to coordinate. If April and May are considered as off-season and on-season months respectively, the number of operating days in April can be decreased, and this decrease can be added to the month of May. In such a case, the budgetary control for the labor cost of the transferred operating days is shifted to May.

In addition, it is notable that when one factory is in off-season and another

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<sup>10</sup> When the labor cost of the current month is shifted to another month, the cost of the current month decreases in the budgetary management. However, the amount of salary workers receive does not vary. Therefore, the labor cost is included under "Uncontrollable" fixed costs in Table 3.

is in on-season, the former can lend its workers to the latter through coordination with the personnel department at headquarters and the production planning department. This is analogous to transferring the labor cost of workers from the lending factory to the borrowing one. According to such a system, although the labor cost of a factory is essentially part of its fixed costs, it is controlled flexibly in the budgetary management, and the factory director is urged to minimize the idle time of workers within a given period.

Table 3 A schematic of a briefing paper presented at a division meeting reporting the profit of a factory

Account	Performance of last month	Modified plan (A)	Original plan (B)	(A)-(B)	Remarks
Output					
Variable costs	xx expense				
	:				
	:				
	Sum				
Marginal profit					
Controllable fixed costs	xx expense				
	:				
	:				
	Sum				
Uncontrollable fixed costs	xx expense				
	:				
	:				
	Sum				
Allocation cost for common expenses					
Operation income II					

Notes: We have reproduced the table presented in our interview with the company's personnel on February 12, 2009.

### 5.3 Liaison meeting supporting diagnostic and interactive uses of the budget

The actual profit of the factory, as discussed above, is measured as a rough estimate on a daily basis. Each factory has an accounting system, which provides a "Production management daily report" (PMDR) at around 11 a.m. every day. It shows

the amount of production by product numbers, profit and loss performance, and the adherence to the monthly budget. Following the publication of the profit and loss performance of the previous day, a “Liaison meeting” is held for about 30 minutes to an hour in the factory every day. The factory director and all its managers and chiefs participate in these meetings, share information about the daily progress in terms of the budget, and examine ways to cope with the situation faced on that particular day.

Specifically, reported items include cumulative profit and loss performance, progress on the factory floor, and number of defective goods from the previous day’s production. These reports thus explain how the situation has changed compared to the original schedule or how materials are used and so on, when there is variance between the day’s results and the original plans regarding profit and the work process. In addition, as a way to cope with such situations, the meeting’s participants examine how they may alter their daily schedule through shift changes, personnel reassignments as backups, and so on. A manager of the improvement promotion department at headquarters provided the following explanation (interview on February 12, 2009; the text within the parentheses has been supplemented by the authors).

(In recent years especially,) much value has been placed on the delivery time and meeting customers’ needs and providing customer satisfaction. Therefore, when customers make changes (to the daily schedules), we have to respond accordingly. So, we first consider how to modify our daily schedule when there is a significant increase (in the amount of production). As each machine has its own process schedule on the shop floor, ... it has to be set again (to meet the predefined deadline and quality).... Then, ... all the managers on the shop floor are informed of the modified daily schedule, quantity of work, sales, number of tests, and accordingly, accrued profit performance.

## 6. Discussion

### 6.1 Resource allocation as part of budgetary management

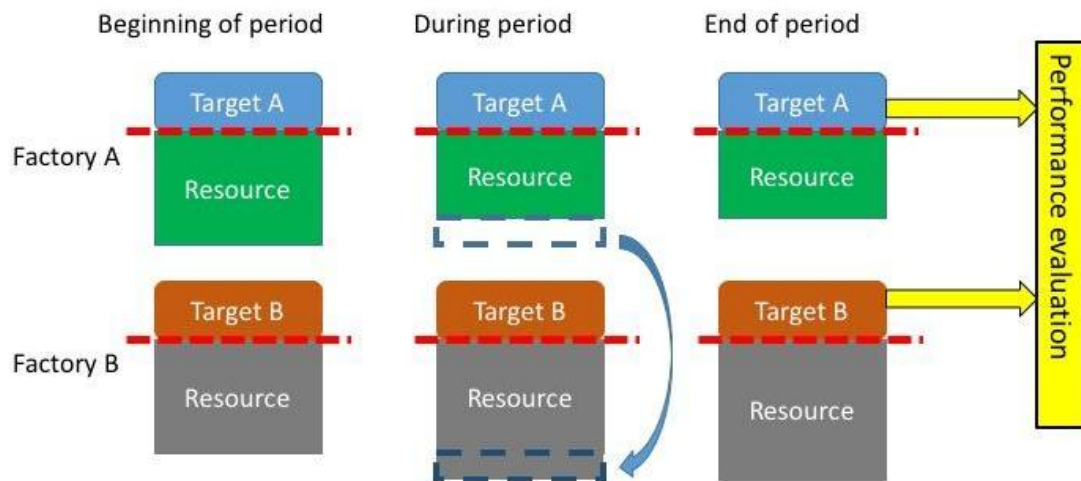
As we described above, budgetary management aspires to address the modified demand caused by environment-related changes during the budgeted period. The personnel evaluation of a factory manager is linked to his/her original profit goal, wherein he/she revises the plan on a daily and monthly basis and is motivated to achieve

the original profit goal.

Frow et al.'s (2010) case study describes a mechanism in which the budgetary goal can be revised through belief systems and boundary systems, so as to enhance the company's response to changes to its environment. Managers coordinate resource reallocation and revise budgetary targets interactively (Frow et al., 2010). This is called continuous budgeting. On the other hand, Seiren's budgetary targets are fixed because the degree of attainment of the original budgetary goals is, to an extent, linked to personnel evaluations under the MBOS, although some subjective evaluation is also undertaken. Then, Seiren copes with the modified demand resulting from the changes using fixed budget goals and flexible action plans. To make this system work, Seiren applies a loosely coupled budgetary management system, in which (as the name suggests) budgetary targets and action plans are loosely coupled. Budgetary targets are based on the action plans devised at the beginning of the budgeted period, and such plans are called "coupled" plans. However, the action plan can be changed separately during the execution phase, which means that the relationship becomes loosely coupled. The original action plans set at the beginning of the period may still help attain the budgetary targets in the premised demand environment. However, the demand environment has uncertainty. When a gap between the premised plan and the actual situation is recognized, the original plan loses its suitability with regard to attaining the budgetary target. Therefore, the new action plan will need to be feed-forwardly (Nishimura, 2003), drawn up to match the initial budgetary targets.

The action plans (the premise of budgeting) addressing human resource arrangements or time schedules, as well as the budgetary targets in Seiren's management accounting practice, are "responsive," but each event also preserves its own identity and some evidence of its physical or logical separateness (Weick, 1976, p.3). We explain this relationship in Figure 2.

Figure 2. A Schematic of Seiren’s Management Accounting Practice



Budgetary targets are used for personnel evaluation in the target management system. To ensure fairness, these targets cannot be changed during the budgeted period. Conversely, to help the factory achieve its budgetary target, resources are allocated during the planning process conducted at the beginning of the budgeted period. This allocation can be changed during the said period. Concretely, the estimated operating rate is modified because of the environmental uncertainty. In such a situation, the factories change their action plans and reallocate resources in terms of lending and borrowing of personnel, which is decided during departmental or liaison meetings. If such lending and borrowing of personnel occur, the labor costs are transferred to the borrower factory from the lender factory.

In highly uncertain economic environments, budgetary management poses limitations because budgets are set based on action plans that are made at the beginning of the budgeted period (Hope and Fraser, 2000, 2003). Frow et al. (2010) argued about the efficiency of budgetary management in uncertain situations, showing a mechanism that allows changes to budgetary targets and resource allocation through a belief system and a boundary system. Seiren’s case shows a different mechanism, in which a loosely coupled relationship between fixed budgetary targets and action plans enables budgetary management in uncertain situations.



## 6.2 Personnel evaluation to enhance resource allocation during the budgeted period in the case of lifetime employment

As discussed above, Seiren uses loosely coupled budgetary management to cope with modified demand brought about by changes to the company's environment through resource reallocation during the budgeted period. Human resources may also be temporarily reallocated under such circumstances. Like other Japanese companies, Seiren follows the lifetime employment policy and cannot fire employees owing to short-term changes in demand (Abegglen, 1958). Seiren's management system is intended to maximize the employee capacity usage rate to cope with changes in demand.

Seiren trains its employees to possess multiple skills. The personnel evaluation exercise also helps employees enhance their skills (an example of a loosely coupled budgetary management system). To deal with changes in demand or technical specifications in the Japanese labor market, which is known for its low mobility, it is necessary to be able to utilize the company's internal human resources strategically (Imai and Itami, 1984). Seiren's labor education system does this by enabling its employees to work on other lines or in other factories within the company.

The personnel evaluation system at Seiren also obtains employee consent for the above-mentioned temporary labor arrangements during the budgeted period. As explained above, multi-skilled labor education forms part and parcel of the employee education system at Seiren. Therefore, learning skills are built into personnel evaluation. It is important to note that Seiren's employees are evaluated not only by their ability to perform their own duties but also by their capacity to learn new tasks. As most Japanese companies used job grade evaluation or comprehensive job performance evaluation (Koike, 1994), Seiren's case is no exception. In its objective management system, learning a variety of skills is considered to be part of the employee's job performance improvement, which is directly and indirectly linked to personnel evaluation. Factory employees are motivated to learn a variety of skills through this system. This makes it easier for factory managers to reallocate resources by changing employee positions temporarily to match demand.

Seiren also flexibly reallocates monthly or daily production capacity (fixed labor costs as a whole) to departments with high operating rates. Multi-skilled labor education and the personnel evaluation system allows the organization to consider its

fixed labor costs as a whole in terms of variable costs for its factory or one of its lines. The system enables Seiren attain its original budgetary targets. Thus, Seiren's management control package (so termed by Otley (1980)) helps it respond flexibly to changes as well as attain its original budgetary targets during the budgeted period.

## 7. Conclusion

This paper discussed a budgetary management process that enables a company to cope with modifications in demand brought about by environment changes. We presented a case study of a Japanese textile manufacturer called Seiren. The existing literature refers to the process used to revise budgets or action plans so that a company may attain its objectives. This paper contributes to the literature by identifying a novel budgetary mechanism to help the company cope with changes in the business environment. Concretely, Seiren does not change its original budgetary targets depending on the situation; rather, it uses the loosely coupled relationship between its initial budgetary targets and action plans to attain the former through feed-forward changing actions. In doing so, it addresses the situation by reassembling its total budgetary plan.

Our second contribution is revealing what kind of mechanism enables resource reallocation in the Japanese context, namely, the lifetime employment system. Seiren places emphasis on educating its employees, to make them multi-skilled workers, a key factor enabling the reallocation of human resources. Furthermore, employees need to consent to such temporary arrangements. This is influenced by personnel evaluation and their job contracts, which emphasize the importance of comprehensive job performance, including continued learning to expand future capabilities. Taken together, Seiren copes with short-term changes in the business environment using a management control package that consists of budgetary management and personnel evaluation (Otley, 1980).

As our third contribution, our case study reveals another, as yet undiscovered, implication regarding the mechanism of budgetary management. Hansen et al. (2003) insist that while "prior research has explored the links between budgeting and strategic planning, the link with operational planning remains largely unaddressed in the management accounting literature." This paper discusses the latter link using

Seiren's budgetary management system. Seiren's sales program and production plans are modified in line with changes to demand during the budgeted period. In addition, the company aims to meet its initial budgetary targets by rebuilding daily or monthly labor arrangement/reallocation plans. We need to discuss this relationship between budgetary planning and operational planning in greater detail. Such a discussion will form a topic for future research.

This paper also suffers from some limitations, namely, the possible lack of generalization. The results of this paper are derived from a single case study of a Japanese company using the lifetime employment system and practicing multi-skilled labor education. To be able to generalize this analysis, a more robust investigation via other case studies or a statistical analysis using questionnaires must be performed.

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