ACCOUNTABILITY AND PSEUDO MICRO-PROFIT CENTRE: A FIELD RESEARCH

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1. INTRODUCTION

It has long been suggested that the role of accounting in management control should be thought of in an organizational context (Hopwood, 1983). Management accounting systems become meaningful by being drawn by organizational members into an organizational context, so the behaviour of organizational members is not decided by written rules and accounting control systems, but by a system of accountability (Roberts & Scapens, 1985).

In particular, in a practice called the Microprofit centre (hereafter MPC) system, a traditional profit centre system is used in a subtle and unobtrusive way as a ‘pseudo’ system; the accountability for profit in the MPC system is different from the one so often discussed in the standard management accounting text books. Notwithstanding its name, MPC is, by definition, not a profit centre, but a pseudo profit centre, where chiefs of units of MPC are not allowed to make decisions involving rights including price setting and choice of customers. Because of this, they are not stringently evaluated by profit results.

This nominal role of the pseudo profit centre might demotivate employees from committing to the earning of profits; otherwise, profit accountability might be ignored by employees. However, according to previous research, the MPC system did not demotivate nor was it ignored by the chiefs of the MPC units (Tani & Miya, 1998; Kaplan & Cooper, 1998). Indeed, the MPC system is reported to increase motivation in employees. Consequently, they started actively and autonomously committing to their work, which brought cost reductions and profit increases to the firms. The introduction of the MPC system creates a system of accountability to cause changes in them so that they focus on reducing costs to a greater extent than before the MPC was introduced.

Accountability literature points out that the same accounting system could be interpreted differently if the system of accountability is different. Ahrens (1996) demonstrates that the meaning of financial accountability is different between UK and German breweries, because the image of a ‘good manager’ is different between the two countries. His work suggests that in order to see how a management control system works that a system of accountability should be examines. An MPC system establishes a system of accountability which chiefs of the MPC system interpret as indicating they should improve their manufacturing process. Even though it
has pseudo traits, an MPC system creates a system of accountability to influence behaviours of the workers who are involved in the system.

Regarding the effects of accountability, Roberts (1991) suggests two types of accountabilities, one is the hierarchical forms of accountability and the other is the socializing forms of accountability. Roberts relates financial accountability to the hierarchical forms of accountability. When held accountable in that context, people tend to focus on maximizing their own performance at the expense of cooperation with others, resulting in the creation of an individualizing effect. This tends to hamper communication among people, even to make it difficult for organizations to achieve goals. Compared to the hierarchical forms of accountability, another form of accountability occurs among people with equal status with honest communication, which brings humane relations among people and dissolves boundaries by promoting understanding of each other. In the case of Roberts (1990), ‘the conference technique’ worked as an alternative accountability to build a sense of interdependence by internalizing a shared view of market reality and drawing a strong reciprocal sense of obligation, implying the socializing forms of accountability.

Roberts argues that these two types of accountability are interdependent with each other, but that this interdependence is not recognized. In order to avoid the damaging effects caused by the hierarchical forms of accountability, he points out the possibility of recognizing the interdependent relationship between the two forms of accountabilities. Following Roberts’ indication of the possibility of recognition between these two forms of accountability, Frow et al (2005) demonstrated that these two accountabilities could coexist in the same management control system. An MPC system also incorporates both forms of accountability. These two forms are used in combination so that they could enable firms to achieve corporate objectives.

This paper, conducting a single case study, examines a system of accountability which is established by the introduction of the MPC system. In the firm which is dealt with in the case study, experience of employees regarding explaining the performance to others in meetings made them held accountable for pseudo profit results. In so doing, the system became ‘real’ to them to the extent that it made them commit to the work. In addition, this paper explains how the firm used two forms of accountability to make the employees to be motivated to contribute
to the corporate profit. This paper contributes to the accountability literature to demonstrate how a pseudo profit centre system could be used with two forms of accountability.

The rest of this paper is structured as follows. In the next section, the previous literature of accountability and MPC systems is reviewed, and then a context of an MPC system is explained. In the third section, the method of the case study is described. Then this is followed by the evidence from the single case study of the MPC system. In the fifth section, a system of accountability established by the MPC is analyzed. Finally, implications and the conclusion of the case study are discussed.

2. LITERATURE REVIEW

2.1. ACCOUNTABILITY

The behaviour of organizational members is decided by the system of accountability, not by the accounting system (Roberts & Scapens, 1985). Using the theory of duality of structure developed by Giddens, they distinguished between the accounting system and the system of accountability. According to them, an accounting system is comprised of a body of rules, which are drawn on by organizational members. On the other hand, a system of accountability is ‘how they draw upon rules’, that is, it is the system in use, which decides the meaning of rules and legitimacy of behaviour. In an organization, the meaning of the system is open to negotiation, often influenced by power relationships among organizational members.

Accountability is different from responsibility in the sense that targets are incorporated though this is not the case for responsibility (Hoskin, 1996). According to Hoskin (1996), responsibility means stewardship, that is, being liable to answer for duties. However, accountability is more extensive in area and continuous in time. Targets are already included in it, followed by surveillance, and judgment after the task was carried out.

A system of accountability is different from context. A context where a system of accountability occurs brings difference. In a face to face communication setting, a large amount of information is conveyed to the people who ask questions from people who answer the questions, whereas in a distant setting where the main source of information is accounting figures only the written numbers are taken into account when the senior managers decide if the
more junior manager could discharge their accountability, resulting in distorted communication between them. As can be seen in the difference of a system of accountability in breweries in the UK and Germany, even the financial accountability can be taken differently because the image of a ‘good manager’ was different between the two groups of breweries, so naturally the way of interpreting accountability numbers was different for each other.

Change of a system of accountability brings changes in behaviour. Accountability papers on the UK public service organizations regard financial accountability as a device to promote change, from culture of public service and bureaucracy into one with a business consciousness in British Rail (Dent, 1991), public sector and engineering culture into an enterprise culture in the UK water industry (Ogden, 1995). In addition, the introduction of financial accountability made boundaries between costs and caring in the UK social services organization blurred (Llewellyn, 1998), changed its capital in museums and historical institutes in Canada (Oakes et al, 1998) and combined folk accountability shared among members of the UK education organizations (Ezzamel et al., 2007). While these papers focus on the effects of financial accountability on the behaviour of the organizational members, the effects of pseudo financial accountability on behaviours of the people who are held accountable for it is not clear yet.

Difference in context brings about different effects in a system of accountability. Roberts (1991) divided the effects of accountability into two forms: the hierarchical forms of accountability and socializing forms of accountability. Referring to the example of a job interview, Roberts explains that the hierarchical forms of accountability occurs in a context where absolute asymmetrical power relations exists and fear of exclusion follows, so that people tend to adapt themselves to the ideal image the job interviewers expect of them. This form of accountability, related to the financial accountability system, could damage co-operation among people, because this accountability focus people’s attention on their own performance.

The hierarchical forms of accountability could end by distorting the information exchanged among people who are concerned the system. In fact, Kirk & Mouritsen (1996) demonstrate how power relations in a distant setting between a parent firm in Denmark and a subsidiary in Canada distort the communication between them. Failure to discharge profit accountability by the subsidiary resulted in the resignation of the senior managers of the
subsidiary even though the subsidiary questioned the validity of the accounting system through talks with the parent firm. Financial accountability levelled out the uniqueness of the environment of the subsidiaries.

On the other hand, the socializing forms of accountability could alleviate the harshness of the hierarchical forms of accountability, enabling honest communication among people and proactive inquiry in terms of understanding each other. In the case study of an electric bulb company, ELB, Roberts (1990) showed that the newly appointed CEO effectively used the opportunities of conference with senior managers to enable them to internalize market reality and thus bring about a reciprocal sense of obligation among them. This sense of reciprocal understanding strengthened their commitment to the survival of the company in the severe market condition.

Referring to these two forms of accountability, Roberts (1991) points out the importance of recognition of their interdependence. He comments that the socialising forms of accountability cannot be the alternative of the hierarchical forms of accountability, exemplified in management accounting systems, but that the hierarchical forms could cause dysfunctional behaviour in employees if it were not for the socializing forms of accountability.

Demonstrating the possibility of management control systems, Frow et al. (2005) presented a case study where two forms of accountability were used so that the harshness of the management accounting system in a hierarchical relation was complemented by the informal horizontal communication among managers. Through a case study of Astoria Plc, they pointed out that the socializing forms of accountability are intentionally incorporated into the management control system in their case study. Their work indicates that a management control system could accommodate both forms of accountability at the same time, and alleviate possible damage that could be caused by individuating effects.

2.2. MICROPROFIT CENTRE SYSTEM

The term microprofit centre (MPC) system was first coined by Cooper (1995). In this work, he researched the practices of firms in order to look at new cost-management methods. He researched several Japanese companies and found a cost management practice that is beyond standard costing management. Each company divided its organization into small-sized
units and treated them as profit centres. Since the unit size was small, companies were able to adapt flexibly to environmental changes. In addition, treating the small unit as a profit centre encouraged the chiefs to invest more effort into increasing profits.

This system puts pressure on unit chiefs and motivates them to behave like entrepreneurs, although each unit has limited authority to act as a profit centre. Cooper called these units ‘microprofit centres.’ Most of the reported cases of an MPC fall into the pseudo-MPC category by definition\(^1\). A real profit centre has influence over both sales and costs, but a pseudo-MPC mainly has influence over costs. Kaplan & Cooper (1998) point out in their case study of an MPC that senior managers of the units did not expect employees to change the selling prices or choice of customers, but rather expected them to focus on reducing costs. In that sense, that senior managers did not have the intention to empower the employees as would the usual profit centre chief. An MPC system is applied to areas such as manufacturing, support, and sales functions.

One of the major characteristics of an MPC is to produce an individual profit and loss statement for each unit. In many cases of a pseudo-MPC, a price is fixed by the system designer of a firm. The profit and loss report reflects what a system designer thinks important as a key performance indicator to direct the attention of their workers, such as product quality, savings on floor space, and inventory. The profit and loss report has enabled firms to succeed in saving floor space, decreasing inventory, and increasing product quality. The other characteristic is that they have meetings with the chiefs of the units regularly. In the meetings, not only do the chiefs report their performance to their senior managers, but they exchange best practices with each other to improve their work processes.

Introduction of an MPC is reported to bring advantages. The introduction of an MPC intrinsically motivates the chiefs of the MPC units (Tani & Miya, 1998) so that workers who were previously waiting for orders from supervisors began to think spontaneously and take on responsibility for profits (Cooper, 1995). Effects are reported including cost reduction, increased volumes, and improvements in product quality (Kaplan & Cooper, 1998).

\(^1\) One exception is the case of the Japanese firm, Kyocera. It gives its MPC chiefs full decision-making rights as a profit centre.
The reason for these effects could be explained as the influence of information feedback. Kaplan and Cooper (1998), after finding a U.S. case of a micro-profit centre called 3B plant, attributed the causes of success to the features of accounting information, which (1) provides rapid, easily understood feedback, (2) internalizes the cost of non-conformance [to the standard quality]; (3) informs trade-offs; (4) sets priorities and justifies the spending on improvement and investment; and (5) empowers employees for local decision making. In addition, Merchant and Van der Stede (2003) point out that a micro-profit centre could give employees an insight into the competitive market and help change their mindset.

Alternatively, the causes of the positive effects of introducing an MPC could be attributed to behavioural and cultural control (Matsugi, 2005). Through a case study of the MPC system of a metal processing department, Matsugi (2005) pointed out that behavioural control and cultural control through monthly performance meetings among Presidents and senior managers are what is working on chiefs of the units, not result control,. In most Japanese firms that introduced an MPC, monetary rewards are not paid to the units. In most cases, top management publicly recognizes high-performing units in an MPC in the presence of all employees (Tani & Miya, 1998). However, it is not clarified how the pseudo profit accountability influences employees in an MPC so that they change their behaviour to work autonomously.

**SUMMARY**

From the standpoint of accountability literature, the MPC system brings up two issues. One is creation of a system of accountability: how the chiefs of the MPC system take the system seriously. An MPC system, which has a pseudo profit centre character, influences the mindset of chiefs of the MPC system and causes changes in their behaviour. Although they are spotted individually by the unit performance, the profit results are not accompanied by monetary rewards or bonus and salary. Even so, the chiefs of the MPC system are motivated to reduce costs and eventually to increase profits. In this sense, the MPC system is taken seriously by chiefs, this is, it creates a system of accountability.

The other issue is the simultaneous use of both the hierarchical forms of accountability and the socialising forms of accountability. An MPC system basically helps to strengthen a hierarchical relation. This is because, in the meetings of the MPC system, hierarchical accountability is established between the chiefs of the units and their superiors: chiefs report to
their superiors and superiors question the chiefs in the regularly held performance meetings. On such occasions, the performance of the units is made visible and comparable in the eyes of their superiors with a profit and loss report produced in an MPC system. This implies that these meetings would create the hierarchical forms of accountability. However, the MPC system is operated, in such a way that it could avoid the distortion of communication, instead creating honest communication and mutual understanding, that is, the socializing forms of accountability.

In the following case evidence, the way the MPC system can create a system of accountability and the usage of the MPC system employing both the hierarchical forms of accountability and the socialising forms of accountability is presented.

3. RESEARCH METHOD

3.1 CASE CHOICE

The MPC system is a relatively new practice and the number of firms who have introduced this system is small, so it was difficult to find cases that satisfied certain conditions. In the course of trying to find firms that operated an MPC system, the author happened to find the case of Sumitomo Electric Industries, Inc. (SEI), a major electric wire manufacturer in Japan. SEI started its MPC system in 1996 and one of the set-up members and an important instructor of this system is Yukiyoshi Deguchi. The author started the research on the MPC system in 2000. As Yukiyoshi Deguchi was working as a consultant to introduce the MPC system to related companies of SEI, the author asked him to recommend a company for a case study and he recommended the firm of this case study. In this firm, according to Deguchi, the MPC system was well accepted by the employees and the senior managers were supportive of the system. So, the author started to research this firm in October 2001.

3.2 RESEARCH METHOD

First, the interviews were intensively conducted over two days in 2001; the interviewees were 4 workers who were in charge of the MPC system and their 2 senior managers. Before the interview, a small questionnaire survey was conducted to get an overview of the system from
them and this was used as an interview guide. In addition, on the second day of the interview, the author attended the monthly MPC performance meeting.

In 2005, a series of interviews were conducted with people including the workers, both incumbent and retired senior managers and costing staff. Again, in 2009, another interview was conducted with 4 workers and 2 senior managers. These interviews were tape-recorded and transcribed\(^2\). In parallel with this research at the firm, the author continued to attend the in-company school for the MPC system on and off from 2001 to observe how workers were given training by Deguchi in the school.

4. A CASE STUDY OF THE MPC SYSTEM IN KITANIHON

4.1 BACKGROUND OF THE MPC IMPLEMENTATION

Kitanihon Electric Cable Ltd. (hereafter Kitanihon) is located in Miyagi prefecture, northern Japan and its main products are electric wire, communication wire and fiberoptic cable. This firm is a related company of SEI\(^3\) and it is also a subsidiary of a major Japanese electric power company, Tohoku Electric Power, which is the major customer of electric cables of the firm. Annual sales of the firm as of the year 2000 were about 24 billion yen or 150 million pounds. The number of employees as of 2001 was 504. The firm comprises five divisions, one of which, the Electric Cable division, shares major sales in the whole of Kitanihon. This division introduced the MPC system in its manufacturing group.

At the time they decided to implement the MPC system in their division, a head of the Manufacturing department of the division had been concerned about the competitive environment in the electric cable market, although his division had recorded continual profit every year, he retrospectively commented in an interview in 2005. The entire Kitanihon company had been dependent on his division for its sales. Meanwhile, the major customer and parent company requested unit price cuts from his division every year. Besides, foreign electric cable manufacturers had been entering the Japanese market; it had thus become a price war.

\(^2\) The interview conducted at the in-company school for the MPC in 2005 was not recorded, since it started unexpectedly when the author happened to see them at break time between classes in the school.

\(^3\) Deguchi was allowed to work as a consultant only to the related company of SEI.
Furthermore, some of these senior managers felt that they needed an employee development system in order to be cost-competitive for the forthcoming difficult time.

In 1999, these senior managers happened to attend the presentation about the MPC system given by Deguchi. They were all impressed by the concept of a system and persuaded the division head to implement this system in their factory. In January 2000, the system was formally applied to the Manufacturing Group of the Electric Cable division.

4.2. THE INTRODUCTION OF THE MPC SYSTEM

4.2.1 THE MPC ORGANIZATIONS

Originally, the manufacturing group was organized based on the manufacturing process: drawing, annealing, stranded, vulcanization, insulation, twisting, sheathing, and bundling. However, when the MPC system was implemented in January 2000, the units were reorganized by product type (by the diameter of electric cable products): a large products company (called BPC), a medium-sized products company (called MPC), and an OC wire products company (called OC). Only one unit was formed by the manufacturing process (called DASH\(^5\)), as a supplier of half-finished goods to the rest of the three units. The number of employees in each unit was 17 for BPC, 17 for MPC, 14 for OC, and 20 for DASH (Figure 1). This reorganization was to encourage MPC Presidents to have a wider view by exposing them to the outside competitive markets through this re-organized structure.

Four of the experienced skilled workers were selected to take charge of the profit responsibility for each unit. They were chosen from the formal ranks of ‘Team Leader’ of the existing team organization in Manufacturing Group. The position ‘Team Leader’ is a formal title given to the head of each work group. In the MPC, they were called ‘President’ to make them feel like profit centre managers. Below President was ‘Branch Manager’; the position which supported the President. Their superiors, including the Manufacturing Group Leader and the head of the Manufacturing department were called ‘Shareholder.’ These names were intended an element of humour to the MPC system.

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\(^4\) The “OC” is a shortened form of “Outdoor Closslinked polyethylene.” OC cables are used as high-voltage power lines for electricity distribution.

\(^5\) “DASH” is an acronym of ‘drawing, annealing, stranded hardwire’. These are the names of the manufacturing processes which are included in this unit.
At first, the appointed Presidents felt bewildered at the role they had never been in, but they all accepted it because they regarded it as the part of their job as Team Leaders.

Ex-BPC President (in 2001): I wondered if I could do that. But, I could not say no to the offer.

BPC President (in 2001): I just had to take the role because there was no other person but me to take over the role, and I am doing this now.

However, the name of ‘President’ did not always sound comfortable to them. One President expressed uncomfortable feelings when he was called ‘President.’ Because they were not allowed to exercise decision making rights as usual profit centre manager could, he thought they were not empowered as the name implied.

OC President (in 2001): At first, the name President, I thought ‘What it meant by President?’ Even now, I am not comfortable with the name; President is only a name.

4.2.2 THE SCHOOL TRAINING SESSIONS FOR THE MPC SYSTEM

In January of 2000, the four Presidents were sent to the in-company school training sessions for the MPC instructed by Deguchi, where newly appointed Presidents/ Branch Managers from various related companies of SEI learned how to run their units. In the school, they had to attend sessions two full days at a time and in total ten times every two weeks. They attended the school Thursday and Friday, stayed overnight and returned the next day.

In the very beginning of the course, Deguchi asked students, ‘How much do you know you earn for one day for your firms?’ asking them whether or not their work deserve their pay. He even asked them that ‘Are you not salary thief?’ ‘If your firms go bankrupt, your salaries will not be paid at all and you will be unemployed!’ Then, the students began to realize the notion of ‘No corporate profit, no salary and no job security’.

At the first session in the school, students began by naming their units, because in the MPC system, each unit is regarded as a small firm in the town. They also made logos for their new ‘firms’. These processes are intended to help Presidents think of themselves as real profit centre managers. Then, the students study subjects, including accounting and research methods for continuous improvement. When the class proceeds and Presidents begin to have difficulties

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6 Tuition was 20,000 yen per person (approximately 130 pounds per person). The school was set up at the SEI factory in Tochigi prefecture. They went all the way from Miyagi to Tochigi to attend classes. This is about 260 kilometres and takes about three hours by train one way.
as regards understanding the subjects, Deguchi introduced to them his philosophy, ‘True happiness comes after true hardship’ and encouraged them to overcome their difficulties.

Congenial part of the school for the students was that they could chat and exchange opinions with students from other firms in between the classes. Establishing personal networks would widen their horizons and might be a help for their work in the future. On the evening of the first day of a two-day session, after class, all students who come from far away from the venue stay at the same regular hotel are invited to join in with Karaoke with Deguchi near their hotel. Most of the students come. In the relaxed mode with someone singing a song and enjoying themselves, they talk to each other and form friendly relations.

4.2.3 THE MPC PROFIT AND LOSS STATEMENT FORMULA

Once the system started in 2000, the monthly profit and loss statement was produced every month for each unit in the MPC using existing data from the company’s standard costing system (Figure 2). In this accounting system, the profit calculation formula is as follows:

\[
SALES = \text{standard direct material} + \text{standard conversion cost} + \text{markup}^7 \quad \ldots \quad (1)
\]

\[
\text{GROSS MARGIN} = \text{SALES} - \text{standard direct material cost}
= \text{standard conversion cost} + \text{markup} \quad \ldots \quad (2)
\]

\[
\text{PROFIT} = \text{GROSS MARGIN} - \text{actual conversion costs} - \text{EXPENSES}
= (\text{standard conversion cost} + \text{markup}) - \text{actual conversion cost} - \text{EXPENSES}
= (\text{standard conversion cost} - \text{actual conversion cost})
+ (\text{markup} - \text{EXPENSES}) \quad \ldots \quad (3)
\]

\[
\text{EXPENSES} = \text{general administrative expenses of the division.}
\]

\[
\text{NET PROFIT} = \text{PROFIT} - \text{DEFECT} + \text{MATERIAL SAVING} \quad \ldots \quad (4)
\]

Profits are nearly equal to favourable variances of conversion costs\(^8\) (2). Therefore, this formula could be a signal for Presidents to increase favourable variances of conversion cost. DEFECTS and MATERIAL SAVING are estimated based on the results of continuous

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\(^7\) markup = standard conversion cost × allocation rate. The markup is decided to be equal to the actual expenses, that is, “markup minus expenses” is deliberately set to be zero.

\(^8\) Because the markup is decided by multiplying the certain rate on standard conversion cost so that the calculated markup is to be equal to EXPENSES, that is markup minus EXPENSES equals zero.
improvement. DEFECT is calculated higher than the amount calculated by the usual costing system, by taking the whole product cost, not the repair cost for it. This calculation method is intended to let Presidents focus on product quality. MATERIAL SAVING is saved material costs by continuous improvement, because standard material cost is deducted from SALES to calculate PROFIT, saved amount of material is not shown in the PROFIT row.

This accounting system for the MPC profit and loss report was a stand alone system and not integrated to the existing financial accounting system. No efforts were made to connect each unit’s profit to the firm’s formal profit figures. Because, according to Deguchi, such attempts to link the accounting system in the MPC would inevitably make the calculation complicated; consequently, it would turn out to be a less useful tool for the workers in the MPC system.

4.2.4 CONTINUOUS IMPROVEMENT

The main method for each MPC unit to increase profit is to reduce cost by continuous improvement, as Presidents in the MPC units are allowed only limited decision making authority. In order to achieve progress continuous improvement, the MPC Presidents estimate the potential figures in monetary value by analyzing losses from their production. The losses are shown in monetary value and the amount is classified in the area of facility losses, material losses, and work hour losses in the MPC.

For example, the facility losses are analyzed, first, by estimating the maximum yield (maximum volume of manufactured products when operated non-stop, 24 hours a day, on all working days of the month). Then it is compared with the actual yield, with the difference recognized as a loss time. In the next step, the loss time is classified according to the reason why the facilities were stopped. The reasons for stopping facilities were, for example, no order for production (and the facilities stopped), waiting time for the start-up of the facilities, and trouble with the facilities. These loss times would be calculated into money values such as \(\text{loss time} \times \text{yield/hr} \times \text{product unit price}\).

Since this analysis can visualize the causes that have the largest impact on profit, Presidents can focus on the most effective way to achieve continuous improvement. This analysis is also applied to the loss of materials (Kaplan & Cooper, 1998) and the loss of working hours.
4.2.5 THE MONTHLY PERFORMANCE MEETING

When they did not attend classes in the school, the four Presidents were in a small room in the factory separated from other members, devoting their time to producing and analyzing each unit’s profit and loss report and trying to conceive plans to reduce costs by continuous improvement. Deguchi visited them once a month as an instructor to solve the problems they faced. He was contracted to the firm to implement the MPC system and instruct workers. He was respected as a mentor by the Presidents, since he was able to solve problems they faced using his experience as a skilled shop floor worker.

The monthly performance meeting was held when Deguchi visited the firm. Participants at the meeting included Presidents, Branch Managers, Deguchi, and the senior managers and some members from the units as observers, usually in total around 20 people in the meeting. Each President of the units took turns to make a presentation with power point slides about their profit and loss report and the results of continuous improvement. After each presentation, questions and comments were exchanged among them.

While the meeting proceeded in a relatively serious atmosphere, the focus of the monthly performance meeting was to share problems the Presidents faced and to sort out the problems, not to evaluate Presidents’ performance. Since the span of control for the Presidents was narrow, the senior managers needed to achieve them to conduct continuous improvement.

4.3 ESTABLISHMENT OF ACCOUNTABILITY IN HIERARCHICAL RELATIONS: 2000-2002

4.3.1 INFORMAL MEETINGS

About half a year had passed after the MPC system started, the Presidents and the senior managers (Manufacturing Group Leader, head of the department of General affairs and head of the department of Manufacturing) started to have meetings other than the regularly held monthly performance meeting, because continuous improvement had not been progressing as the senior managers expected.

Before the MPC system started, Team Leaders and Manufacturing Group Leader had two kinds of weekly meetings: a meeting about the production plan for the operation of facilities and a meeting concerning some problems occurring in each process unit. But, they stopped
these two meetings and started new meetings: a daily meeting dealing with day-to-day operational problems which was related to continuous improvement in the MPC system\textsuperscript{9} and a meeting held at two weeks after the monthly MPC performance meeting to check whether plans for continuous improvement were going as planned by the senior managers.

In these meetings, the Manufacturing Group Leader made it clear that they were expected to show substantial results through the MPC system. Since the introduction of the MPC system had caused expenses including tuition fees and other costs related to reorganization of the shop floor, the Manufacturing Group Leader and the other two senior managers felt a degree of pressure to show the effects of this system to justify their investment decision to the board of management and other Divisional head. The Manufacturing Group Leader, a direct supervisor of the Presidents, commented that he had explicitly told the Presidents what he expected of them:

Manufacturing Group Leader (in 2001): What we always say to the Presidents is that the MPC system is not like the former Kaizen Costing, in which responsibility is vague and no one would be blamed even if the results are not effective. I always make sure the line of responsibility is clear to the Presidents and that we must have actual effective results. I guess that they have completely different impressions of an MPC system compared with the former Kaizen Costing.

With these expectations from the Manufacturing Group Leader, the Presidents must have felt pressure to achieve outcomes. In fact, the head of the Manufacturing department commented that asking questions of Presidents could almost mean ‘bullying’ to them, to the extent that he recognized how much pressure they were under. They used to work until late at night when the day approached to give presentations every month at the monthly performance meetings.

4.3.2 RESPONSE OF PRESIDENTS

While facing bewilderment and unease in their new roles, Presidents in the interview in 2001 expressed the view that they got new insights after the introduction of the MPC system. Even though the profit and loss report in the MPC system is not integrated into the corporate financial figures, it nevertheless brought the President an awareness of the outside market.

\textsuperscript{9} It took about 40 minutes every morning with the Manufacturing Group Leader.
BPC President (in 2001): Before the implementation of the system, I was working for only one operating process, insulation. But now, the units are reorganized by grouping several processes into one according to its products. Then, I was surprised to know the size of sales of our products.

Interest in the profitability of the products was provoked in the OC President by the introduction of the MPC system.

OC President (in 2001): It is interesting just seeing the accounting numbers. Since the numbers change everyday, I became curious as to why. (…) I felt it was great, some products are more profitable than other products. (…) I didn’t know that. After I engaged in this system, I became aware of that.

However, profit and loss information could also become a threat to them when it showed deficits. The MPC President, whose performance had kept showing a deficit since the beginning of the system, commented that he thought his unit would go bankrupt when he first saw his unit’s monthly profit and loss report.

MPC President (in 2001): At first, I thought my unit would go bankrupt. Because our unit had been in the red for about six months in a row. Although the other three units were in the black, only my unit was in the red. So I was told off by the senior manager. But in September last year, it went into the black for the first time. (Author: Were you delighted at that time?) Yes, as it was the first time my unit had a profitable month (laugh).

The comparability and visibility of the MPC system made his unit’s continued deficits stand out, so even after his unit’s performance went into the black after a few months struggle, he was still worrying about the possibility of going into deficit again.

MPC President (in 2001): I can say it (profit) is the biggest concern for me. Even now, I sometimes worry about what I will say to my supervisor if it goes into the red again (laugh).

Although the intention of the introduction of the MPC system was not to evaluate Presidents by means of their profit results, it made it easier for the senior managers to evaluate the Presidents through the frequent interaction with the Presidents.

OC President (in 2001): Through the role of President, the performance of each President became visible, so that senior managers could more easily to evaluate us. Because of it, I was evaluated badly. This is not good for me. It would have be better for me if they hadn’t
started the MPC. My evaluation must be that I compare unfavourably to the other Presidents.

In the MPC system, all the employees in the MPC system were evaluated collectively on the performance they achieved and in principle they were not evaluated individually. However, at the time of bonus appraisal which is paid to all employees every six months in line with corporate profit, there is some space for individual evaluation among cohort workers according to capability. By capability, is not meant profit results in the MPC, but it is, rather, an inclusive performance including the Presidents’ attitude to the work and leadership in terms of involving other members in the MPC system and the results of continuous improvement. That is, the senior managers evaluated Presidents subjectively including their attitude, leadership, not by the profit results of each unit.

4.3.3 SUMMARY

In this period since the beginning of the system, the first four Presidents made their respective efforts to live up to the expectations of the senior managers. The fact that the first appointed Presidents were all in the formal position of Team Leaders might have prompted them to commit to their roles to a greater extent than ordinary workers. Furthermore, the fact that they were selected among other Team Leaders and worked in a room specially prepared for them might have boosted their commitment to their work. Against this backdrop, hierarchical accountability strengthened through the increased interaction among the Presidents, Deguchi and the senior managers.

However, their devotion to the role of President resulted in their distancing themselves from other members. Without cooperation with the members, the Presidents struggled to show progress in their plans for continuous improvement.

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10 All the employees in the MPC system received honourable recognition by the firm’s CEO several times as a whole group, for their cost reduction efforts by continuous improvement.

11 Since salaries for factory workers in the firm are mainly decided based on the years of service, however competent or otherwise, young employees cannot surpass the salaries of senior employees.

12 The President of BPC and the Branch manager of DASH in 2001 were exceptions; they were not yet “Team Leaders” at the time.
4.4 HORIZONTAL ACCOUNTABILITY: 2003-2009

4.4.1 RESISTANCE OF MEMBERS: AN EPISODE

On the part of other members, there seemed to be a slight irritation about the MPC tasks assigned by the Presidents. The gap of recognition toward the MPC system between Presidents and members was manifested in an episode the author observed at the monthly performance meeting in October of 2001.

At the MPC performance meeting on October 11th 2001, a young employee from one of the MPC units, gave a presentation instead of his President. After he had finished his explanation, he added that, ‘Even though my name is written as a person in charge, to tell the truth, I have not been involved in it’. Behind his remark was the fact that the President of the unit he belonged to had assigned a task to each member without consulting them about it. That young employee was unhappy because his name was in the list even though he had no idea about it.

After this episode, the senior managers began to take measures in order to bridge the gap between the present Presidents and the other members. They decided to give promising young employees the same opportunity, regardless of years of service, age, or rank in the factory.

4.4.2 THE FIRST APPOINTMENT OF NON-TITLED WORKERS AS PRESIDENT: IN 2003

In March 2003, three employees without specific titles were directed to enrol in the school; in April, the same three members were appointed to become Presidents. These ‘new’ Presidents did not always welcome the appointment as President, because they were not in the formal position of Team Leader; they felt they were not entitled to give instructions to the others. Notwithstanding their relatively weak status, they made efforts to involve other members in the MPC system. One new President of the MPC unit voluntarily started publishing ‘MPC news’ twice a month and posted it on the notice board. Having seen this ‘MPC news’, other Presidents began to mimic it and published their own version of ‘MPC news’ to their unit members.

Furthermore, the other newly appointed President of the unit, DASH, began to appeal to the members of his unit not to waste too much material. In his production process, operators carried out a trial to see if the setting of the facility was appropriate to produce a good product using some material. If this trial took a long time, the material used for the trial was wasted. This President walked around the work place checking the material waste bin. When he found too
long wasted cables, he made a point of warning the workers who produced the waste. As a result of his efforts, wasted cables reduced from 580 tons (finished cable: 1,515 tons) to 183 tons (finished cable: 1,626 tons), according to his presentation on (17 October 2003) at the school.

However, this first appointment of workers without titles as President in 2003 was in the transitional stage where only selected workers were appointed to the role and other members were still indifferent to it. In addition to this, the role of President put them under pressure. For example, the senior managers were sorry to see that one President stopped committing to the MPC in one year later when he was replaced.

4.4.3 CHANGE FOR PROACTIVE: IN 2004

When the new senior manager took over as Manufacturing Group Leader in 2004 and declared that all shop floor workers in the Manufacturing Group would be sent to the school, a system of accountability in the MPC system began to change. Although the Manufacturing Group Leader had been sceptical of the workability of the MPC system at the beginning, after he saw that the firstly appointed Presidents were working late at night, he felt 'moved.' Faced with the questions asked by the Presidents, but not answered by him\textsuperscript{13}, he began to feel himself accountable to the Presidents. Since his declaration, the meaning of the MPC system began to change to workers, that is, the MPC system became a everyone’s interests. The Manufacturing Group Leader in an interview in 2009 commented retrospectively that untitled Presidents had begun to be more proactive in the MPC system from around 2004. This comment implies the beginning of the diffusion of the system.

The partial reorganization of the structure of the MPC in 2004 represents the beginning of the proactive involvement of the un-titled workers. In 2004, two of the original units, MPC and BPC, were reorganized again from by product type to facility type by acting on the suggestions of the new Presidents (Figure 3). The products of these two units were produced using the same facilities and the same operators. Since these operators had a sense of belonging to the process group organized by facilities, the original structure by product decided in 2000 hampered team

\textsuperscript{13} The MPC system was taught largely based on the philosophy of Deguchi. Because this senior manager had never studied the MPC system in the school, he could not answer the questions asked by the Presidents.
working among them. Therefore, this reorganization in 2004 helped newly appointed Presidents to manage their work more easily.

While this reorganization seemed to constitute a return to the old structure before the introduction of the MPC system, the realization of the request of reorganization encouraged them to commit to the MPC system. In fact, the task of renaming these two units helped the new Presidents to gain a sense of belonging to the MPC system. The two new Presidents named their new units ‘Cherry Blossom’ and ‘VF’ after the deep consideration. Although the two units were reorganized by facility type, they were altogether regarded as a larger unit; becoming parts of the same unit, so they could still face outside customers, even after the reorganization.

Since the takeover of the Manufacturing Group Leader in 2004\textsuperscript{14}, hierarchical accountability in the MPC system began to be a lighter touch with a clear focus on continuous improvement. Around this time, the monthly performance meeting was reduced to be in every other month. In order to compensate for the reduction, the new Manufacturing Group Leader always walked around the shop floor and communicated with the Presidents. Every time he came on the shop floor, he talked to the Presidents and tried to help them to solve their problems. The then Presidents commented in the interview in 2005 that the Manufacturing Group Leader was friendly towards them. This friendly communication helped promote continuous improvement in the firm. One of the Presidents commented that there was a sense of him carrying out continuous improvement light-heartedly. Now, the senior manager became able to casually suggest plans for continuous improvement to the Presidents, and the Presidents came to accept it as part of their work as Presidents.

Eventually, the new Presidents began to ring up and ask questions of the Manufacturing Group Leader when they had problems about their tasks in the MPC. One of the Presidents commented in the interview in 2005 that before his appointment as President, he had never rung up the senior managers and that he had not wanted to talk to senior managers nor even see them. The contents of the communication were also changed from the one way communication of a ‘report’ to an interactive ‘talk’. About half of the plans for continuous improvement, according

\textsuperscript{14} From 2004, the structure of Shareholders was partly changed with the takeover of the Manufacturing Group Leader and the addition of two managers who used to be Presidents of the units of MPC and BPC. They were promoted to managerial positions to supervise the shop floor and the MPC system; they were positioned below the Manufacturing Group Leader.
to the President, began to be suggested by him, compared with none before his being appointed as President.

Clear focus of the new Manufacturing Group Leader on continuous improvement made it easy for Presidents to take their role in the MPC system. In an interview in 2005, the Manufacturing Group Leader clearly remarked that he had no intention of expecting the Presidents to earn profit. The main reason for not focusing on profit was interdependence of the activities with other functional departments. Reflecting on the expectations of the senior manager, Presidents focused on the completion of the plans of continuous improvement, not on increasing profits.

Meanwhile, the President, in the interview in 2005, felt accountable for the education of young members in his unit. He commented that he was motivated after the appointment of President because he was the only person who knew the MPC system sufficiently well to explain it to other members. This comment implies that he felt accountable to other members by understanding of the MPC system.

While the Presidents felt that young members were supportive to them, older workers were still not so cooperative to them, partly because they did not regard the Presidents as legitimate people to give instructions to them because they were not Team Leaders. Otherwise, they were not interested in changing their usual work styles as shop floor workers because they were approaching their retirement age.

4.4.4 SPREAD OF ACCOUNTABILITY: IN 2009

The senior managers of the firm kept sending workers to study the MPC system to the new school15. The number of workers who graduated from the school and who experienced being in the role of President amounted to 30 and 19 respectively as of 2009 (Table 1). In line with this, the increase of cooperative relations with their members was developed.

One example is an incumbent Branch Manager. He was the same worker who had complained in the monthly performance meeting in 2001 about the task imposed by the

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15 After the retirement from SEI, Deguchi established of his own firm to run the school to educate workers for the MPC system in the December of 2005. When most of the other participant firms who used to send their workers to his school stopped doing it for various reasons, the senior managers of Kitanihon invited him to open his school in the firm. In the February of 2008, the venue of the school moved into the property of the firm. The firm kept sending their shop floor workers to the school annually.
President of his unit. He commented in an interview in 2009 after he studied in the school and understood the system that he no longer felt irritated by his present task as Branch Manager. Furthermore, he commented about the change of his way of thinking if he caused defects;

President (in 2009): Before I became President, when I had caused defects, I would have just felt bad about it, whereas now that I had graduated from the school, I would think ‘How serious would the defects be in relation to the profit of the firm? Could I be paid a bonus this year?’ So, he gained an insight to link costs he caused with corporate profit, subsequently his bonus. In fact, he was highly regarded as one of the best workers on the shop floor by the senior managers through his behaviour as Branch Manager and the performance of his unit.

Ten years of the operation of the MPC system helped the firm to bring up new leaders from the shop floor. Now workers in the position of President/ Branch Manager in the MPC were synchronizing to their relatively higher position in the hierarchy of the shop floor, which meant they were no longer regarded as too young to give instructions to other members.

4.4.5 HORIZONTAL ACCOUNTABILITY IN FUNCTIONAL INTERACTION

After the introduction of the MPC system, relations between different functions began to change to becoming more interactive through the influence of the MPC system. The Maintenance department started the MPC system in the August of 2001, although they were not so interested in the MPC system.

After that, the Presidents of the Manufacturing Group began to ask the staff of Maintenance department how the modifications were progressing, because they were more concerned about the completion of the plans of continuous improvement for their presentation in the performance meeting. The more frequently the staffs of the Maintenance department were asked, the sooner they tried to complete the tasks of the facility modifications. The Head of the Maintenance department commented that before the introduction of the MPC system, they had not received enquiries about completion of facility modification by the Manufacturing Group, consequently they had not felt the need to complete the tasks quickly. Now, the rate of completion of repair and modification tasks by the Maintenance department improved as the Head of Maintenance department commented in an interview in 2005.

5. DISCUSSION
This paper investigated a new management control practice, the MPC system, introduced in a medium Japanese electric cables manufacturing firm and examined the system of accountability created by implementation of the system. In this case study, two questions were focused on: the way a system of accountability is created and the usage of the hierarchical forms of accountability and socializing forms of accountability working in the MPC system.

5.1 HOW THE ACCOUNTABILITY SYSTEM CHANGED

Previous accountability literature demonstrates that introduction of financial accountability changes the behaviour of the people who are held accountable (Ogden, 1995; Dent, 1991; Llewellyn, 1998; Ezzamel et al., 2007). Through the case of the MPC system, it emerged it can cause changes in the mindset and behaviours of the Presidents despite the fact that profit accountability for Presidents is pseudo. Crucial environmental elements are set up so that Presidents can take the profit accountability as real (Ahrens, 1996). Consequently, Presidents change their behaviour in order to live up to the expectation of the others.

One of the environmental elements which makes the Presidents feel that their role is real in the MPC system is training in the school. They learned how they should think and answer in as President. Deguchi questioned the Presidents as to whether their work deserved their pay and asked whether they were contributing to the corporate profit. Face with this question repeatedly, the Presidents began to share the notion of ‘No corporate profit, no salary and no job security.’ As the Branch Manager commented in the interview in 2009, he would think ‘Could I be paid a bonus this year?’, when he caused any defects in his unit. They considered the MPC as real, in that sense, their commitment to the role of President is rational behaviour.

Secondly, the formal status ascribed to the first four Presidents added to the sense of reality in terms of accountability in the MPC system. The fact that the first four Presidents were given in the formal title of Team Leader made the hierarchical relations between them and their senior managers more serious and real in the pseudo system of MPC system than to untitled Presidents. The communication mode between them and the senior managers was more like a ‘report’ than a ‘talk.’

Although this hierarchical relation had been limited to the senior managers and the first four Presidents and other shop floor workers had relatively remained indifferent to the MPC
system, the start of rotational appointment of the President helped the spread of the system of accountability among the other workers in the shop floor. Faced with accountability from the senior managers in meetings, the untitled Presidents also began to feel the system of accountability in the MPC system was real.

It is interesting to point out that the start of rotational appointment and the spread of the system of accountability of the MPC system were encouraged by a particular senior manager’s reaction to of being held accountable by the Presidents. This experience made him realized the system of accountability in the MPC system should be two-way, ‘the giving and demanding of reasons for conducts’ (Roberts & Scapens, 1985).

After the rotational appointment of President started in 2004, the hierarchical relation was modified into a more relaxed and friendly one. This resulted in more involvement of untitled Presidents. The communication in a hierarchical relation became more reciprocal; it became more ‘talk’ than ‘report.’ This resulted in inviting more proactive attitudes from untitled Presidents towards their role in the MPC system. The change manifested in their behaviour included ringing the senior manager to ask questions about the MPC system and suggesting plans for continuous improvement from their sides. In the MPC system of this firm, the experiences of the Presidents of being asked and giving explanations in the meetings largely helped them to feel that the MPC system was real to them.

5.2 SIMULTANEOUS USE OF THE TWO FORMS OF ACCOUNTABILITY IN THE MPC SYSTEM

Roberts (1991) makes a distinction between two types of accountability: hierarchical forms of accountability and socializing forms of accountability, and points out the importance of recognition of the interdependence of the two forms of accountability in terms of attaining corporate objectives; Ignorance of this relation could provide damaging effects on firms. As regards to this interdependence, Frow et al. (2005) demonstrated a case study that the two forms of accountabilities coexisted in one management control system in a concerted way to bring positive effects to the firm. Concerning the two forms of accountabilities, the MPC system showed that a traditional profit centre system, which originally tended to be hierarchical forms
of accountability, could be used in a subtle way as the socializing forms of accountability with its trait of pseudo profit centre.

In the hierarchical relation, the MPC system was able to avoid the damaging effects which could have been caused by hierarchical forms of accountability. Through Deguchi’s mediation, the presentations in the meeting allowed information sharing among the Presidents and senior managers without any distortion of communication. Too severe questions asked from senior managers were mediated by Deguchi. Alternatively, if Deguchi thought that Presidents lacked motivation, he sometimes admonished them. By playing this role, he tried to maintain honest communication between the Presidents and the senior managers. Otherwise, their communication might have become distorted through the existing power relation.

In general, Presidents came to understand their interdependency with other units through the meetings. This was the case with the senior managers as well. If trans-functional actions or measures which needed more or less capital investment were recognized as being necessary, senior managers supported these actions and the measures being carried out, because such decisions were beyond the authority of the Presidents.

Meanwhile, some individualizing effects remained in the MPC system with heightened visibility and comparability in the meetings. Damaging effects were avoided by the long term and subjective evaluation of the President. Since the presentations by President/Branch Managers in the meetings made clear the difference of capability among them, this made it easier for senior managers to evaluate them with confidence than it had hitherto been. The difference among the Presidents was reflected in the appraisal of the bonus and promotion relatively on a long term basis. The promotion of the two ex Presidents after five years of their first appointment indicates that their efforts were rewarded after their long-term perseverance.

On the other hand, the socializing forms of accountability were established with the start of the rotational appointment of President. Once it was announced to all the shop floor workers that they would be sent to the school in turn and that they might be appointed President, the MPC system became in everyone’s interest; all employees now had a reason to familiarise themselves with the MPC system. This notion encouraged other members to be helpful to the incumbent Presidents. That is, the MPC system began to be real to other workers as well.
In addition, after ten years of operating the MPC system, the accumulated number of employees who experienced being in the role of President or who graduated the school the cooperation among workers. Because ex-Presidents knew the difficulties of the task, they were sympathetic to the incumbent President and helpful to them. Hence, rotational appointment of the role of President helped to disseminate the understanding of the MPC system among the workers and promoted horizontal accountability among them.

This socializing forms of accountability also progressed between different functions as well as within the unit. Exposed to the questions put by the Presidents of the Manufacturing Group, the staff of the Maintenance department began to feel answerable to their requests as regards facility modification.

In the MPC system, ‘the conference technique’ (Roberts, 1990) played an important role in alleviating harshness by the pressure on the Presidents. However, the spread of the system of accountability by the MPC system was enabled after the start of the rotational appointment of Presidents, which encouraged socialising forms of accountability, thus making the MPC system more effective.

Other than the accountability issues, the MPC system, with its pseudo profit centre, raised awareness in the Presidents to the outside market and customers by the reorganizations in 2000 and in 2004 in the Manufacturing Group accompanied by the profit and loss feedback (Merchant & Van der Stede, 2003).

On the whole, the concept of the MPC system is different from that of a usual profit centre system; the focus of the MPC system is more on the process, not on the short term results. Treating shop floor workers as profit centre managers turned out to be more effective in terms of making them understand the interdependencies among them and relations between their work and corporate profit and making them commit to continuous improvement rather than just treating them as shop floor workers engaged in operational work.

Besides, the pseudo trait of the MPC system allowed the firm to experiment with some new practices. Appointing young untitled workers as President beyond the existing shop floor hierarchy trained them as future leaders of the shop floor. In addition, since the MPC gave the workers some sense of a game, it could avoid undesirable gaming by manipulating numbers.
Because they were not evaluated on their own profit results, they were able to direct their attention to the corporate profit not their own unit profit.

This paper contributed to papers on accountability and organizational change by describing the creation of a system of accountability by the implementation of the MPC system on the shop floor of a Japanese electric cable manufacturing firm. In addition, this paper extended the scope of previous papers by examining in detail the usage of the hierarchical forms of accountability and the socializing forms of accountability at the same time. For practitioners, this research showed that simply treating cost centres as profit centres and providing profit information feedback are insufficient to develop an entrepreneurial spirit among the employees.

This study also has certain limitations. Since it is a single case study, it is unclear at present whether it could be generalized to other organizations. Another limitation is that this case study could be influenced by case specific influence. In that sense, this case should be read with that caution in mind. In future research, statistical research would help verify the results of this study. Even with these limitations, this study contributes to previous studies by shedding light on accountability by management control systems in the area of operations management.

(9,882)
Appendix A. Research records

1. Interview to Deguchi

An interview was conducted in May, 2000. The duration of the interview was approximately 5 hours.

2. The MPC school observations:

The school visits were eight in total during 2000 to 2006; May10-11, 2000; October 17, 2003; February 5, April 22-24 2004; February 3-4, April 22, October 20-22, 2005; November 21-22, 2006; March 5, 2009.

3. Interviews to Kitanihon

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Appendix B. Questionnaire survey in Kitanihon, 2001

(Respondents: The Presidents /Branch Managers of the MPC at Kitanihon Electric Cables, Ltd.; Date: December 2001)
**Question 1.** Please answer the following questions about the system’s accounting information:

I. In 2000, when the system was newly introduced:

   1. When did you first find out about your unit’s performance in terms of profit?
   2. Through what means did you find out the above information?
   3. What was your first impression of the profit and loss information? Please choose from the options that which most closely reflects your impression.

   - **Options**
     
     - (1) I thought our unit was competent.
     - (2) The information helped us work autonomously.
     - (3) I was surprised.
     - (4) I was able to understand my position and role in the company.
     - (5) Other (  )

II. In October 2001:

   1. When did you find out about the latest profit information of your unit?
   2. Through what means did you find out the above information?
   3. At present, what is your impression regarding the profit and loss information? Please choose from the options given below which most closely reflects your impression.
   4. At which point did you feel that you should work harder after seeing the profit results of your unit?
   5. Why did you feel the above? Please choose from the options given below which most closely reflects your feelings accurately.

   - **Options**
     
     - (1) I felt this way naturally on seeing the profit results.
     - (2) I felt this way because good results would lead to my promotion in the future.
     - (3) I felt this way because my supervisor would evaluate me on the basis of the results.
     - (4) I felt this way because my supervisor would hold me accountable for the dismal performance.
     - (5) I felt this way because Deguchi encouraged me.
(6) I felt this way because Deguchi would hold me accountable for the dismal performance.

(7) Others ( )

Question 2. Please answer the following questions with regard to the accounting responsibility.

1. After the system was introduced, did your method of working change? Please choose from the options given below. If you chose (1), please explain how this changed.
   
   【Options】 (1) yes (2) no (3) I don’t know

2. Do you think your unit could increase profit? Please choose from the options given below and comment on your choice.
   
   【Options】 (1) I think so (2) I don’t think so (3) I don’t know

3. After the introduction of this system, which ensures accountability for profit, did the frequency of communicating with other people increase? Please choose from the options given below. If you chose (1), please proceed to the next two questions.
   
   【Options】 (1) increased (2) decreased (3) unchanged

3-1. Did the frequency of communicating with your supervisors increase? Please choose from the options given below. If you chose (1), please describe the contents of your communication.
   
   【Options】 (1) increased (2) decreased (3) unchanged

3-2. Did the frequency of communicating with your colleagues within and outside your unit increase? Please choose from the options given below. If you chose (1), please describe the contents of your communication.
   
   【Options】 (1) increased (2) decreased (3) unchanged

4. Did your attitude towards making profit change after the introduction of the system? Please choose from the options given below and explain the reason.
   
   【Options】 (1) I was motivated (2) I lost my motivation (3) There was no change in my attitude

5. How do you coordinate when your unit faces a conflict of interest with other units? Please explain with some examples.
Appendix C. Organization chart of Kitanihon

Fig. Organization chart of Kitanihon Electric Cable

Fig. Organization chart of Electric Cable Division
Team organization of Manufacturing Group in Electric Cable division before the MPC implementation

DASH company, OC company, MPC company, BPC company are the name of each MPC unit.

Arrows mean the production flow.

numbers in parenthesis are the number of employees in units

Fig.1 MPC organization chart of a Manufacturing Group in an Electric Cable division since 2000-2004
Fig. 3 MPC organization chart after reorganization since 2004 to the present
Fig. 2 Profit and loss report format for units of the MPC system

Table 1
The inner-school enrolment

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