Application Examples of Transaction Cost Measurement and Analysis to Management

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Numerous findings and new perspectives can be identified by measuring transaction costs, achieving innovative management.

8.1 Transaction Cost Management as a New Management Methodology

Activities that cannot be measured cannot be managed.

8.1.1 Introduction of Quantitative Analysis into Organizational Value-Added Activities

Numerous opportunities can be extracted for improvement of efficiency and effectiveness with a new perspective: the transaction cost.

Activities that cannot be measured cannot be managed. This common sense has not been applied to the activities of employees in companies despite the fact that this is a fundamental management issue. In reality, this information is not present in corporate financial statements, and in most companies this is neither measured nor correctly grasped. In attendance management, only the work start time and end time are taken into account, and the rest is basically a black box. Companies that offer legal, accounting, consulting, and engineering services bill their customers on an hourly basis. Therefore, most of these companies maintain activity log details. These data are based on the classification for customer billing; they are not used for activity analysis, even though the data are entered with effort. To begin with, the data accuracy per se is too low to support analysis.

Conventionally, the whole cost is tracked focusing on production costs. However, the problem in considering the activities of employees as only production related is that organizational activities such as communication and interactions

cannot be grasped. Therefore, the efficiency and effectiveness of organizational activities cannot be measured or analyzed.

In many cases, an activity monitoring is emotionally rejected with the reason that this leads to scrutiny of individual expertise, privacy, creativity, originality, and autonomy. However, these are not scrutinized during measurement and analysis of transactions. The interactions between individuals are never related to individual expertise or privacy. This is about how an organization works, which has to be explicitly clarified to establish consensus, standardized, and shared. The black box obstructs the clarification, standardization, and sharing. Therefore, the room for improvement is enormous; the management methodology to track and analyze becomes crucial today when transaction continues to increase in volume and significance.

Enormous opportunities can be identified to improve not only efficiency but also effectiveness by perceiving inside the box with a new perspective: the transaction cost.

8.1.2   Standardized and Systematic Approach Is Possible

Transaction can be standardized across industries, business types, and functions.

Transaction has a common pattern across industries, business types, and functions, as described previously. Therefore, a standardized and systematic approach is possible with the measurement and analysis. This standardized approach is considered to be extremely important because the absolute parameters are not available for evaluating effectiveness and the relative comparisons are indispensable for making managerial decisions about reducing transaction costs. The useful methodology possible is to explore improvements by benchmarking against other companies, other departments, other groups, other individuals, and one's own past.

Even if the standardization and systematic approach are theoretically possible, there are many practical issues involved in dealing with all business activities as transaction, such as:
– Classifying the transactions and the participating entities in the case of information sharing through databases
– Allocating *production costs* and *transaction costs* to activities of writing e-mails
– Dealing with all information exchanges that take place during meetings which correspond to transaction
– Describing the transactions that occur when corporate assets such as IT systems are developed (these are formally delivered to company owners)
– Dealing with the transactions in which corporate assets are used

It is necessary to define all of these by a simple and uniform system. Rules for the classification are required to be established for transaction costs, which is identical to the vast and detailed rules provided for classifying costs of physical goods in the accounting regulations. Analysis with the accuracy level of accounting is possible if detailed and thorough rules are established. In the existing state where transaction is never analyzed, however, it can be argued that only very simple rules can contribute

significantly. The methodology just needs to become more sophisticated once the outcomes from the analysis increase.

Several points are to be noted regarding the systematization of a methodology that realizes transaction analysis universally applicable to any kind of activity performed in all industries, all business types, all functions, and all individuals, both between and inside companies. These include:

– Avoiding generation of omission and duplication: Obviously, the actual cost has to be dealt with exhaustively without any omission or duplication.
– Simplicity: The rules have to be as simple as possible such that the new concepts can be easily grasped by everyone.
– Generality: The rules must be applicable to any activity in any kind of situation. Therefore, the generality that captures the essence of the transaction is required.
– Standardization: This is an expression that comprises generality and utilization of the generality effectively in practice. In other words, the standardized definitions and processes for measurements, analyses, and evaluations and the mutual comparison of activities are required.

While the research group of the author is at the stage where such required refinements have been undertaken, the framework will be briefly described in the next section. However, to repeat, such highly detailed discussions are not required at present because numerous improvement items have been identified easily with very simple measurement, analysis, and evaluation. The effectiveness has been confirmed in various domains. A part of this will be described later in this chapter.

8.2   Transaction Cost Configuration Elements

> Transaction cost measurement eventually corresponds to the measurement of activity time.

The current accounting deals with physical objects accurately, but transaction activities are grasped together as a set as *sales and general administrative expenses* or a part of *cost of goods manufactured*. Data required for the analysis and evaluation of these activities are practically not collected. Transaction corresponds to the activities between employees and the quantities are expressed as the form of a transaction cost.

A transaction cost is the cost incurred for exchanging or trading activities and can be decomposed into the following elements:

(1) Fixed costs of infrastructure for executing transaction
    Communication costs such as Internet and telephone and rental costs of meeting rooms and offices
(2) Variable costs incurred for each transaction
    Media used for each transaction (e.g., paper, electronic media), general consumables (e.g., stationeries), and traveling cost
(3) Transport costs

Expenses incurred for the delivery of exchanged goods (this can be also subdivided into fixed cost and variable cost)

(4) Employment costs for the activity time of transaction

Employment costs per employee (welfare costs are included) incurred for the time spent in transaction activities

Of these, (1) and (2) are usually recorded not at each transaction but as a lump sum. Even if these costs are monitored accurately so as to identify which transaction they are associated with, the value of the information compared to the cost of the measurement and allocation is quite small. Consumables and communication expenses are more or less the same. It is sufficient to allocate the costs using the general allocation methodology of the existing accounting. It also provides enough data and the methodology for the transport cost of (3).

The most difficult and significant of these elements is the activity time of (4). If this is grasped, it will be possible not only to analyze, evaluate, and improve the activities, but to obtain the basic data for the allocation of costs (1) and (2) mentioned above. Although sufficient accuracy can be achieved with the allocations just using head count or revenue, the allocation of the transaction activity time of (4) is preferable for reflecting the reality, which is the primary focus of this book.

The employment cost for each transaction of (4) can be calculated with employment cost per hour multiplied by the activity time, while employment costs per hour can be easily calculated from the total of salaries and welfare costs and the total work time.

If all the related costs are managed in this manner, the transaction cost issue eventually adds up to activity time measurement. The remaining issue is the simple allocation of cost, the skills of which are already well developed in managerial accounting. Contrarily, activity time has not at all been measured or, if it is measured, the accuracy of the data is extremely low.

It may be understood that activity time can be measured even in the present situation, but it has not been measured in practice because it is difficult due to the following two reasons:

– Employees whose activity time is measured still have to enter the data by themselves with existing technologies.
– Measurement (data entry) has to comply with a standardized classification, which is costly.

As to the first reason, although the trend of tracking operational activities has become stronger, even though this is being recorded as business performance, the data accuracy is far from the reality. Data entered by consultants, accounting firms, or engineering companies are not accurate since the objective is just billing. However, in the future, there is no doubt that measuring the number of transaction and the activity time will become easier with the spread of IT infrastructure and technological innovations. Already, various activity data are stored in different forms in databases, and most of this information can be used as transaction data. Supplementing data along with information on time has become simpler. For now,

however, data entry by humans is still required; the resistance to the data-entry task is very high at the workplaces.

For the standardized classification criteria, the second reason, there is no point in measuring blindly, and it is necessary to input according to an accurate as well as unified classification. Conventionally, work classification criteria are prepared by each department of each company, and there is no standardization to speak of. Mutual comparison is impossible if the classification criteria is not standardized. Standardization will provide great values to companies and should be achieved throughout the entire society if possible.

In this chapter, how to solve these problems and how to take advantage of transaction cost data will be discussed.
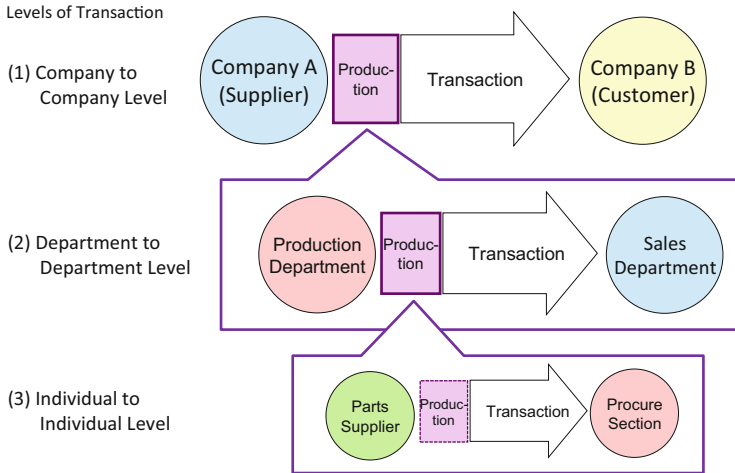
8.3   Transactions Have a Multilevel Structure

Transaction costs will be different depending upon the level of the entities involved.

For analyzing transaction costs in practice, the first and most important cutoff is to separate the analysis by taking into consideration the level in a multilevel structure of transaction. With this perspective, it becomes organized and easy to understand.

Consider the case of a transaction in which Company B, a customer company (or a consumer), ordered a product and Company A, a supplier company, accepted it as shown in Fig. 8.1. The sales department accepts the order from the customer and transmits this order information to the production department within the supplier company. The production instructions will be transmitted through each process within the production department. The procurement section will place orders for required components to subcontractors. Even within the sales department, an order will be placed to some supplier when the sales promotional materials become out of stock. It is important to note that there are many levels of transaction; the transaction costs will be completely different depending on the level of the transaction considered. In order to organize the analysis, it is necessary to consider transaction based on a three-level classification: *transaction between companies (organizations)*, *transaction between departments*, and *transaction between individuals*. Perception of a transaction (as well as transaction costs) should be distinguished based on the setting of the hierarchy level (entities) of the transaction. The three levels are satisfactory for practical effective measurement.

(1) Company-to-company level: transaction and transaction costs between companies (organizations)

The transaction entities are companies in this level; the transaction is executed between companies. This transaction is positioned on the highest level. If the transaction of an order placed by Company B (customer) to Company A (supplier) is considered, Company A produces the product (or information or service) and delivers it to Company B (the arrow in Fig. 8.1 shows the direction in which the product is delivered). In this case,

Fig. 8.1 Multilevel structure of a transaction

the business activities that are classified as *transaction* include sales activities, negotiation of transaction conditions such as specifications, handling of contracts, ordering, delivery of goods, installation, monitoring, and problem solving; the remaining activities after excluding these activities are classified as *production*. The activities involved in the transaction on this company-to-company level incur *transaction costs on the company-to-company level*.

It should be noted that the transaction (communication) within Company A (supplier) for manufacturing the product is classified as *production*. In other words, all the *transaction costs* incurred between the departments and the individuals within Company A are included in *the company-to-company level production costs*. Incidentally, Company B, which is the customer, incurs transaction costs but no production costs, of course. Analysis focusing on the company-to-company level is for the purpose of comparing and evaluating the efficiency and effectiveness of transaction between companies.

As an illustrative example in manufacturing to distinguish production costs and transaction costs at the company-to-company level, the dividing point is located in the design activity. The design activities associated with the company's own specifications are considered to be *production*, and the customized design activities that are executed to meet the requirements of a particular customer are *transaction*. In addition, creation of drawings that are used for confirmation with the customer is included in *transaction*, while preparation of drawings required for manufacturing is included in *production*. According to this definition, market research activity (including information gathering from customers) for development of their own specifications is an activity that should be classified as *production*.

Because the costs of overhead departments (e.g., personnel and general affairs) are associated with both production and transaction, those are proportionally allocated to them.

(2) Department-to-department level: transaction and transaction costs between departments

The *production* on the company-to-company level discussed above can be decomposed into *production* and *transaction* between departments within Company A (supplier). In other words, when Company A delivers a product to Company B (customer), the order received from Company B becomes a transaction wherein the sales department places the order to the production department and the production department delivers the product to the sales department within Company A. In addition to the information transmission cost regarding product specifications and delivery schedule, the costs of adjustment and negotiation between the departments are incurred. When the product is consigned from the production department to the sales department, exchanges of various documents also occur. The *production costs at the department-to-department level* will be incurred only at the production department that manufactures the product; almost the entire cost at the production department is production costs except interaction with the sales department, which is considered *transaction costs*. The production costs also include transaction (communication) within the production department, and these communications are recognized as *transaction* at the next lower level (among individuals). Analysis focusing on the department-to-department level is for the purpose of comparing and evaluating the efficiency and effectiveness between department[1] within a company or across companies.

(3) Individual-to-individual level: transaction and transaction costs between individuals

In the same manner as above, the *production* in the production department on the department-to-department level can be subdivided into *production* and *transaction* among teams or individuals. In other words, it is recognized and classified as the *transaction* between the individual engaged in *production* and the individual who ordered the *production*. For example, an order to supply parts in one of the production processes is transmitted to an employee in charge of the *production* or controlling parts inventory or a parts supplier, which forms another *transaction*. This structure can be also applied to all other departments to recognize activities between groups and individuals as transaction. Analysis focusing on the individual-to-individual level is for the purpose of comparing

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[1] This transaction within Company A could be recognized as two separate transactions: the first transaction between the sales department and the top management of the company and the second transaction between the top management and the production department. This is because the outcomes from the departments and the evaluations (i.e., rewards) by the top management are exchanged as transaction. However, it is described as one transaction between the departments of sales and production in order to simplify the explanation and analyses. Our practical analysis confirms that there will be no issues even if the analyses are carried out in this simplified form.

and evaluating the efficiency and effectiveness of intra-departmental transaction (i.e., between groups and between individuals).

It is also possible to analyze the transactions between teams in the production department at the same time as the analysis of the transactions between individuals. As there are usually data available to identify which team individuals belong to, transaction costs between teams can be determined by simply replacing the individual with the appropriate team (a summation of individuals), as long as the transactions between individuals are tracked. Likewise, this summation approach is applicable to transaction cost measurement on the department-to-department level and the company-to-company level, as there are also data to identify which department and company individuals belong to. In short, it is possible to grasp transaction costs on any level above just by the measurement of activity time of individuals.

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Thus, a transaction is subdivided or aggregated in the multilevel and nested structure. In the case above, a manufacturing operation has been used as an example since manufacturing is a convenient activity for understanding and allows the structure in which the elements of a transaction are delegated successively to be shown. The nested structure appears not only in production departments but everywhere. Even production of sales promotion materials in sales departments has a multilevel structure, such as a transaction between a manager and an assistant manager and between the assistant manager and employees or suppliers. Designing and printing (production) of sales promotion materials are also delegated in the same manner as the parts of *production in the company-to-company level*. It is significant to note that if the hierarchical level of a transaction as an object of an analysis is not explicitly identified, the constituent activities cannot be determined either as production or transaction. As a result, the value of the production costs and transaction costs will become totally different, the consequence of which is to make an apples-to-apples comparison impossible. The level of an analysis should therefore be set clearly as far as transaction cost measurement and analysis are concerned.

Transactions have been linked one to the next across the levels, and the aggregation constructs corporate activities and social activities. This complex chain structure with enormous transactions is the main reason that makes comprehension of transaction and a transaction cost very difficult. Therefore, this biggest barrier should be overcome to comprehend *transaction*.

The points that may cause problems when analyzing transaction costs are summarized below:

(1) Transactions have a multilevel and nested structure. Production and transaction as well as their costs vary depending on the level considered. In other words, an activity that is classified as a *production cost* on a higher level may be classified

as a *transaction cost* on a lower level. During analysis, the analysis level must be determined clearly.

(2) Not only *production* described above but also any element of transaction *on the company-to-company level* can be subdivided and classified at the department-to-department level, such as sales brochures in sales and transportation in logistics. However, if the subdivided activities are outsourced to a supplier company, they then turn out to be company-to-company transaction. Thus, the outsourcing transaction could be classified at both the department-to-department and the company-to-company level, but comparison conditions can be better unified by classifying them at the company-to-company level when comparison analyses are performed.

(3) There is usually information about which individuals belong to which teams, departments, and companies available. Therefore, if the transactions on the individual-to-individual level are tracked, the transactions on the department-to-department level as well as the transactions on the company-to-company level can be also obtained by simple summation.

The multilevel structure of transaction is the most basic along with the transaction elements for classifying transaction. When comparison analyses are performed, the transactions in the same conditions, namely, the levels of company to company, department to department, and individual to individual, as well as industries and business types, should be selected in the first place. That enables apples-to-apples comparisons. However, as valuable implications can be obtained through contrasts with different practices, transactions in different conditions should be compared in later analyses.

The multilayers of transaction appear seemingly complex and complicated at first glance, but it is simple enough as one becomes skilled at the actual analytical work. Recognizing the position of transactions on the layers clearly is the only significant issue.

8.4 Transaction Cost Analysis and Applications

Application domains that can leverage transaction cost analysis for management are enormous.

8.4.1 Basic Concept of Analysis and Applications

First focus will be on the elements that generate the maximum transaction costs.

Considering organization, strategy, and operation as an aggregation of transactions, there are enormous application domains to which the methodology of managing transactions and transaction costs can be applied.

Any activity can be classified into the elements of production or transactions. The employees and departments are separated according to the elements in most

cases since each transaction element has a different type of task. For example, responsibilities can be divided into tasks such as exploring the first access with business contacts, making appointments, preparing and providing routine presentations, preparing and providing customized presentations, determining specifications, negotiating prices and delivery schedules, accepting and processing orders, executing production, assisting acceptance inspections, providing implementation support, handling of problems, and so forth. Each task can be executed efficiently and effectively by division since these operations are fundamentally different. Even when IT is introduced, the IT functions are usually divided into these transaction elements.

If efficiency is disregarded, and more time and cost are expended for each transaction element, better outcomes will be obtained. Since time and cost are limited, of course, the management issue associated with transaction costs is the problem of allocating resources such as human resources, time, and cost optimally among the transaction elements. The costs of physical resources are managed at a relatively much higher accuracy, while activities (transaction in particular) and cost of activities are handled intuitively and there are almost no systematic approaches to analyze. This book has been proposing a management methodology focusing on this systematic approach.

In other words, the time allocated for each transaction element should be measured and checked as to where the maximum cost is incurred. The activities that can be reduced without deteriorating the effectiveness and the activities required to ensure effectiveness are measured, analyzed, and verified to check if such activities are being performed properly and modified if necessary. Normally, the examination to check the possibility of reducing activities without compromising effectiveness is much more significant; transactional activity items (between departments, between groups, and between individuals) that are repeated without contributing value should be extracted. The analysis is in the order starting with transaction elements to which time is expended the most. The possibilities of standardizing, converting into routine work, and introducing IT have to be validated. For instance, in the case of presentation, each salesperson need not individually prepare all the portions of the presentation that are common, such as company introduction and standard product explanation. The efficiency will increase greatly if a dedicated team prepares the materials and provides related training on the critical presentation points for other teams, and the surplus time generated as result of this rearrangement can be used to increase the value added to their customers. Even in the complicated proposals by top-management consulting firms, many common parts can be extracted easily without reducing their effectiveness.

On the other hand, there are many cases where indispensable transaction elements are neglected and all other transaction costs associated with this transaction element are wasted. For example, innumerable cases where activities that have to be executed but are not can be easily identified in companies, such as requesting and comparing estimates from two or more suppliers, confirming agreed terms and assigning the persons responsible in a meeting, confirming explicitly between

managers and subordinates on each action, evaluating and improving activity results, and improving all activities about which customers complained. The effectiveness of the related transactions will certainly be decreased by such negligence.

Actually, when activities were measured and visualized in our research, numerous improvement points have been easily identified even without decomposing to the transaction elements. A part of our current research outcomes will be introduced in the following section.

8.4.2   Example of Business Visualization Based on Transaction Costs

The value obtained by visualizing business activities results is huge.

Given below are actual examples[2] for which our research group performed visualization and extracted the issues and improvement measures.

(1) Case 1: Sales productivity improvement

Figure 8.2 is one of our analysis results[3] of the sales activities (by time measurement) and the performance of each salesperson of Company C. Gross profit, a KPI of Company C, was taken along the vertical axis, and the time expended for the sales activities (as one of the transaction elements) was taken along the horizontal axis and plotted for each customer.

When this graph was illustrated, analyzed, and discussed by all concerned employees, attentions were first drawn to the point that the plots can be divided into the high-efficiency customer group (group that has given the higher gross margin with fewer activity hours) and the low-efficiency customer group. This resulted in segmentation of the customers—namely, grouping the customers separately and distinguishing the sales efforts by the groups, which the start-up young company had not done before. This graph initiated active discussion on what customer segment indicates high efficiency. More than ten segmentation axes (axes of grouping customers) were proposed; eventually it was found that all these axes converged to only one single axis (although this was extremely unusual). Thereafter, during the first contacts with the prospects, the customers were distinguished using the extracted axes, and the activities of each salesperson were corrected so that the time was allocated preferentially to the customers belonging to the "high-efficiency customer group." As a result, higher operating profits were achieved.

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[2] Though the numerical values have been altered, the descriptions are provided without a significant change in the essential messages.

[3] Suematsu, C., S. Sengoku, and Y. Matsubara (2008), "Assistance of venture start-up management through visualization of activities (measuring and analyzing transactions): a case study," *Proceedings of the 2008 Autumn National Conference on the Japan Society for Management Information*, 2008.
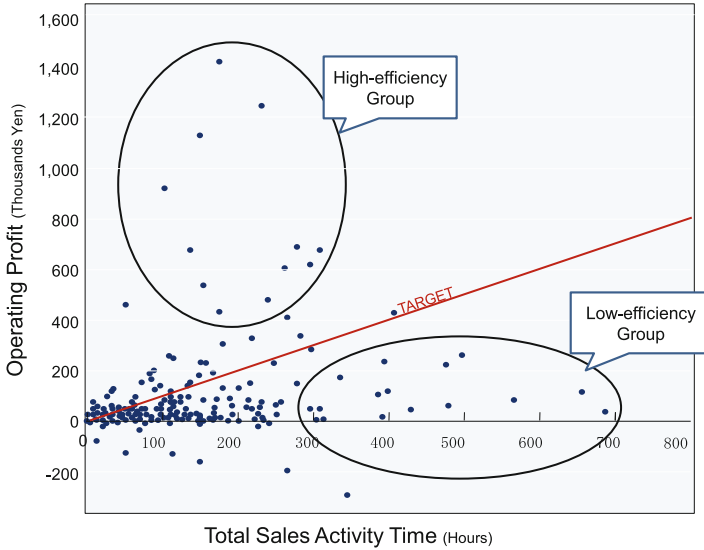
Fig. 8.2 Distribution of productivity: the sales activities of Company C

From the discussions of the graph, it was also noticed that there were combinations of particular salespersons and the customers on whom significant time was spent without making any profit (they had almost a one-to-one pairing of the customers and the salespersons). It was estimated that those salespersons were visiting those customers only to chat privately. Although the individual names of each plot (salesperson) were disguised intentionally to protect the participants' privacy, it seemed that everyone could perceive easily whose plot indicated those abnormal values. Thereafter, this led to the voluntary behavior correction of the salespersons.

This is an example of analyses based on a single graph with only basic data that led nevertheless to a significant improvement in the operating profits. The only barriers to these useful analyses have been the costs of the measurement that the conventional un-standardized methodologies have necessitated.

(2) Case 2: Sales strategy modification

There are numerous examples where such obvious problems have been neglected. The vertical and horizontal axes of Fig. 8.3 are both the same case as those of Fig. 8.2, which is an example where the trend is more pronounced. For this product, there is a clear difference in performance between the customer group to which selling the product is not possible irrespective of the time spent and the customer group to which the product can be sold spending very little time. The reason for this is that a leading-edge technology has been applied to this product; the groups to which this product was sold included laboratories of universities and research institutions, and the products were purchased due to their experimental interest in the technology of this product.

**Fig. 8.3** Productivity distribution of the sales activities of Company D

On the other hand, the customer group to which the product could not be sold was R&D departments in business companies, which could not take the risk of adopting the brand-new experimental technology. The company had an urgent need to establish the product as a pillar of its business; such aspiration kept its focus on the unpromising prospects and left its business activities inefficient, but the graph convinced the top management that a major change in the strategy was urgently required. This is a typical example where the problem is difficult to acknowledge objectively if the daily activities are not visualized explicitly, such as in the form of a graph.

(3) Case 3: R&D activity efficiency improvement

Figure 8.4 shows the details of activities for an R&D department of Company E. Transactions of reporting account for a major part overwhelmingly, and it is noteworthy that meetings in particular took up around 40 % of the total activity time. In practice, meetings account for 30 % to 50 % of the time in most companies, and naturally this percentage tends to increase as it goes up the hierarchy of organizations. The results of surveys showed that "more than 50 % of the official office hours of the administrators"[4] and "25 % to 75 % of the office hours of the business leaders"[5] are spent in meetings. Actually, everyone in Company E was aware of "too many meetings," but they did not recognize the astonishing fact that their meetings accounted for as much as 40 % of the total time. If the consensus on the introduction of measures to improve the

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[4] Tropman, J.E. and G. Morningstar (1985), *Meetings: how to make them work for you*, Van Nostrand Reinhold Company.

[5] Sheridan, J.H. [1989] " $37 billion waste," *Industry Week*, Vol. 238, No. 17, September 4.
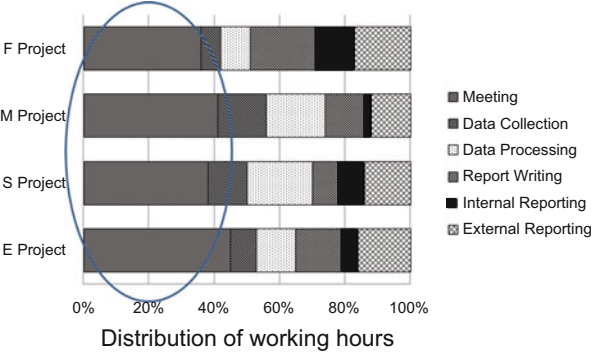
Fig. 8.4 Activity time allocation (%) of the R&D department of Company E
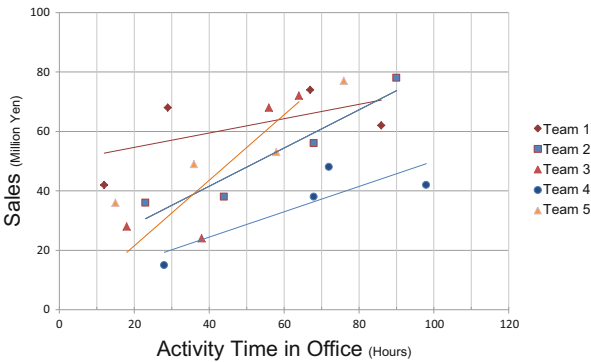

Fig. 8.5 Correlation of the internal activities and the performance at Company F

efficiency is obtained by fostering the recognition, then numerous remedial measures can be usually proposed easily for economizing meetings. Designing these measures is not all that difficult. However, since there are no standards or comparisons with other companies, the recognition has not been fostered. In the case of Company E, it actually started undertaking various desperate initiatives to improve the productivity of meetings after their recognition was established.

(4) Case 4: Sales activity major modification

For Company F, the correlations of all activities with KPI (sales in the case of this company) were investigated after decomposing the activities of the sales department. The result regarding one of the activities is shown in Fig. 8.5. The point to be noted is that there is a correlation between the volume of the internal activities and the performance (sales) as shown in the figure, and there is no correlation between the volume of the external activities and the performance. This company, which manufactures and sells commodity goods, encouraged the salesperson to make frequent courtesy visits ("do not warm your seat").
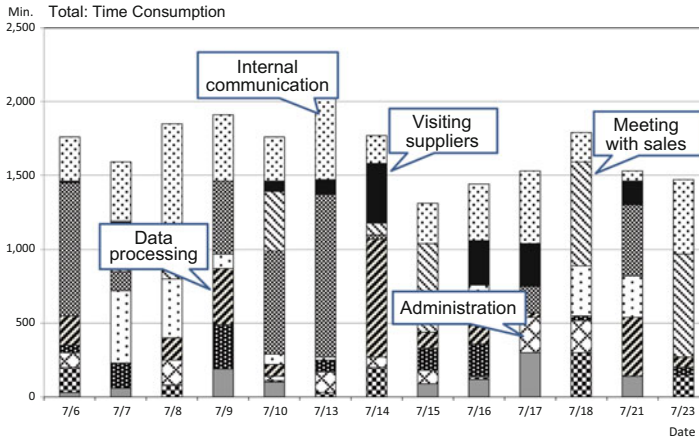
Fig. 8.6 Transaction distribution for the parts procurement department of Company G

However, the salespersons who actually performed well were those who worked more in the office and not those who worked outside the office. With further analysis regarding the better performers' activities in office, it was found that they were preparing PowerPoint slides for their resellers (customers) in which store management and sales promotion are advised. That is, the salespersons who were providing advice based on the market analysis of the region and their competitor information rather than just making courtesy visits were able to increase their sales. This was a startling fact for Company F, and it realized that major strategic changes were required. When businesses are analyzed by visualization, often such major findings are obtained.

(5) Case 5: Finding of neglected activities

Figure 8.6 shows the time distribution for transactions of the parts procurement department of a small-scale manufacturing firm, Company G. When this company's president saw the analysis of this graph, the color of his face changed. He observed that the critical transactions for which he had high expectations were not present. Development of new parts suppliers with a promising technology was their mission with top priority for this department. However, this graph showed that such kind of a transaction activity had never been executed (time was not expended). The president, after having a look at the graph, left the meeting room immediately for the development of the suppliers by himself.

As described previously, the fixed interface has two functions: efficiency improvements of transactions with high frequency and enforcing necessary transactions. While the focus of the examples explained previously were on efficiency improvements of transaction, this example shows the other one, finding that necessary transaction is not being executed. To monitor to what degree the required transactions are executed is also one of the possible analyses.

Comparison of external transactions among sales teams

Comparison of internal transactions within teams
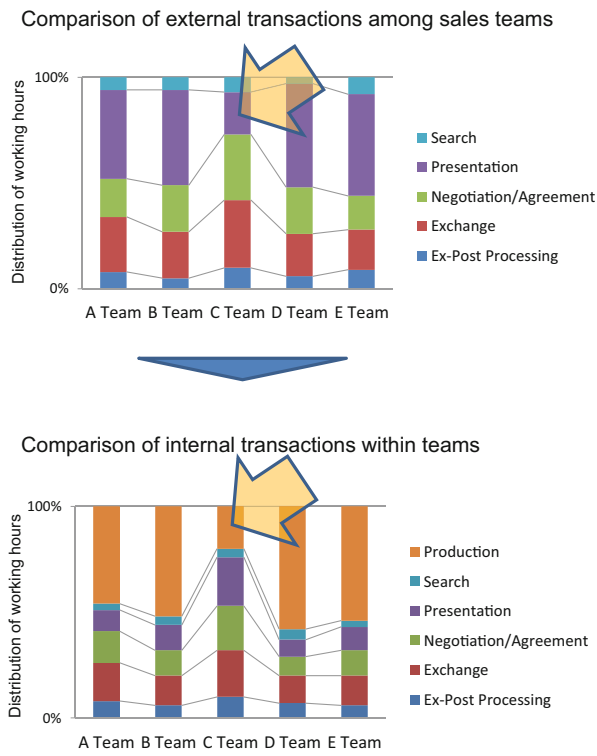
Fig. 8.7 Activity breakdown by transaction element and comparison at Company H

(6) Case 6: Decomposing activities and finding an unknown key success factor

Figure 8.7 shows the activity time comparison among the sales teams of a manufacturing company, Company H, applying the transaction element classification. Regarding transactions with entities outside the company, while the performance of team C was fairly high, their time spent on *presentation* was significantly less compared to other teams. When their time spent on *presentation* was further decomposed and analyzed, a marked difference was specifically discovered in the distribution of their activity time for internal transactions within sales teams. That is, the time for production (preparation of the materials, in this case) was extremely less, as shown in Fig. 8.7. No significant difference in the quality of their presentation compared to other teams was confirmed; only the efficiency was significantly higher. After the reason was qualitatively investigated, it was found that the team had a database of the documents for sharing in the team. This excellent data management approach was recommended to and shared with the other teams immediately.

8.4.3   Example of Visualizing Communication in a Meeting

> Meetings represent the efficiency and effectiveness of all transactions across a company, and the company performance is significantly correlated with the meeting management skills.

A meeting is a place where formal transactions of important information occur. However, meetings are not cautiously well managed almost everywhere. The responsibility for the meeting management is left to voluntary leadership, without institutional supports. Our research team is continuing the research to assess and score the management skills in order to evaluate and improve the efficiency and effectiveness of meetings from the viewpoint of transaction.

Numerous problems are usually observed in meetings, and the following wastages are being routinely recognized without any action taken:

– There are too many meaningless meetings that do not have clear objectives.
– There are too many attendees whose participation is not necessary.
– Meetings do not start and end as planned.
– Proceedings of meetings are not well managed.
– Documents are distributed on the spot, and participants do not prepare for contributions.
– Explanations are inefficient.
– No framework is prepared for discussions.
– Reporting is not well prepared or pointless. Therefore, statuses are difficult to understand.
– Decisions and agreements made are ambiguous. The executions are not thorough because the responsible persons, tasks, or schedules are not explicitly confirmed.
– Agreements reached in the previous meetings are easily ignored.
– Statements regarding problems and issues are not well organized. Action plans are not prepared.
– There is a tendency to avoid argument because major chaos occurs if argument starts.
– Meetings are ritualized meaninglessly.

Those above are observed typically in Japan but are quite common among low-performance companies all over the world.[6]

The futility of meetings not only includes the transactions at such meetings but also significantly impacts the loss in the participants' day-to-day operations. Even if an individual completes the task that has been agreed, the completed task ends up useless, since other related individuals did not complete the related task. The contents determined were not clearly confirmed, and hence the wrong tasks were executed. These also lead to significant opportunity losses. As a further result, the overall motivation decreases. If these obvious wastages are eliminated and

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[6] Thus far, more than 200 meetings in 78 companies/organizations of 18 countries have been researched.

Table 8.1 Types of communication

	Communication type	Characteristics	Applications
Decision making	Leader innovation	Leadership-oriented communication (information gathering, discussion, decision, ordering). Risk of dictatorship	Emergency, innovation, build-up, uncertain environment
	Consensus	Everybody's involvement in decision making. Motivation oriented. Risk-averse and slow decision making	Operational improvements
	Brainstorming	Free communication for idea generation	Idea creation
Execution mgt.	PDCA mgt.	Reporting activities, diversion from plan, problem extraction and solution. Discussion and ordering	Processed management control
	Face-to-face communication	Leader's communication	Order, notice, and enforcement
	Commitment	Members' declaration of commitment in front of peers	Declaration of commitment
EI	Free communication	Mutual understanding and friendship to improve relationship and work environment	Friday evening party, birthday party
	Personal introduction	Introduction of each activities, Q&A and discussion for mutual understandings	Luncheon seminar, morning speech
Education/training		Education, training, and instruction	

EI Emotional Intelligence

reallocated to tasks considered to be effective, the overall productivity will certainly improve.

First, in our research, discussions were classified based on the type of communication as shown in Table 8.1. Communication types should be appropriately adopted depending on the objectives to be achieved. However, the multiple types of discussion become mixed unconsciously, quite often resulting in confusion. For example, if a decision-making discussion is mixed with a brainstorming or free communication, making decisions is severely obstructed. If a leadership meeting is combined with a consensus meeting, the extent to which it is desirable for the participants to be involved in making the decision cannot be understood commonly, which will lead to misunderstanding and mutual distrust between the leader and participants. Decision-making meetings are often mixed with education/training meetings, which reduces the effectiveness of the meetings due to confusion over the objectives.

Meetings with the objectives of decision making and execution management are of special importance and interest to our research team. Therefore, the meetings of those two types have been scored using the scoring sheet in Fig. 8.8, which assists in evaluating the efficiency and the effectiveness of the meetings in a standardized manner.

No.	evaluation item				score
Efficiency: Scoring of Designing and Managing Transactions in Meetings (Management Basics)					
1	Appropriateness of designs	process / procedures of meeting management		meeting positioned in process	
2				meeting management general rules of the organization	
3				meeting management rules for the specific meeting	
4				responsibility and authority of participants	
5		selecting a meeting type		selection of meeting type	
6				selection of meeting sub-type	
7		defining mission, objectives and goals		goals of a set of meetings and milestone of meeting	
8				objectives/goals of meeting	
9		selecting participants, place and means		selection of participants	
10				selection of place/ means (web meeting, etc.)	
11				preparation for absentees	
12		meeting management plan	assignments of roles	decision maker of meeting	
13				chairperson	
14				time keeper	
15				facilitator	
16			management plan	agenda and proceedings	
17				time allocation plan for agenda and proceedings	
18				time allocation plan for materials preparation activities	
19				frameworks for discussions	
20	Execution management of meeting plans above	meeting type		managing meeting types	
21				managing meeting sub-type	
22		meeting management plan		control of discussions toward a goal	
23				control of progress (agenda and proceedings)	
24				punctuality: starting time of meeting	
25				punctuality: ending time of meeting	
26				punctuality: control of time keeping	
27				control of discussion by prepared frameworks for discussions	
28		meeting management procedures and rules		general meeting rules of the organization	
29				general meeting rules for the specific meeting	
	Efficiency Average				
Effectiveness: Scoring of Secure Executions of Transactions (Transaction Culture / Discipline Basics)					
30	Presentation	efficiency of presentation	preparation for meeting	distribution of materials prior to the meeting	
31				easiness to understand materials	
32				participants' preparation prior to the meeting	
33				utilization of file servers for material distribution	
34			access control	rules of access control	
35			presentation	efficiency of presentation (oral presentation, materials)	
36		individual problem definition and solution		structuring (frameworking) of problems	
37				presentation of own solution plans	
38		emotional intelligence	motivating & encouraging comments	encouraging participants' comments	
39				de-motivating participants' comments	
40	Adjustment Agreement	institutional capabilities of problem solving	discussion structuring skills	facilitation by facilitators	
41				facilitation by participants	
42			collaboration skills	collaboration	
43				problem solving by collaboration	
44	Exchange	confirmation level of agreements		confirmation of agreed direction	
45				assignment of responsibilities and tasks	
46				scheduling	
47				making minutes and confirmation	
48				number of postponed issues	
49				number of agreed outcomes	
50		business process oriented action (feasibility, development, proposal, agreement, execution) -long term perspectives -innovation driven		business process development; feasibility discussion	
51				business process development; development, instruction and execution	
52				business process monitoring for possible problems	
53				business process improvement (proposal and agreement)	
54		emotional intelligence	leadership, guidance, enforcement	leadership, guidance, enforcement by a leader	
55			motivating actions	confirming each member's motivation for execution of tasks	
56				encouraging each member's motivation for execution of tasks	
57	Ex-post Processing	confirmation, evaluation and modification of outcomes agreed in the previous meetings		confirming and modifying minutes	
58				confirming, evaluating and modifying outcomes	
	Effectiveness Average				
Evaluation and Improvements of Meeting					
59	Overall	evaluation and actions for improvements of the meeting (design, execution, etc.)			
	OVERALL AVERAGE				

Fig. 8.8 Meeting scoring sheet

(1) Efficiency: Scoring of Designing and Managing Transactions in Meetings (Management Basics)

The upper portion of the sheet is for evaluation of fixed interfaces for routine communications—in other words, how adequately meetings are designed in advance and managed so. It is obvious that things proceed smoothly and efficiently when they have been designed, planned, and prepared well in advance, whether it is an elementary school play or the Olympics ceremony. For example, if types of communication, types of discussion, objectives, goals, agenda, discussion frameworks, and final responsibility of decisions are not fixed, the discussion will be diffused, repetitive, and redundant, leading to confusion. Owners (organizers) of meetings must make the participants share them as interfaces in advance. If time allocation plans and valuable discussion frameworks are provided properly, timekeepers can control the progress easily. In most cases of the companies that have grown globally, this level of management is likely to be well embodied. Naturally, meeting facilitation is enhanced when a facilitator is appointed. These items are assessed and scored regarding how they are designed and managed as per designed plans.

(2) Effectiveness: Scoring of Secure Executions of Transactions (Transaction Culture and Discipline Basics)

The effectiveness of meetings as described in the lower portion of the scoring sheet, how sufficiently the transactions are accomplished, which is influenced by transaction culture and discipline, is scored. If these items are not executed infallibly, the transactions will not be completed effectively, and subsequent outcomes from the meetings cannot be obtained satisfactorily.

– Presentation: Documents must be prepared such that they are easy to understand for discussion and decision making and be distributed sufficiently in advance. Participants must read the documents beforehand and prepare for discussions. Presentations must be prepared and executed adequately. Well-structured solution plans must be proposed instead of just presenting subjective descriptions regarding situations.

– Adjustment (negotiation) and agreement: Adequate facilitation and efficient/effective management must be provided for discussions. Consensus must be built up cooperatively.

– Exchange: Contents of the agreements must be confirmed explicitly. Individual task assignments with goals and schedules must be specifically included.

– Post processing: It must be monitored if proper actions have been executed for the contents that were agreed upon. Evaluation and improvement measures must be discussed.

These effectiveness items are conceived as culture and disciplines that should be encouraged routinely and for which adequate leadership, rules, corporate culture, and so forth may be required.

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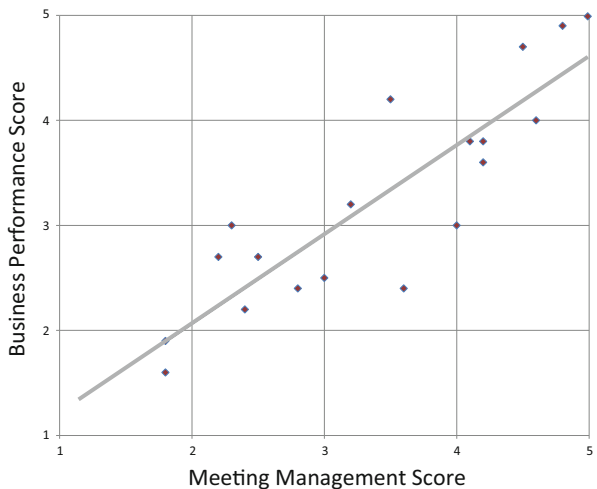
Fig. 8.9 Correlation of meeting management and business performance

From our research results of the scoring, as shown in Fig. 8.9, a strong correlation between the score of meetings and their business performance score[7] is observed. Specifically, global companies achieved high scores for nearly all the scoring items. In our initial hypothesis, the degree of correlation was low due to market turbulence even for companies with higher efficiency, including meeting management. However, those companies with the higher performance scores made high scores both in efficiency and effectiveness. Therefore, it was speculated that those companies that are capable of managing meetings can also prepare for the changes in the market and technology adequately and manage to ensure necessary innovations.

A comprehensive analysis will be reported in the near future after sufficient data are collected.

8.5   Organizational Problems that Obstruct Business Activity Visualization

> Companies that reject visualization do not have their future.

Our research team has been researching business activity visualization from the viewpoint of transaction, and various organizational issues have been revealed well through the analyses of visualization data. Although this fact seems to be easily

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[7] The business performance score is calculated from number of employees, 5 years average profit rate, and 5 years average revenue growth rate, which correspond to the performance in the past, in the present, and in the future, respectively.

recognized by companies, in many cases the measurement and visualization are not welcomed, particularly in the case of Japanese companies. Generally, CEOs show their strong interest, but they face strong objections, either explicit or implicit, from employees.

Our inference is that the desire to improve business correlates to the interest in visualization of activities and business performance. Japanese companies, especially, seem to have lost their zeal. Incidentally, our visualization data are planned to be positioned as the foundation to foster awareness of issues and encourage discussions prior to voluntary solution actions by employees, the style of which is suitable for the bottom-up decision making in Japanese companies. However, the number of employees who showed willingness to participate was very limited. Their most significant success factor from the 1960s to the 1980s, a period when the Japanese companies dominated the world market, was their steady and continuous improvement activities on their shop floors. Some companies collected several hundred thousand suggestions for improvement in a year from their employees at that time. A Japanese word, "Kaizen," which means improvement activities by bottom-up, became known all over the world. This created the source of a competitive edge for Japanese companies.

However, these days, their Japanese firms' passion and perseverance for improvement seem to have critically reduced, especially outside their shop floors. Even if the senior management has it, the thorough corporate-wide execution seems extremely difficult due to their weak governance. The problems of their *village community* management style and culture are the largest cause, but all companies, regardless of their nationality, without appropriate leadership to encourage improvements tend to present the identical symptom. Those companies also have the commonality that the term "innovation" is likely to appear frequently just as an excuse not to change themselves. Companies that reject visualization are deemed not to have their future.